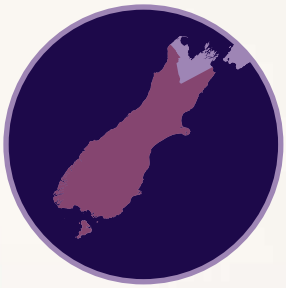
Te Aka Whai Ora
Māori Health Authority



Iwi-Māori Partnership Board Health Profile:

Te Tauraki

Volume Two 2024

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Volume Two

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Tuia te here tāngata ki te whei ao,

Ki te ao mārama,

Ka rongo te pō, ka rongo te ao,

Tihei mauri ora!

Kei ngā tauihu o te iwi,

Koutou ngā iho pūmanawa e hoe tahi nei i te waka o te Hauora Māori,

I runga i te aumiha o te aroha mō te oranga nui, te oranga roa,

O ō tātou whānau, hapū, iwi puta noa i Aotearoa whānui,

Tēnei te mihi, tēnei te tangi atu,

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Te kupu takamua
Foreword

Te kupu takamua – Foreword

We are pleased to present Volume Two of the Iwi-Māori Partnership Board Health Profiles. Together with Volume One, completed in late 2023, these two reports represent the most up-to-date snapshot of Māori health for the health sector.

We acknowledge the legacy of work associated with Māori-led health data reporting to date, from the seminal *Hauora* series to *Tatau Kahukura* and the *2015 District Health Board Māori Health Profiles*, this volume continues the commitment to excellence that Māori communities and whānau both need and deserve.

Volume One includes key demographic information, mauri ora (overall health status), whānau ora (healthy families) and wai ora (healthy environments) indicators specific to each Iwi-Māori Partnership Board. Volume Two presents additional indicators focused on Te Aka Whai Ora-identified health priority areas including kahu taurima (early years), māuiuitanga taumaha (long-term conditions), mate pukupuku (cancer), oranga hinengaro (mental health and addictions) and ko ētahi atu tohu pūnaha (other system indicators) specific to each Iwi-Māori Partnership Board.

The data presented within these profiles are a dimension of 'whānau voice'. They represent Māori stories and Māori lived experience and should be valued as a taonga for the health system to use and respond to as part of the broader commitment to Te Tiriti o Waitangi and equity. The data presented in these profiles also require contextualisation - they are a starting point for Iwi-Māori Partnership Boards to interpret, together with other sources of information, and decide how best to respond to the needs (and rights) of the whānau within their rohe.

As the health sector transforms itself, Iwi-Māori Partnership Boards will play a pivotal role in understanding how the health sector is performing to meet the needs and aspirations of whānau in their area. This profile completes a commitment from Te Aka Whai Ora and Health New Zealand - Te Whatu Ora to provide Iwi-Māori Partnership Boards with data analysed from a Kaupapa Māori epidemiology positioning. As Te Aka Whai Ora as an entity is disestablished, the commitment from Health New Zealand - Te Whatu Ora to continue this important work remains.

We thank everyone who has contributed to both volumes of the profiles and hope that this commitment to excellence in Māori health continues - mō āke tonu atu.

Ngā mihi,

Tipa Mahuta

Waikato, Maniapoto, Ngāpuhi

Te Kaihautū (Board Chair)

Te Aka Whai Ora

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AUDIT	Alcohol Use Disorders Test
Av	Average
BMI	Body mass index
CABG	Coronary artery bypass graft
CI	Confidence interval
COPD	Chronic obstructive pulmonary disease
Dec	December
DHB	District Health Board
DMFT	Decayed, missing, or filled teeth
ED	Emergency department
GP	General practitioner
HbA1c	Glycated haemoglobin
HISO	Health Information Standards Organisation
HPV	Human papillomavirus
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
IMPB	Iwi-Māori Partnership Board
Jan	January
K10	Kessler Psychological Distress Scale
LMC	Lead Maternity Carer
NGO	Non-Governmental Organisation
NHI	National Health Index
NIR	National Immunisation Register
NMDS	National Minimum Dataset
NNPAC	National Non-Admitted Patient Collection
No	Number
NSAIDs	Non-steroidal anti-inflammatory drugs
NZ	Aotearoa/New Zealand

NZCR	New Zealand Cancer Registry
NZHS	New Zealand Health Survey
NZDep2018	New Zealand Index of Deprivation 2018
Pacific	Pacific people(s)
Pae Ora Act	Pae Ora (Healthy Futures) Act 2022
PHO	Primary Health Organisation
PMMRC	Perinatal and Maternal Mortality Review Committee
PRIMHD	Programme for the Integration of Mental Health Data
RR	Rate ratio
SA2	Statistical area level 2
Sep	September
SSRIs	Selective serotonin reuptake inhibitors
StatsNZ	Statistics New Zealand
SUDI	Sudden unexpected death in infancy
TKHM	Te Kupenga Hauora Māori
VDR	Virtual Diabetes Register
Wai 2575	Wai 2575 Health Services and Outcomes Kaupapa Inquiry
WCTO	Well Child Tamariki Ora
WHO	World Health Organization

Kuputaka Māori – Māori Glossary

Aotearoa	New Zealand
Hapori Māori	Māori communities
Hapū	Sub-tribe
Hauora Māori	Māori health
Iwi	Tribe
Kahu taurima	Early years
Kaupapa Māori	Māori initiative, approach, topic, agenda, principle, ideology
Ko ētahi atu tohu pūnaha	Other system indicators
Kuputaka Māori	Māori glossary
Manatū Hauora	Ministry of Health
Mate pukupuku	Cancer
Māori	Indigenous people(s) of Aotearoa New Zealand
Māuiuitanga taumaha	Long-term conditions
Mauri ora	Overall health status
Mō āke tonu atu	Forever
Ngā āpitihanga	Appendices
Ngā kupu whakamihi	Acknowledgements
Ngā mihi	Greetings
Oranga hinengaro	Mental health and addictions
Pae ora	Healthy futures
Rangatahi	Youth
Rārangi papatau	List of figures
Rārangi tīporo	List of abbreviations, acronyms & initialisms
Rārangi tūtohi	List of tables
Rohe	Region
Tamariki Māori	Māori children
Taonga	Treasure
Tatau Kahukura	Māori Health Chartbook 2015
Te Aka Whai Ora	Māori Health Authority
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Te kupu whakataki	Introduction
Te rārangi tohutoro	References
Te Rau Hinengaro	New Zealand Mental Health Survey 2004
Te Rōpū Rangahau Hauora a Eru Pōmare	Eru Pomare Māori Health Research Centre, The University of Otago
Te Tiriti o Waitangi	Treaty of Waitangi
Te Whatu Ora	Health New Zealand
Wāhine Māori	Māori women
Wai ora	Healthy environments
Whakamaua	Māori Health Action Plan: 2020-2025
Whānau	Family
Whānau ora	Healthy families

Te kupu whakataki
Introduction

1. Te kupu whakataki – Introduction

1.1. Overview of Iwi-Māori Partnership Boards

One of the three purposes of the Pae Ora (Healthy Futures) Act 2022 (Pae Ora Act) is to "achieve equity in health outcomes among New Zealand's (NZ) population groups, including by striving to eliminate health disparities, in particular for Māori". Iwi-Māori Partnership Boards (IMPBs) are an important legislated mechanism for the Crown to give effect to the principles of Te Tiriti o Waitangi (the Treaty of Waitangi). The Pae Ora Act requires Health New Zealand (Te Whatu Ora) and the Māori Health Authority (Te Aka Whai Ora) to engage with IMPBs.

The purpose of IMPBs is to represent local Māori perspectives on:

a) the needs and aspirations of Māori in relation to hauora Māori outcomes; and

b) how the health sector is performing in relation to those needs and aspirations; and

c) the design and delivery of services and public health interventions within localities.

The Pae Ora Act sets out the criteria for recognition of an organisation as an IMPB. The criteria ensure the Boards are broadly representative of all Māori within the relevant area and include;

a) that the proposed boundaries of the area covered by the organisation do not overlap with the boundaries of any area covered by any other IMPB;

b) that the organisation has taken reasonable steps to engage with relevant Māori communities and groups; and

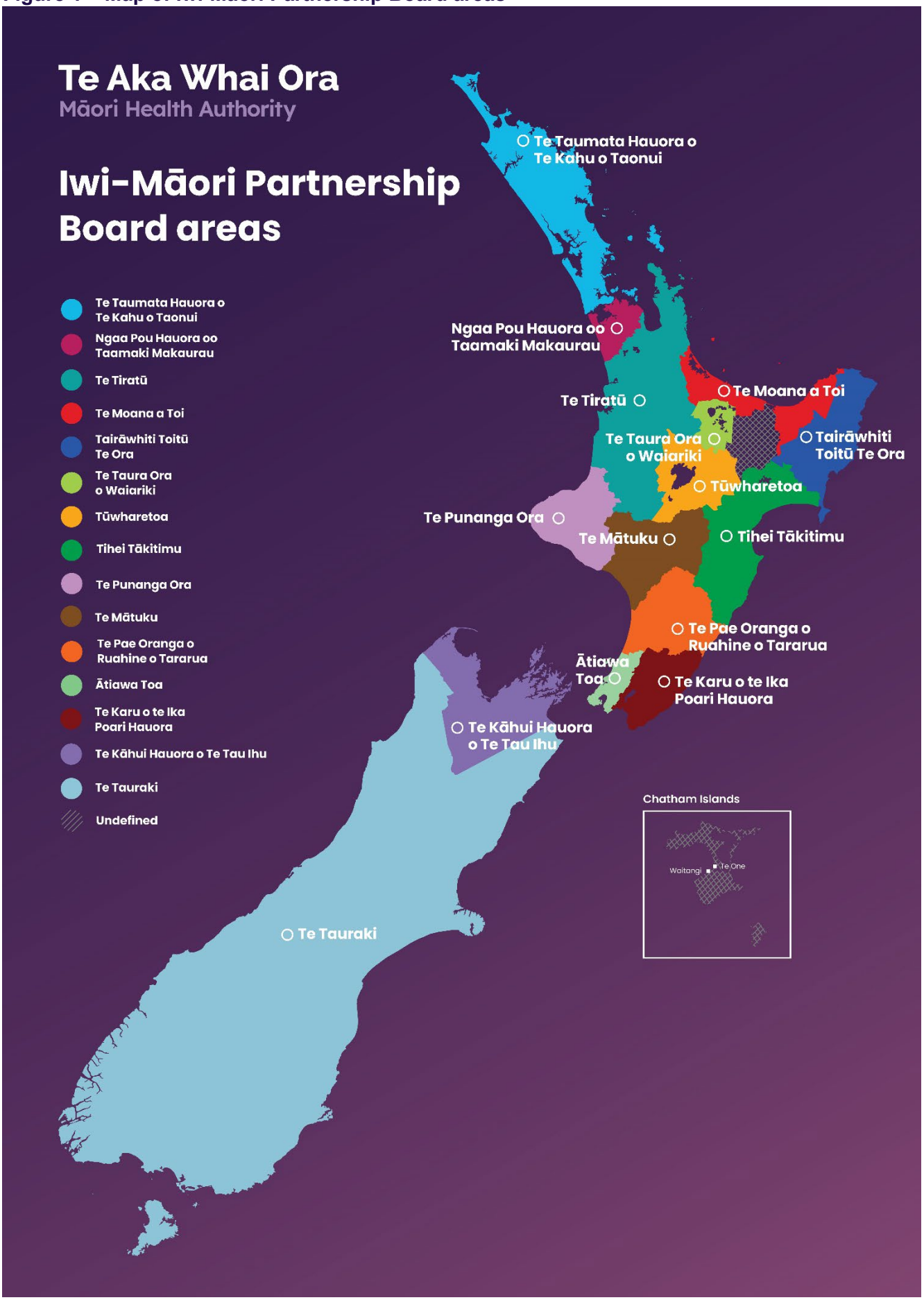
c) the organisation must demonstrate that it has the capacity and capability to perform the necessary functions of IMPBs as set out in the Act, and that the organisation can represent and be accountable to hapori Māori (Māori communities).

Once the Board of Te Aka Whai Ora[1] is satisfied that an organisation has met the criteria for recognition, they advise the Minister of Health who then recommends the making of an Order in Council so that the organisation can be listed as an IMPB (under Schedule 4 of the Pae Ora Act). On the advice of the Te Aka Whai Ora Board, the Minister of Health can also recommend an Order in Council to vary or remove an IMPB from Schedule 4 of the Pae Ora Act. An important feature of IMPBs is that they can renegotiate boundaries between each other as and when works for the collective. Such is the case for any emerging organisation who must consult with neighbouring IMPBs should their intended boundary result in overlap. This ensures the self-determination of communities, and strategic alignment with community need.

As at May 2024, 15 IMPBs were listed in Schedule 4, as shown in Figure 1.

[1] Note: From 1 July 2024 the role of recognising IMPBs currently carried out by the Te Aka Whai Ora Board will be carried out by the Director-General of Health, who will then advise the Minister of Health.

Figure 1 – Map of Iwi-Māori Partnership Board areas



1.2. Purpose & audience for this report

Under the Pae Ora Act, Te Aka Whai Ora must take reasonable steps to support IMPBs to achieve their purpose, including by providing administrative, analytical, or financial support where needed; and providing sufficient and timely information. These data profiles have been prepared for each IMPB formed in 2023, as part of a commitment by Te Aka Whai Ora to provide IMPBs with health information to inform priorities and actions.

Te Aka Whai Ora has produced these profiles, together with support from Te Whatu Ora, to provide IMPBs with a baseline snapshot of the health of Māori in their rohe (region). These profiles are limited to the data sources and indicators currently available in the government health system, and may not capture all aspects of hauora Māori, determinants of wellbeing, or government responsibility.

1.3. Positioning

This profile has been drafted from a Kaupapa Māori research and epidemiology positioning (Simmonds, Robson et al. 2008). This positioning includes:

- a commitment to high quality ethnicity data reporting and analysis (that includes understanding how ethnicity data are collected and recorded and the implications of these factors on data quality from various sources);
- a commitment to using appropriate comparator groupings (or not) within ethnic data comparisons (that reflect Te Tiriti o Waitangi/rights-based and equity appropriate interpretations) (Harris, Paine et al. 2022), and;
- a strengths-based interpretation of data that rejects ‘victim-blame’ or ‘cultural-deficit’ interpretations of any data presented (Curtis 2016).

It is important to note that the identification of inequities between Māori and non-Māori is not a signal of Māori failure or shortcomings. Rather, a Kaupapa Māori positioning foregrounds racism, privilege and power imbalances as the fundamental drivers of ethnic inequities in health for Māori compared to non-Māori (Curtis, Jones et al. 2023).

The data presented in this profile require contextualisation - they are a starting point for IMPBs to interpret, together with other sources of information, and decide how best to respond to the needs (and rights) of their specific population. Although quantitative in nature, the data presented within these profiles are a dimension of ‘whānau voice’. They represent Māori stories and Māori lived experience and should be valued as a taonga for the health system to use and respond to as part of the broader commitment to Te Tiriti o Waitangi and equity.

1.4. Understanding Māori health and health inequities

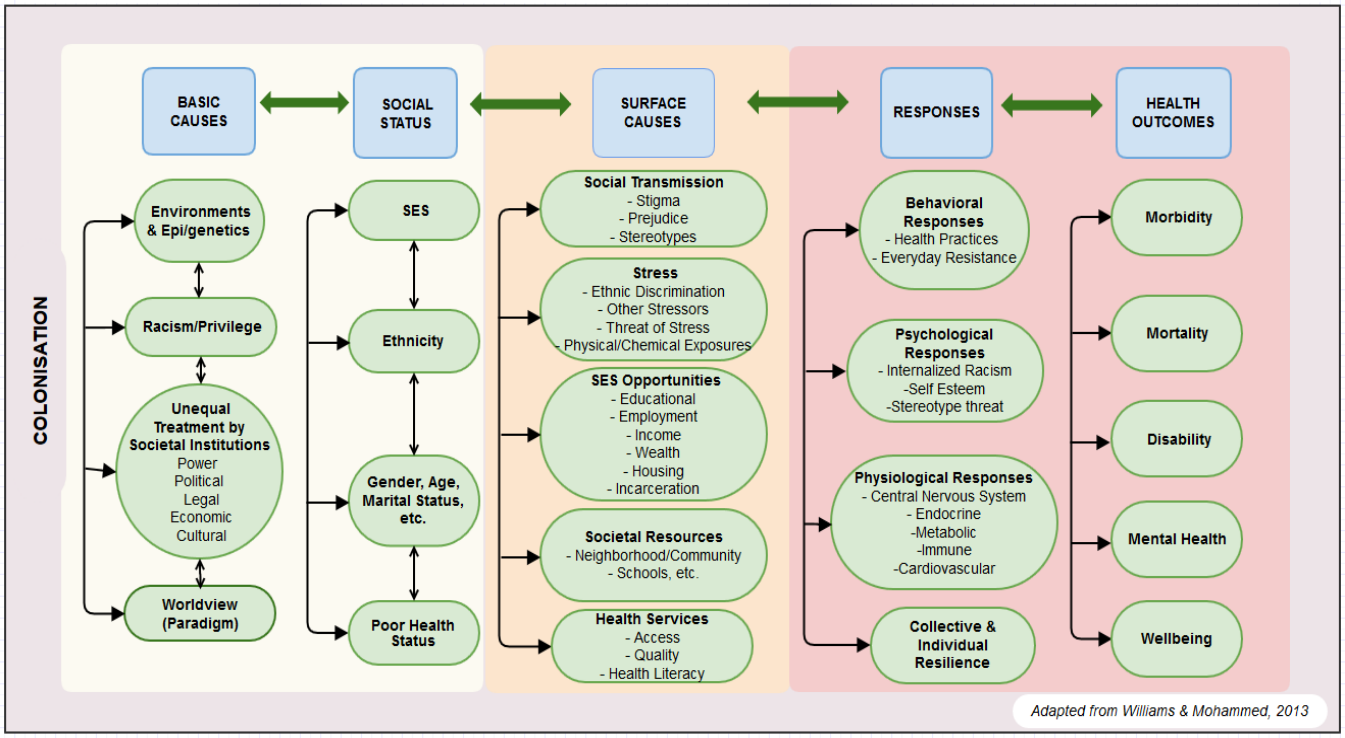
It is important to have a common understanding on what the fundamental drivers of Māori health and health inequities are in order to respond appropriately. A helpful framework is the 'Te Kupenga Hauora Māori (TKHM) modified model' (Curtis, Jones et al. 2023) - a Māori model that draws upon international theorisation on the causation of ethnic health inequities (Figure 2). The TKHM modified model outlines a framework to understand the causes of Māori:non-Māori health inequities within an Aotearoa and Indigenous specific context.

The framework emphasises the importance of distinguishing *basic* causes from *surface* (or intervening causes). Overall, changes in *basic* causes create important changes in health *outcomes*. *Social status* categories are created, and reinforced, by *basic* causes. *Social status* categories considered to have particular relevance to Māori health outcomes include: *ethnicity, socio-economic status, gender, age*, and *poor health status*. In the TKHM modified model, *surface causes* represent a number of intervening mechanisms that link *social status* categories such as *ethnicity*, to *health outcomes*. Important intervening mechanisms include: *stress*, *socio-economic opportunities*, *societal resources*, *health services* and *social transmission*. Health *outcomes* reflect the mechanisms by which differences in health status and therefore health inequities are observed or measured. For example, health can vary with respect to *morbidity* (ill health), *mortality* (death rates), presence or absence of *disability*, *mental health* and generalised *wellbeing*.

The TKHM modified model foregrounds colonisation as a key determinant of health inequities underpinning all levels from *basic* to *surface* causes. In doing so, the model acknowledges the historical trauma of colonisation whilst also foregrounding the ongoing contemporary effects of colonisation in today's society. It is not a simple, unidirectional relationship between causes at different levels - but rather there is a dynamic interplay between causes and pathways. Worldviews and positioning are also a basic cause, and privilege alongside racism plays a causative role in Māori health inequities.

Explanations define solutions. Therefore, a conceptual framework can support the understanding of fundamental causes of Indigenous and Māori health inequities and how best to respond to those inequities once they have been identified. Many of the routine data that are collected and reported in Aotearoa, including in this report, focus on the downstream surface causes. It is important to understand that many of these indicators are outcomes/consequences of structural processes of marginalisation that we do not properly measure, and that intervention needs to occur upstream to achieve health equity for Māori.

Figure 2 –Te Kupenga Hauora Māori modified model for explaining Indigenous/ethnic determinants of health



Source: Curtis, Jones et al. 2023

1.5. Scope for these profiles

These profiles are the first reports which specifically focus on data related to IMPBs. These profiles focus on key population demographic data, indicators reflecting key socio-economic determinants of wellbeing, health status and health services indicators. Not every health issue or determinant is included. These IMPB profiles are presented in two volumes:

- Volume One - contains key demographic data and projections, overall life expectancy and health outcomes measures, and indicators relating to whānau wellbeing and socio-economic and environmental determinants of wellbeing.
- Volume Two - contains health service utilisation and outcomes measures, with a focus on the four health priority areas identified in the 2022 Te Aka Whai Ora Māori Health Priorities Report (Curtis E, Loring B et al. 2022): the first 1000 days, cancer, long-term conditions, and mental health.

1.5.1. Why focus on these health areas?

The four health priorities identified by Te Aka Whai Ora relate to the largest causes of avoidable death and illness for Māori, and also represent the greatest potential for government policy and health system intervention. All of these health issues have been insufficiently addressed over the last decades, and while we have provided a list of health issues to focus on, how these issues are addressed is crucial to success. Above all, we must ensure that the process of change benefits and occurs in partnership with Māori whānau, hapū, iwi and communities.

Beyond these four priorities, we also acknowledge that there are other conditions, though not necessarily major contributors on an absolute scale, that are leading causes of relative inequity for Māori, including rheumatic heart disease, viral hepatitis, cardiomyopathy, hypertensive heart disease, bronchiectasis and drug use disorder (Ministry of Health 2013).

Importantly, improving Māori hauora and realising Māori rights requires a focus beyond individual health conditions. Many of the health challenges share common causes, common system failures and affect the same whānau. It is important to move beyond a narrow focus on specific conditions to the system enablers which also need to be changed. Addressing the four health priorities for Māori requires actions in a core set of synergistic domains:

1. Māori governance that is empowered to govern,
2. Implementation of evidence-based policies for prevention,
3. Integrated whānau-centred services at all levels of the system,
4. Primary care that works for Māori,
5. A culturally-safe workforce, including a strengthened Māori workforce, and
6. Universal responsibility of the whole health sector for monitoring performance by ethnicity and requirement to act upon results.

1.5.2. Where else can we find Māori health data?

These reports are by no means exhaustive, and IMPBs may wish to also refer to other sources of information available through respective government agencies for more in-depth data related to areas such as education, social development, environment, employment or housing. We are limited to currently available data, which may not reflect all indicators of importance to IMPBs, and not all data (for example,

on uncommon health conditions) can be meaningfully disaggregated by ethnicity to the level of IMPBs. These IMPB profiles are intended to be used in conjunction with other sources of publicly available health system reporting by the Ministry of Health, Te Whatu Ora, the Health Quality and Safety Commission, Statistics New Zealand (StatsNZ) and other agencies.

There have also been a number of previous sources of reporting specifically on Māori health, which IMPBs may wish to refer to for additional information relevant to their area, including trends over time. Some of these key sources include:

Whakamaua Dashboard[2]

This online dashboard presents quantitative measures which assess system performance against the four objectives of Whakamaua: Māori Health Action Plan 2020-2025. From 2023, the Whakamaua dashboard contains some indicators disaggregated by IMPB. These data for IMPBs use the Health Service Utilisation population as the denominator, which differs slightly from the Census population denominator chosen in these IMPB profiles. The Whakamaua dashboard compares Māori data to non-Māori non-Pacific data.

WAI 2575 Māori Health Trends Report[3]

This report was compiled by the Ministry of Health in 2019, to inform the Wai 2575 Health Services and Outcomes Kaupapa Inquiry (Wai 2575). The report shows changes of Māori health over the years 1990-2015. Most data are presented at a national level, for Māori compared to non-Māori, and Māori compared to non-Māori non-Pacific, although some variables are available at a District Health Board (DHB) level.

A Window on the Quality of Aotearoa New Zealand's Health Care 2019 - a view on Māori health equity[4]

A Window on the Quality of Aotearoa New Zealand's Health Care 2019 - a view on Māori health equity was compiled by the Health Quality & Safety Commission and highlights a number of areas where change is needed in the health system. The report is divided into three chapters. The first analyses inequity between how Māori and non-Māori access and receive health services, and the effects on equity of improvement activities in our system. The second chapter asks why these inequities exist, and the third chapter addresses opportunities for improvement.

2015 District Health Board Māori Health Profiles[5]

The 2015 District Health Board Māori Health Profiles were produced by Te Rōpū Rangahau Hauora a Eru Pōmare at the University of Otago in Wellington. The District Health Board Māori Health Profiles present a snapshot of Māori health compared with non-Māori across a range of health and disability-related indicators. They can create a picture of the health status of a DHB's population at a given time and allow some comparison of trends over time. The profiles are available as word and pdf documents, and Excel tables containing data from the profiles together with national rates for most indicators.

Tatau Kahukura: Māori health statistics[6]

Statistical profiles on Māori health compiled by the Ministry of Health, most recently completed in 2015. Presents Māori compared to non-Māori national level data for a range of health indicators (socio-economic determinants, risk factors, health services and health outcomes), and data are age-standardised to the 2001 Māori population.

[2] https://minhealthnz.shinyapps.io/WhakamauaDashboard/

[3] https://www.health.govt.nz/publication/wai-2575-maori-health-trends-report

[4] https://www.hqsc.govt.nz/resources/resource-library/a-window-on-the-quality-of-aotearoa-new-zealands-health-care-2019-a-view-on-maori-health-equity-2/

[5] https://www.health.govt.nz/publication/dhb-maori-health-profiles

[6] https://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics

Hauora: Māori Standards of Health IV: A study of the years 2000-2005[7]

Hauora: Māori Standards of Health IV, published in 2007, is the most recent edition in the Hauora series, produced by Te Rōpū Rangahau Hauora a Eru Pōmare, and covers the period 2000 to 2005. Careful consideration has been given to the manner in which evidence has been presented and the commentaries are rightly written from Māori perspectives. The first three chapters situate health statistics within the broader context, including the theoretical, demographic and socio-economic contexts. This is followed by chapters on mortality, public hospitalisations, cancer and mental health. This volume of Hauora also includes a number of topic-based chapters from invited authors, including chapters on cardiovascular disease; diabetes; respiratory disease; oral health; disability; sleep problems; occupational safety and health; health in prisons; and the National Primary Medical Care Survey.

To maximise consistency and make it easier for IMPBs to assess how various indicators in their rohe are tracking over time, we have endeavoured to replicate the scope and approach taken in the 2015 District Health Board Māori Health Profiles as closely as possible. There are some minor variations in statistical methods, definitions and geographical boundaries for some indicators, which mean that exact comparison with these earlier profiles is not always possible.

1.6. Data sources

The data presented in this report come from routinely collected national government health datasets and routine national surveys. The main data sources for this report are:

- National Maternity Collection
- National Immunisation Register
- Community Oral Health Service data
- National Minimum Dataset
- Mortality Collection
- 2018 Census of Population and Dwellings
- New Zealand Health Survey
- Virtual Diabetes Register
- New Zealand Cancer Registry
- Cancer screening programme data from the National Screening Unit
- National Non-Admitted Patient Collection
- Programme for the Integration of Mental Health Data

Data are presented for Māori and non-Māori residents, using the geographical boundaries in each dataset which most closely correspond to the boundaries of the IMPB. For some measures, the closest available match at this time has been the boundaries of the former DHBs covering the IMPB rohe. Where an IMPB area encompasses more than one former DHB, data are presented separately for each DHB area, to provide a sense of variation for Māori within the IMPB.

When selecting which years of data to present, the most recent year range with complete, verified data has been chosen. Different data sources go through different processes of verification and for some data (e.g. deaths) there is a longer delay to make sure that all deaths have been accurately recorded with the correct cause.

[7] https://www.otago.ac.nz/wellington/departments/publichealth/research-groups-in-the-department-of-public-health/erupomare/research/hauora-maori-standards-of-health-iv-a-study-of-the-years-2000-2005

1.7. How to understand this report

The technical appendix at the end of this report contains further information to help users interpret the data presented. This includes a basic explanation of how to interpret the tables provided. There is also a description of key methods, including age-standardisation, comparator groups and statistical calculations. The appendix also contains a description of the quality of ethnicity data in each data source used in this profile, and how this may affect the accuracy of information for Māori. Further technical details are provided about the methods and data sources used to compile these reports, so that the methods can be replicated by others.

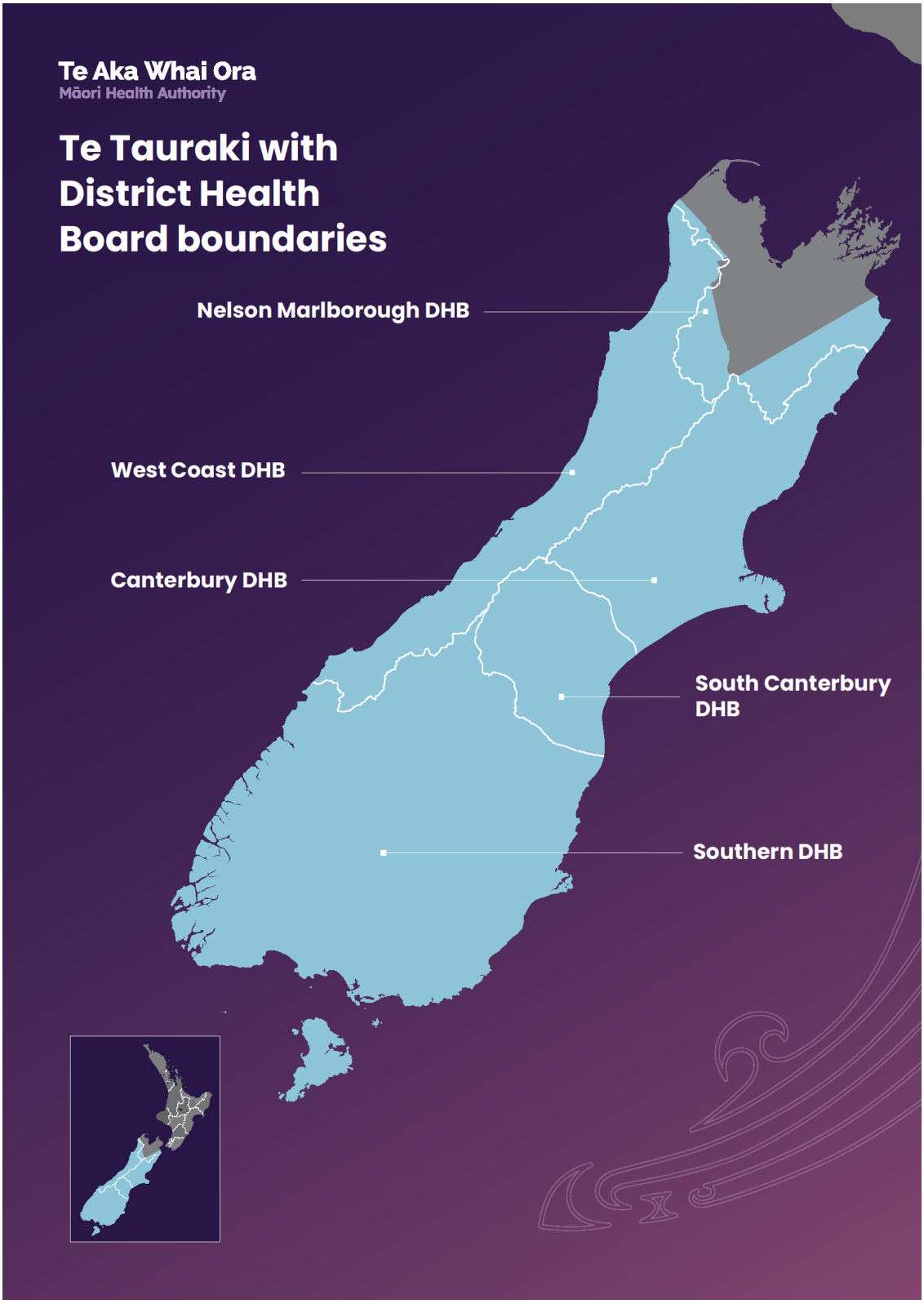
1.8. About Te Tauraki

Te Tauraki IMPB was home to an estimated 112,807 Māori in 2023[8] and consists of the geographic area of Te Waipounamu (South Island). Figure 3 shows that the health planning area of Te Tauraki IMPB includes all the former West Coast, Southern, and South Canterbury DHBs, and virtually all of Canterbury DHB. The Chatham Islands are also part of Canterbury DHB, but the small population of the Chatham Islands is not likely to make a significant change to the relevance of Canterbury DHB data for Te Tauraki IMPB.

For most indicators presented in this report, data tables for Te Tauraki IMPB are made up of the totals for West Coast, Southern, South Canterbury and Canterbury DHBs (rather than the precise geographic area of Te Tauraki IMPB). Data tables are also presented for each DHB separately where numbers are sufficiently large. As Figure 3 shows, Te Tauraki IMPB also includes parts of the former Nelson-Marlborough DHB, however as these areas of overlap do not include major population centres, data for Nelson-Marlborough DHB are not presented in this report for indicators where DHB level data are used. These geographic areas in the former Nelson-Marlborough DHB are included however in the IMPB level data on missed first specialist appointments and hospitalisations for diabetes complications. For these two indicators, the IMPB health planning area has been mapped to SA2 geographic areas rather than DHB boundaries. See the technical appendix at the end of this report for more details about how the geographic areas for the IMPB have been calculated.

[8] Volume Two of the IMPB profiles uses an updated methodology for calculating IMPB health planning areas, so this population estimate may differ from the estimate provided in 2023 in Volume One. Please see the technical appendix for more details about the refinements to the approach.

Figure 3 – Map of Te Tauraki IMPB with DHB boundaries, 2023



Kahu taurima
Early years

2. Kahu taurima – Early years

The 1,000 days between pregnancy and a child's second birthday offer a unique window of opportunity to shape healthier and more prosperous futures. There is increasing evidence that factors during this 1,000-day window, including nutrition, stress, health, and relationships can have a profound impact on a child's ability to grow and learn. Many of the key causes of Māori illness and death such as obesity, heart disease, and mental health problems have their origins in early life (Moore 2017).

There are missed opportunities to deliver appropriate care and support for Māori women and children during this critical 1,000-day window. This includes actions to improve access to the positive determinants of health, and reduce exposure to the harmful determinants of health, including poverty, poor housing, unsafe environments, harmful foods and beverages, and substances such as tobacco. Nationally, three[9] of the nine measures of child poverty increased for the year ending June 2023, compared to 2022, and 21.5% of tamariki Māori lived in households experiencing material hardship (Statistics New Zealand 2024).

Volume One of this IMPB profile highlighted data on some of these key determinants of social, economic, and cultural wellbeing. This chapter will delve further into some of the key health system data relating to performance for Māori in these critical early years.

2.1. Maternal and infant mortality

Nationally, maternal and infant mortality are higher for Māori than non-Māori (Dawson, Jaye et al. 2019, Ministry of Health 2019). The numbers of these devastating deaths each year are too small to present for individual IMPBs, but national data highlights the importance of this issue for Māori. In their 2022 report, the government's Perinatal and Maternal Mortality Review Committee (PMMRC) noted that death rates and disparities have not decreased since reports began in 2007, and NZ continues to tolerate a system which fails Māori women and babies (Perinatal and Maternal Mortality Review Committee 2022).

Suicide is the leading cause of maternal mortality in NZ. Wāhine Māori were 2.9 times more likely to die by suicide as a direct result of maternal mortality than women of NZ European ethnicity in the 2006–2020 period (Perinatal and Maternal Mortality Review Committee 2022). Premature birth is the second leading cause of perinatal mortality after congenital abnormalities (Perinatal and Maternal Mortality Review Committee 2022). The leading causes of avoidable deaths in Māori children are all amenable to prevention including prematurity, sudden unexpected death in infancy (SUDI), respiratory disease and "external causes" (accident, injury and assault) (Mills, Reid et al. 2012).

The PMMRC makes a comprehensive set of recommendations (Perinatal and Maternal Mortality Review Committee 2022), including for government agencies, Te Whatu Ora districts, and health professionals/regulatory bodies, and these provide a very relevant guide for action at IMPB level. Priority recommendations include mandatory cultural safety training for all people working in antenatal and infant care, improving antenatal care/screening, communication/coordination, maternal mental health, SUDI prevention, and ethnicity data collection and analysis. They call for a particular focus on improving services for young mothers, recognising socioeconomic deprivation as a key independent risk factor for premature birth, and better identifying and addressing modifiable risk factors during pregnancy. Many of the most urgent recommendations from the 2022 PMMRC report are the same recommendations the committee has made in previous reports, indicating that action has not yet been taken.

[9] There were increases in the percentages of children living in material hardship, severe material hardship and in low-income households that had an after-housing-costs income that was less than 50 percent of the baseline year's median after-housing-costs equivalised disposable household income.

2.2. Births

In 2022, there were 2,218 Māori babies born in Te Tauraki making up 20.7% of all babies born in the IMPB (Table 1). Māori made up 27.1% of births in West Coast DHB (Table 2), 21.9% in Southern DHB (Table 5), 20.0% in Canterbury DHB (Table 3) and 18.7% in South Canterbury DHB (Table 4).

Table 1 – Births, Te Tauraki, 2022

Indicator	Māori		non-Māori
	Number	% of all live births	Number
Births	2,218	20.7	8,489

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 2 – Births, West Coast DHB, 2022

Indicator	Māori		non-Māori
	Number	% of all live births	Number
Births	79	27.1	212

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 3 – Births, Canterbury DHB, 2022

Indicator	Māori		non-Māori
	Number	% of all live births	Number
Births	1,296	20.0	5,183

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 4 – Births, South Canterbury DHB, 2022

Indicator	Māori		non-Māori
	Number	% of all live births	Number
Births	110	18.7	479

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 5 – Births, Southern DHB, 2022

Indicator	Māori		non-Māori
	Number	% of all live births	Number
Births	733	21.9	2,615

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.

Being born with either an abnormally low or high birthweight is associated with a higher risk of a range of health outcomes (Hassan, Jahanfar et al. 2021, Magnusson, Laivuori et al. 2021). Between 2018 and 2022, 6.7% of Māori babies in Te Tauraki had low birthweight (<2,500g) and 2.5% had high birthweight (>4,500g). Māori babies were 1.2 times more likely than non-Māori to be born prematurely in Te Tauraki (8.9% of Māori births) (Table 6). These patterns were similar across West Coast DHB (Table 7), Canterbury DHB (Table 8) and Southern DHB (Table 10). Māori babies in South Canterbury DHB were 1.3 times more likely to be born prematurely compared to non-Māori (11.4% of Māori births in South Canterbury DHB) (Table 9).

Table 6 – Birthweight and gestation, Te Tauraki, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
Low birthweight	140	6.7	(5.6, 7.8)	661	7.6	(7.1, 8.2)	**0.87**	**(0.86, 0.89)**
High birthweight	53	2.5	(1.9, 3.2)	216	2.5	(2.2, 2.8)	**1.02**	**(1.01, 1.03)**
Preterm	187	8.9	(7.6, 10.2)	660	7.6	(7.1, 8.2)	**1.17**	**(1.15, 1.18)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Notes: Low birthweight is less than 2,500g. High birthweight is greater than or equal to 4,500g. Preterm is less than 37 weeks gestation. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 7 – Birthweight and gestation, West Coast DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
Low birthweight	5	7.0	(1.0, 13.0)	21	8.6	(4.9, 12.4)	**0.81**	**(0.76, 0.87)**
High birthweight	2	2.2	(0.0, 5.5)	8	3.2	(1.0, 5.5)	**0.66**	**(0.64, 0.69)**
Preterm	6	7.8	(1.5, 14.1)	17	7.0	(3.6, 10.3)	**1.12**	**(1.04, 1.20)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Notes: Low birthweight is less than 2,500g. High birthweight is greater than or equal to 4,500g. Preterm is less than 37 weeks gestation. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 8 – Birthweight and gestation, Canterbury DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
Low birthweight	80	6.6	(5.2, 8.1)	390	7.5	(6.7, 8.2)	**0.89**	**(0.87, 0.90)**
High birthweight	35	2.9	(1.9, 3.8)	135	2.6	(2.2, 3.0)	**1.10**	**(1.09, 1.11)**
Preterm	106	8.7	(7.1, 10.4)	366	7.0	(6.3, 7.7)	**1.25**	**(1.22, 1.27)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Notes: Low birthweight is less than 2,500g. High birthweight is greater than or equal to 4,500g. Preterm is less than 37 weeks gestation. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 9 – Birthweight and gestation, South Canterbury DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
Low birthweight	9	8.5	(3.0, 14.0)	42	8.3	(5.8, 10.8)	1.02	(0.97, 1.09)
High birthweight	2	1.8	(0.0, 4.4)	14	2.9	(1.4, 4.3)	**0.64**	**(0.63, 0.66)**
Preterm	12	11.4	(5.1, 17.8)	43	8.5	(6.0, 11.1)	**1.34**	**(1.26, 1.43)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Notes: Low birthweight is less than 2,500g. High birthweight is greater than or equal to 4,500g. Preterm is less than 37 weeks gestation. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 10 – Birthweight and gestation, Southern DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
Low birthweight	45	6.5	(4.6, 8.4)	209	7.8	(6.7, 8.8)	**0.83**	**(0.82, 0.85)**
High birthweight	15	2.2	(1.1, 3.3)	59	2.2	(1.6, 2.7)	0.99	(0.98, 1.01)
Preterm	63	9.0	(6.8, 11.2)	235	8.8	(7.6, 9.9)	1.03	(1.00, 1.05)

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Notes: Low birthweight is less than 2,500g. High birthweight is greater than or equal to 4,500g. Preterm is less than 37 weeks gestation. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

2.3. Antenatal and well child services

Early access to high quality antenatal care is important to ensure the optimum wellbeing of mothers and babies. Between 2018 and 2022 in Te Tauraki, 75.9% of Māori women were enrolled with a Lead Maternity Carer in their first trimester (before 14 weeks of pregnancy) (Table 11). Māori were 0.9 times less likely than non-Māori in Te Tauraki to receive antenatal care in the first trimester of pregnancy.

In West Coast DHB (Table 12), 81.7% of Māori women were enrolled in their first trimester, 77.2% in Southern DHB (Table 15), 75.2% in Canterbury DHB (Table 13) and 72.0% in South Canterbury DHB (Table 15). Māori women were 0.9 times less likely than non-Māori women to be enrolled with a Lead Maternity Carer in their first trimester across all DHBs.

Table 11 – Enrolment with Lead Maternity Carer in first trimester of pregnancy, Te Tauraki, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
First trimester registration	1,591	75.9	(72.2, 79.7)	7,358	85.1	(83.2, 87.1)	**0.89**	**(0.87, 0.91)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Note: First trimester is defined as conception up until 14 weeks of pregnancy. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 12 – Enrolment with Lead Maternity Carer in first trimester of pregnancy, West Coast DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
First trimester registration	61	81.7	(61.2, 102.3)	211	87.5	(75.6, 99.3)	0.93	(0.85, 1.03)

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Note: First trimester is defined as conception up until 14 weeks of pregnancy. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 13 – Enrolment with Lead Maternity Carer in first trimester of pregnancy, Canterbury DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
First trimester registration	912	75.2	(70.3, 80.1)	4,499	86.2	(83.7, 88.7)	**0.87**	**(0.85, 0.90)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Note: First trimester is defined as conception up until 14 weeks of pregnancy. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 14 – Enrolment with Lead Maternity Carer in first trimester of pregnancy, South Canterbury DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
First trimester registration	78	72.0	(56.0, 87.9)	412	82.0	(74.1, 89.9)	**0.88**	**(0.80, 0.96)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Note: First trimester is defined as conception up until 14 weeks of pregnancy. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 15 – Enrolment with Lead Maternity Carer in first trimester of pregnancy, Southern DHB, 2018 to 2022

Indicator	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	% of live births (95% CI)		Av. no. per year	% of live births (95% CI)			
First trimester registration	540	77.2	(70.7, 83.7)	2,237	83.4	(79.9, 86.8)	**0.93**	**(0.89, 0.96)**

Source: National Maternity Collection, Ministry of Health: Maternity Qlik.
Note: First trimester is defined as conception up until 14 weeks of pregnancy. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2022, only 77.6% of Māori babies in Te Tauraki were enrolled with a primary care provider by the time they were three months old, compared to 96.4% of non-Māori babies (Table 16). Rates for each DHB separately are shown in Table 17, Table 18, Table 19 and Table 20. In each DHB, fewer Māori babies than non-Māori babies are enrolled with primary care by three months of age.

Table 16 – Newborn enrolment with primary health care, Te Tauraki, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Newborns enrolled with a Primary Health Organisation (PHO) by three months old	Sep to Dec 2022	427	77.6	2,055	96.4

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023.
Notes: Numerator source: PHO Enrolments. Denominator source: National Immunisation Register.

Table 17 – Newborn enrolment with primary health care, West Coast DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Newborns enrolled with a Primary Health Organisation (PHO) by three months old	Sep to Dec 2022	16	84.2	51	85.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023.
Notes: Numerator source: PHO Enrolments. Denominator source: National Immunisation Register.

Table 18 – Newborn enrolment with primary health care, Canterbury DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Newborns enrolled with a Primary Health Organisation (PHO) by three months old	Sep to Dec 2022	255	77.5	1,274	96.8

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023.
Notes: Numerator source: PHO Enrolments. Denominator source: National Immunisation Register.

Table 19 – Newborn enrolment with primary health care, South Canterbury DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Newborns enrolled with a Primary Health Organisation (PHO) by three months old	Sep to Dec 2022	17	60.7	114	98.3

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023.
Notes: Numerator source: PHO Enrolments. Denominator source: National Immunisation Register.

Table 20 – Newborn enrolment with primary health care, Southern DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Newborns enrolled with a Primary Health Organisation (PHO) by three months old	Sep to Dec 2022	139	79.9	616	96.3

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023.
Notes: Numerator source: PHO Enrolments. Denominator source: National Immunisation Register.

Breastfeeding is associated with many short- and long-term health benefits (Binns, Lee et al. 2016). Of those babies who were reviewed by their Lead Maternity Carer at two weeks of age, 68.0% of Māori babies in Te Tauraki were exclusively or fully breastfed at two weeks old compared to 71.0% of non-Māori (Table 21). Breastfeeding rates were similar for Māori babies across Canterbury (Table 23), South Canterbury (Table 24) and Southern DHB (Table 25), however were higher (77.0%) in West Coast DHB (Table 22) – although given the small numbers of babies in West Coast DHB it is difficult to assess whether this finding is a statistically significant difference.

Table 21 – Breastfeeding at two weeks of age, Te Tauraki, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Infants are exclusively or fully breastfed at two weeks old	Jan to Dec 2022	1,509	68.0	5,992	71.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. National Maternity Collection, Ministry of Health: Maternity Qlik

Table 22 – Breastfeeding at two weeks of age, West Coast DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Infants are exclusively or fully breastfed at two weeks old	Jan to Dec 2022	61	77.0	152	72.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 23 – Breastfeeding at two weeks of age, Canterbury DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Infants are exclusively or fully breastfed at two weeks old	Jan to Dec 2022	877	68.0	3,656	71.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 24 – Breastfeeding at two weeks of age, South Canterbury DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Infants are exclusively or fully breastfed at two weeks old	Jan to Dec 2022	75	68.0	329	69.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 25 – Breastfeeding at two weeks of age, Southern DHB, 2022

Indicator	Period	Māori		non-Māori	
		Number	%	Number	%
Infants are exclusively or fully breastfed at two weeks old	Jan to Dec 2022	496	68.0	1,855	71.0

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. National Maternity Collection, Ministry of Health: Maternity Qlik.

Table 26 shows the numbers and percentages of tamariki Māori fully immunised with the core publicly funded immunisations, in Te Tauraki in 2022, according to each key milestone in the National Immunisation Schedule. Māori immunisation rates were significantly lower than non-Māori at every milestone age. At 18 months of age, 67.2% of Māori were fully vaccinated (compared to 80.8% of non-Māori), which is especially concerning for diseases such as measles for which both vaccine doses are due before 18 months.

By five years of age (a full year after the last vaccination on the young child immunisation schedule), 85.8% of Māori in Te Tauraki were fully immunised compared to 90.4% for non-Māori (representing relatively similar levels of immunisation at five years of age when comparing Māori to non-Māori). The pattern of immunisation coverage at five years of age was similar across the four DHBs: West Coast DHB (75.3%) (Table 27), Canterbury DHB (85.9%) (Table 28), South Canterbury DHB (83.2%) (Table 29) and Southern DHB (87.3%) (Table 30).

Table 26 – Children fully immunised by each milestone age, Te Tauraki, January to December 2022

Milestone age	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	No. immunised	% immunised	No. immunised	% immunised		
6 months	1,395	65.9	7,539	80.9	**0.81**	**(0.79, 0.84)**
8 months	1,801	84.0	8,709	92.2	**0.91**	**(0.89, 0.93)**
12 months	1,923	89.2	9,151	94.0	**0.95**	**(0.93, 0.96)**
18 months	1,329	67.2	7,808	80.8	**0.83**	**(0.80, 0.86)**
2 years	1,561	82.9	8,446	90.1	**0.92**	**(0.90, 0.94)**
5 years	1,892	85.8	8,839	90.4	**0.95**	**(0.93, 0.97)**

Source: National Immunisation Register, Te Whatu Ora.
Notes: Fully immunised is defined as children who had completed all their age-appropriate immunisations by the time they turned the milestone age. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 27 – Children fully immunised by each milestone age, West Coast DHB, January to December 2022

Milestone age	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	No. immunised	% immunised	No. immunised	% immunised		
6 months	34	48.6	155	61.3	0.79	(0.61, 1.03)
8 months	54	76.1	193	76.9	0.99	(0.85, 1.15)
12 months	63	79.7	203	78.1	1.02	(0.90, 1.16)
18 months	45	66.2	181	64.2	1.03	(0.85, 1.25)
2 years	47	77.0	207	74.2	1.04	(0.89, 1.21)
5 years	70	75.3	241	77.2	0.97	(0.85, 1.11)

Source: National Immunisation Register, Te Whatu Ora.
Notes: Fully immunised is defined as children who had completed all their age-appropriate immunisations by the time they turned the milestone age. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 28 – Children fully immunised by each milestone age, Canterbury DHB, January to December 2022

Milestone age	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	No. immunised	% immunised	No. immunised	% immunised		
6 months	816	64.6	4,707	82.7	**0.78**	**(0.75, 0.81)**
8 months	1,068	83.3	5,390	93.1	**0.89**	**(0.87, 0.92)**
12 months	1,132	88.6	5,631	94.8	**0.94**	**(0.92, 0.95)**
18 months	768	65.3	4,805	81.3	**0.80**	**(0.77, 0.84)**
2 years	894	81.4	5,193	90.7	**0.90**	**(0.87, 0.92)**
5 years	1,064	85.9	5,293	91.1	**0.94**	**(0.92, 0.97)**

Source: National Immunisation Register, Te Whatu Ora.
Notes: Fully immunised is defined as children who had completed all their age-appropriate immunisations by the time they turned the milestone age. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 29 – Children fully immunised by each milestone age, South Canterbury DHB, January to December 2022

Milestone age	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	No. immunised	% immunised	No. immunised	% immunised		
6 months	64	65.3	390	75.9	0.86	(0.74, 1.00)
8 months	79	82.3	497	92.2	**0.89**	**(0.81, 0.98)**
12 months	99	92.5	520	93.9	0.99	(0.93, 1.04)
18 months	63	63.0	422	76.6	**0.82**	**(0.70, 0.96)**
2 years	72	82.8	477	87.7	0.94	(0.85, 1.04)
5 years	109	83.2	513	88.1	0.94	(0.87, 1.03)

Source: National Immunisation Register, Te Whatu Ora.
Notes: Fully immunised is defined as children who had completed all their age-appropriate immunisations by the time they turned the milestone age. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 30 – Children fully immunised by each milestone age, Southern DHB, January to December 2022

Milestone age	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	No. immunised	% immunised	No. immunised	% immunised		
6 months	481	70.2	2,287	80.0	**0.88**	**(0.83, 0.92)**
8 months	600	86.2	2,629	91.6	**0.94**	**(0.91, 0.97)**
12 months	629	90.8	2,797	94.0	**0.97**	**(0.94, 0.99)**
18 months	453	71.5	2,400	82.2	**0.87**	**(0.83, 0.92)**
2 years	548	86.2	2,569	91.1	**0.95**	**(0.92, 0.98)**
5 years	649	87.3	2,792	91.0	**0.96**	**(0.93, 0.99)**

Source: National Immunisation Register, Te Whatu Ora.
Notes: Fully immunised is defined as children who had completed all their age-appropriate immunisations by the time they turned the milestone age. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

2.4. Oral health

Oral health care for children is free in NZ, and all children should be enrolled with their local community oral health service as soon as possible after birth. Usually, midwives and child health nurses support the enrolment of all children with their local oral health service. In 2021 in Te Tauraki, 81.8% of Māori children aged 0-4 years were enrolled with community oral health services, compared to 93.4% of non-Māori children (Table 31). Enrolment was lowest for Māori children (59.8%) in West Coast DHB (Table 32) and highest (86.7%) in Canterbury DHB (Table 33), but was consistently higher for non-Māori children in all DHBs.

Table 31 – Enrolment with community oral health services for children aged 0 to 4 years of age, Te Tauraki, January to December 2021

Indicator	Māori		non-Māori	
	Number	%	Number	%
Children aged 0-4 years enrolled with the community oral health service	8,730	81.8	42,577	93.4

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. Numerator source: DHB reporting. Denominator source: StatsNZ population projections.

Table 32 – Enrolment with community oral health services for children aged 0 to 4 years of age, West Coast DHB, January to December 2021

Indicator	Māori		non-Māori	
	Number	%	Number	%
Children aged 0-4 years enrolled with the community oral health service	239	59.8	1,244	93.2

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. Numerator source: DHB reporting. Denominator source: StatsNZ population projections.

Table 33 – Enrolment with community oral health services for children aged 0 to 4 years of age, Canterbury DHB, January to December 2021

Indicator	Māori		non-Māori	
	Number	%	Number	%
Children aged 0-4 years enrolled with the community oral health service	5,141	86.7	25,501	94.4

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. Numerator source: DHB reporting. Denominator source: StatsNZ population projections.

Table 34 – Enrolment with community oral health services for children aged 0 to 4 years of age, South Canterbury DHB, January to December 2021

Indicator	Māori		non-Māori	
	Number	%	Number	%
Children aged 0-4 years enrolled with the community oral health service	454	72.1	2,197	82.6

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. Numerator source: DHB reporting. Denominator source: StatsNZ population projections.

Table 35 – Enrolment with community oral health services for children aged 0 to 4 years of age, Southern DHB, January to December 2021

Indicator	Māori		non-Māori	
	Number	%	Number	%
Children aged 0-4 years enrolled with the community oral health service	2,896	78.1	13,635	93.5

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2023. Numerator source: DHB reporting. Denominator source: StatsNZ population projections.

However, being enrolled with a community oral health service does not mean care is received. In 2022 in Te Tauraki, 56.3% of eligible Māori five-year-olds, and 66.0% of Māori Year 8 students, were examined by the community oral health service (Table 36). This compares to 57.1% of eligible non-Māori five-year-olds, and 77.9% of non-Māori Year 8 students.

West Coast DHB (Table 37) had the lowest proportion (25.6%) of eligible Māori five-year-olds examined by a community health service (compared to 31.5% for non-Māori). The other DHBs had patterns similar to Te Tauraki overall with 61.7% of five-year-olds and 68.9% of Year 8 Māori students being examined in Canterbury DHB (Table 38), 58.5% of five-year-olds and 75.7% of Year 8 Māori students being examined in South Canterbury DHB (Table 39) and 50.8% of five-year-olds and 61.2% of Year 8 Māori students being examined in Southern DHB (Table 40).

Table 36 – Children attending community oral health services at age 5 or in Year 8, Te Tauraki, 2022

Age group	Māori			non-Māori		
	No. eligible	No. examined	% examined	No. eligible	No. examined	% examined
Age 5	2,140	1,205	56.3	9,080	5,189	57.1
Year 8	2,330	1,538	66.0	10,360	8,075	77.9

Source: For number eligible: StatsNZ population projection for 2022. For number examined: Community Oral Health Service, Ministry of Health.

Table 37 – Children attending community oral health services at age 5 or in Year 8, West Coast DHB, 2022

Age group	Māori			non-Māori		
	No. eligible	No. examined	% examined	No. eligible	No. examined	% examined
Age 5	90	23	25.6	260	82	31.5
Year 8	70	36	51.4	350	164	46.9

Source: For number eligible: StatsNZ population projection for 2022. For number examined: Community Oral Health Service, Ministry of Health.

Table 38 – Children attending community oral health services at age 5 or in Year 8, Canterbury DHB, 2022

Age group	Māori			non-Māori		
	No. eligible	No. examined	% examined	No. eligible	No. examined	% examined
Age 5	1,200	740	61.7	5,410	3,346	61.8
Year 8	1,280	882	68.9	5,900	4,704	79.7

Source: For number eligible: StatsNZ population projection for 2022. For number examined: Community Oral Health Service, Ministry of Health.

Table 39 – Children attending community oral health services at age 5 or in Year 8, South Canterbury DHB, 2022

Age group	Māori			non-Māori		
	No. eligible	No. examined	% examined	No. eligible	No. examined	% examined
Age 5	130	76	58.5	550	422	76.7
Year 8	140	106	75.7	630	541	85.9

Source: For number eligible: StatsNZ population projection for 2022. For number examined: Community Oral Health Service, Ministry of Health.

Table 40 – Children attending community oral health services at age 5 or in Year 8, Southern DHB, 2022

Age group	Māori			non-Māori		
	No. eligible	No. examined	% examined	No. eligible	No. examined	% examined
Age 5	720	366	50.8	2860	1339	46.8
Year 8	840	514	61.2	3480	2666	76.6

Source: For number eligible: StatsNZ population projection for 2022. For number examined: Community Oral Health Service, Ministry of Health.

Of those children who were examined, 45.5% of Māori five-year-olds in Te Tauraki had decayed teeth which was 1.5 times the rate for non-Māori five-year-olds (Table 41). Of those Year 8 students who were seen by the community oral health service, 45.9% had decayed teeth, which was 1.3 times the rate of non-Māori. However, caution is needed when applying these rates to all Māori children, as a large percentage of tamariki Māori in Te Tauraki did not receive community oral health services and are therefore not included in these data.

Over half (52.2%) of the Māori five-year-olds examined in West Coast DHB (Table 42) had decayed teeth which was 2.0 times the rate for non-Māori five-year-olds. A higher proportion of decayed teeth was also seen across the other DHBs with Māori five-year-olds and Year 8 students being 1.5 times more likely to have decayed teeth compared to non-Māori in Canterbury DHB (Table 43), 1.4 times more likely for five-year-olds and 1.2 times more likely for Year 8 students to have decayed teeth compared to non-Māori in South Canterbury DHB (Table 44) and 1.3 times more likely for five-year-olds and 1.2 times more likely for Year 8 students to have decayed teeth compared to non-Māori in Southern DHB (Table 45).

Table 41 – Oral health status of children attending community oral health services at age 5 or in Year 8, Te Tauraki, 2022

Age group	Māori				non-Māori				Māori/non-Māori rate ratio for having caries (95% CI)	
	No. with caries	% with caries (95% CI)		mean no. of DMFT	No. with caries	% with caries (95% CI)		mean no. of DMFT		
Age 5	548	45.5	(41.7, 49.3)	2.1	1,605	30.9	(29.4, 32.4)	1.24	**1.47**	**(1.43, 1.52)**
Year 8	706	45.9	(42.5, 49.3)	1.16	2,758	34.2	(32.9, 35.4)	0.71	**1.34**	**(1.31, 1.38)**

Source: Community Oral Health Service, Ministry of Health.
Notes: Dental caries are tooth decay. DMFT is decayed, missing or filled teeth. Fluoridated and non-fluoridated water is combined. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 42 – Oral health status of children attending community oral health services at age 5 or in Year 8, West Coast DHB, 2022

Age group	Māori				non-Māori				Māori/non-Māori rate ratio for having caries (95% CI)	
	No. with caries	% with caries (95% CI)		mean no. of DMFT	No. with caries	% with caries (95% CI)		mean no. of DMFT		
Age 5	12	52.2	(22.7, 81.7)	2.43	21	25.6	(14.7, 36.6)	1.16	**2.04**	**(1.63, 2.55)**
Year 8	11	30.6	(12.5, 48.6)	0.31	50	30.5	(22.0, 38.9)	0.64	1.00	(0.85, 1.18)

Source: Community Oral Health Service, Ministry of Health.
Notes: Dental caries are tooth decay. DMFT is decayed, missing, or filled teeth. Fluoridated and non-fluoridated water is combined. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 43 – Oral health status of children attending community oral health services at age 5 or in Year 8, Canterbury DHB, 2022

Age group	Māori				non-Māori				Māori/non-Māori rate ratio for having caries (95% CI)	
	No. with caries	% with caries (95% CI)		mean no. of DMFT	No. with caries	% with caries (95% CI)		mean no. of DMFT		
Age 5	354	47.8	(42.9, 52.8)	2.22	1,037	31	(29.1, 32.9)	1.22	**1.54**	**(1.48, 1.61)**
Year 8	443	50.2	(45.5, 54.9)	1.29	1,630	34.7	(33.0, 36.3)	0.74	**1.45**	**(1.40, 1.50)**

Source: Community Oral Health Service, Ministry of Health.
Notes: Dental caries are tooth decay. DMFT is decayed, missing, or filled teeth. Fluoridated and non-fluoridated water is combined. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 44 – Oral health status of children attending community oral health services at age 5 or in Year 8, South Canterbury DHB, 2022

Age group	Māori				non-Māori				Māori/non-Māori rate ratio for having caries (95% CI)	
	No. with caries	% with caries (95% CI)		mean no. of DMFT	No. with caries	% with caries (95% CI)		mean no. of DMFT		
Age 5	33	43.4	(28.6, 58.2)	2.18	133	31.5	(26.2, 36.9)	1.27	**1.38**	**(1.22, 1.55)**
Year 8	44	41.5	(29.2, 53.8)	0.86	196	36.2	(31.2, 41.3)	0.7	**1.15**	**(1.03, 1.27)**

Source: Community Oral Health Service, Ministry of Health.
Notes: Dental caries are tooth decay. DMFT is decayed, missing, or filled teeth. Fluoridated and non-fluoridated water is combined. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 45 – Oral health status of children attending community oral health services at age 5 or in Year 8, Southern DHB, 2022

Age group	Māori				non-Māori				Māori/non-Māori rate ratio for having caries (95% CI)	
	No. with caries	% with caries (95% CI)		mean no. of DMFT	No. with caries	% with caries (95% CI)		mean no. of DMFT		
Age 5	149	40.7	(34.2, 47.2)	1.81	414	30.9	(27.9, 33.9)	1.27	**1.32**	**(1.24, 1.39)**
Year 8	208	40.5	(35.0, 46.0)	1.05	882	33.1	(30.9, 35.3)	0.68	**1.22**	**(1.17, 1.28)**

Source: Community Oral Health Service, Ministry of Health.
Notes: Dental caries are tooth decay. DMFT is decayed, missing, or filled teeth. Fluoridated and non-fluoridated water is combined. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

2.5. Avoidable hospitalisations

Potentially avoidable hospitalisations are those admissions which could have been prevented by primary care, public health, or social policy interventions. Between July 2022 to June 2023 in Te Tauraki there were 1,962 potentially avoidable hospitalisations in Māori children aged one month to 14 years (Table 46). The rate of potentially avoidable hospitalisations was 1.1 times higher for Māori children than non-Māori children in Te Tauraki. In Canterbury DHB (Table 48), there were 6,251 potentially avoidable hospitalisations in Māori children aged one month to 14 years, a rate that was 1.2 times higher for Māori children than non-Māori children. There were no significant rate differences between Māori and non-Māori across the other three DHBs.

Table 46 – Potentially avoidable hospitalisations for children aged 1 month to 14 years, Te Tauraki, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	1,962	6,012	(5,746, 6,278)	7,237	5,314	(5,192, 5,436)	**1.13**	**(1.08, 1.19)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 47 – Potentially avoidable hospitalisations for children aged 1 month to 14 years, West Coast DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	81	6,848	(5,356, 8,339)	277	6,819	(6,016, 7,622)	1.00	(0.79, 1.28)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 48 – Potentially avoidable hospitalisations for children aged 1 month to 14 years, Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	1,136	6,251	(5,888, 6,615)	4,084	5,070	(4,915, 5,226)	**1.23**	**(1.16, 1.31)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 49 – Potentially avoidable hospitalisations for children aged 1 month to 14 years, South Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	89	4,765	(3,775, 5,755)	443	5,471	(4,962, 5,981)	0.87	(0.70, 1.09)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 50 – Potentially avoidable hospitalisations for children aged 1 month to 14 years, Southern DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	656	5,744	(5,305, 6,184)	2,433	5,592	(5,369, 5,814)	1.03	(0.94, 1.12)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māuiuitanga taumaha
Long-term conditions

3. Māuiuitanga taumaha – Long-term conditions

A small group of long-term noncommunicable conditions: diabetes, cardiovascular disease, chronic respiratory disease, and stroke, not only form the leading causes of death and disability for Māori, but often coexist in the same people, and share common modifiable risk factors. These long-term conditions are highly preventable, and Māori experience higher rates of exposure to the leading causes of these conditions, namely tobacco, obesogenic environments, unhealthy diets, and alcohol. These risk factors are strongly patterned by social, commercial, and environmental determinants such as poverty, food availability and marketing, social exclusion, and racism.

Tobacco alone causes 22.6% of Māori deaths (Walsh and Wright 2020). Compared to non-Māori non-Pacific, 28.4% of the gap in life expectancy for Māori men and 32.9% of gap in life expectancy for Māori women is due to smoking attributable deaths (Walsh and Wright 2020). There is great potential in NZ to implement internationally recommended evidence-based interventions (World Health Organization 2023) on shared risk factors, especially tobacco, alcohol and unhealthy diet (including addressing the commercial determinants of obesogenic environments).

Nationally, coronary disease is the leading contributor to the life expectancy gap between Māori and non-Māori non-Pacific people (Walsh 2023). Diabetes is the third leading contributor to the Māori life expectancy gap and chronic obstructive pulmonary disease (COPD) is the fourth. Ischaemic heart disease, COPD, diabetes, and cerebrovascular disease (stroke) are four of the five leading causes of death for Māori nationally, as well as leading causes of potentially avoidable deaths (those deaths considered amenable to high-quality healthcare, preventable through public health interventions, or both) and Māori die at much higher rates from all of these conditions than non-Māori. See Volume One of this IMPB profile for more information about the leading causes for specific geographic regions.

Not only do Māori experience higher rates of morbidity and mortality from these long-term conditions, but Māori suffer earlier onset of illness and disability. For example, nationally Māori develop diabetes up to 10 years younger and progress earlier to more serious disease, yet are less likely to receive appropriate HbA1c monitoring and appropriate diabetes-related renal-screening tests than non-Māori (Health Quality and Safety Commission 2019).

3.1. Tobacco

According to the NZ Census 2018, 26.7% of Māori aged 15 years and over (26.9% of Māori women and 26.4% of Māori men) in Te Tauraki were regular (daily) smokers (Table 51). Compared to non-Māori in Te Tauraki, Māori were 2.1 times as likely to be regular smokers. Māori women were 2.5 times more likely than non-Māori women to smoke regularly, and Māori men were 1.8 times more likely than non-Māori men.

A similar high pattern is seen across DHBs with Māori being 1.7 times as likely to be regular smokers compared to non-Māori in West Coast DHB (Table 52), 2.2 times as likely to be regular smokers compared to non-Māori in Canterbury DHB (Table 53) and 1.9 times as likely to be regular smokers compared to non-Māori in South Canterbury DHB (Table 54) and Southern DHB (Table 55).

Table 51 – Cigarette smoking status, aged 15 years and over, Te Tauraki, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	8,346	26.9	(26.4, 27.5)	37,047	10.8	(10.7, 10.9)	**2.49**	**(2.44, 2.54)**
Ex-smoker	7,857	24.0	(23.5, 24.6)	78,135	17.2	(17.1, 17.4)	**1.39**	**(1.37, 1.42)**
Never smoked	15,441	49.0	(48.2, 49.8)	248,826	72.0	(71.6, 72.3)	**0.68**	**(0.67, 0.69)**
Male								
Regular smoker	8,229	26.4	(25.8, 27.0)	48,171	15.0	(14.8, 15.1)	**1.76**	**(1.73, 1.80)**
Ex-smoker	7,557	22.5	(22.0, 23.0)	88,941	19.0	(18.8, 19.1)	**1.19**	**(1.16, 1.21)**
Never smoked	16,419	51.2	(50.4, 52.0)	217,986	66.1	(65.8, 66.4)	**0.77**	**(0.77, 0.78)**
Total								
Regular smoker	16,578	26.7	(26.3, 27.1)	85,212	12.9	(12.8, 13.0)	**2.07**	**(2.04, 2.10)**
Ex-smoker	15,417	23.3	(22.9, 23.7)	167,073	18.1	(18.0, 18.2)	**1.29**	**(1.27, 1.31)**
Never smoked	31,860	50.1	(49.5, 50.6)	466,818	69.0	(68.8, 69.2)	**0.73**	**(0.72, 0.73)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 52 – Cigarette smoking status, aged 15 years and over, West Coast DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	375	29.7	(26.4, 33.0)	1,779	16.4	(15.5, 17.4)	**1.81**	**(1.64, 1.99)**
Ex-smoker	357	23.7	(21.0, 26.5)	2,973	20.2	(19.2, 21.1)	**1.18**	**(1.07, 1.29)**
Never smoked	579	45.3	(41.4, 49.3)	6,795	63.6	(61.6, 65.5)	**0.71**	**(0.67, 0.76)**
Male								
Regular smoker	366	32.0	(28.4, 35.5)	2,172	21.1	(20.0, 22.1)	**1.52**	**(1.38, 1.67)**
Ex-smoker	297	21.3	(18.5, 24.0)	3,417	19.3	(18.4, 20.2)	1.10	(0.99, 1.22)
Never smoked	552	46.4	(42.3, 50.6)	6,309	59.5	(57.7, 61.4)	**0.78**	**(0.73, 0.83)**
Total								
Regular smoker	744	31.1	(28.7, 33.5)	3,948	18.7	(18.0, 19.4)	**1.66**	**(1.55, 1.78)**
Ex-smoker	654	23.0	(21.1, 25.0)	6,390	19.7	(19.1, 20.4)	**1.17**	**(1.09, 1.25)**
Never smoked	1,131	46.2	(43.3, 49.1)	13,107	61.5	(60.1, 62.8)	**0.75**	**(0.72, 0.79)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 53 – Cigarette smoking status, aged 15 years and over, Canterbury DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	4,422	26.3	(25.5, 27.1)	18,936	9.7	(9.5, 9.9)	**2.71**	**(2.63, 2.79)**
Ex-smoker	4,200	24.0	(23.2, 24.7)	41,787	16.4	(16.2, 16.6)	**1.46**	**(1.42, 1.50)**
Never smoked	8,421	49.8	(48.7, 50.9)	144,177	73.9	(73.4, 74.3)	**0.67**	**(0.66, 0.68)**
Male								
Regular smoker	4,473	25.6	(24.8, 26.4)	25,650	13.8	(13.6, 13.9)	**1.86**	**(1.81, 1.91)**
Ex-smoker	4,164	22.5	(21.8, 23.2)	48,297	18.5	(18.3, 18.7)	**1.22**	**(1.18, 1.25)**
Never smoked	9,189	51.9	(50.8, 53.0)	127,371	67.7	(67.3, 68.1)	**0.77**	**(0.76, 0.78)**
Total								
Regular smoker	8,895	25.9	(25.4, 26.5)	44,586	11.8	(11.6, 11.9)	**2.20**	**(2.16, 2.25)**
Ex-smoker	8,367	23.2	(22.7, 23.7)	90,078	17.5	(17.3, 17.6)	**1.33**	**(1.30, 1.36)**
Never smoked	17,610	50.9	(50.1, 51.7)	271,551	70.8	(70.5, 71.1)	**0.72**	**(0.71, 0.73)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 54 – Cigarette smoking status, aged 15 years and over, South Canterbury DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	507	31.3	(28.4, 34.1)	2,793	14.4	(13.8, 15.1)	**2.17**	**(2.00, 2.35)**
Ex-smoker	435	24.1	(21.7, 26.5)	5,481	18.5	(17.9, 19.2)	**1.30**	**(1.19, 1.41)**
Never smoked	747	43.6	(40.4, 46.9)	14,679	67.2	(65.7, 68.6)	**0.65**	**(0.62, 0.69)**
Male								
Regular smoker	459	29.5	(26.8, 32.3)	3,291	18.1	(17.4, 18.8)	**1.63**	**(1.50, 1.78)**
Ex-smoker	384	22.6	(20.2, 24.9)	6,198	19.1	(18.4, 19.7)	**1.18**	**(1.08, 1.30)**
Never smoked	783	48.2	(44.7, 51.6)	12,768	62.8	(61.5, 64.1)	**0.77**	**(0.73, 0.81)**
Total								
Regular smoker	966	31.0	(29.0, 33.0)	6,081	16.3	(15.8, 16.8)	**1.90**	**(1.79, 2.01)**
Ex-smoker	819	23.4	(21.8, 25.1)	11,682	18.8	(18.3, 19.3)	**1.25**	**(1.17, 1.33)**
Never smoked	1,530	45.9	(43.5, 48.3)	27,447	64.9	(64.0, 65.9)	**0.71**	**(0.68, 0.73)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 55 – Cigarette smoking status, aged 15 years and over, Southern DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	2,931	26.6	(25.6, 27.6)	17,058	16.1	(15.8, 16.3)	**1.66**	**(1.60, 1.71)**
Ex-smoker	2,712	22.6	(21.7, 23.5)	31,029	19.6	(19.4, 19.9)	**1.15**	**(1.11, 1.19)**
Never smoked	5,895	50.9	(49.6, 52.2)	71,538	64.3	(63.7, 64.8)	**0.79**	**(0.78, 0.81)**
Male								
Regular smoker	2,712	22.6	(21.7, 23.5)	31,029	19.6	(19.4, 19.9)	**1.15**	**(1.11, 1.19)**
Ex-smoker	5,895	50.9	(49.6, 52.2)	71,538	64.3	(63.7, 64.8)	**0.79**	**(0.78, 0.81)**
Never smoked	2,931	26.6	(25.6, 27.6)	17,058	16.1	(15.8, 16.3)	**1.66**	**(1.60, 1.71)**
Total								
Regular smoker	5,973	27.0	(26.3, 27.7)	30,597	13.9	(13.7, 14)	**1.94**	**(1.90, 1.99)**
Ex-smoker	5,577	23.4	(22.7, 24.0)	58,923	18.9	(18.7, 19.1)	**1.24**	**(1.21, 1.27)**
Never smoked	11,589	49.7	(48.8, 50.6)	154,713	67.3	(66.9, 67.6)	**0.74**	**(0.73, 0.75)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

For rangatahi, 12.6% of Māori aged 15 to 19 years in Te Tauraki were regular smokers – 11.8% of females and 13.3% of males (Table 56). These rates were 2.5 times higher than for non-Māori females and 2.0 times higher than for non-Māori males, respectively. Regular smoking rates were higher for Māori across all the DHBs including 12.6% of youth (1.9 times higher than non-Māori) in West Coast DHB (Table 57), 12.0% of youth (2.3 times higher than non-Māori) in Canterbury DHB (Table 58), 19.3% of youth (2.5 times higher than non-Māori) in South Canterbury DHB (Table 59) and 12.3% of youth (2.0 times higher than non-Māori) in Southern DHB (Table 60).

Table 56 – Cigarette smoking status, aged 15 to 19 years old, Te Tauraki, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	531	11.8	(10.8, 12.8)	1,209	4.7	(4.5, 5.0)	**2.49**	**(2.26, 2.74)**
Ex-smoker	189	4.2	(3.6, 4.8)	450	1.8	(1.6, 1.9)	**2.38**	**(2.01, 2.81)**
Never smoked	3,789	84.0	(81.4, 86.7)	23,895	93.5	(92.3, 94.7)	**0.90**	**(0.89, 0.91)**
Male								
Regular smoker	618	13.3	(12.3, 14.3)	1,788	6.8	(6.4, 7.1)	**1.97**	**(1.80, 2.14)**
Ex-smoker	186	4.0	(3.4, 4.6)	642	2.4	(2.2, 2.6)	**1.65**	**(1.40, 1.93)**
Never smoked	3,846	82.8	(80.1, 85.4)	23,997	90.8	(89.6, 91.9)	**0.91**	**(0.90, 0.92)**
Total								
Regular smoker	1,152	12.6	(11.9, 13.3)	2,994	5.8	(5.6, 6.0)	**2.18**	**(2.05, 2.33)**
Ex-smoker	369	4.0	(3.6, 4.4)	1,104	2.1	(2.0, 2.2)	**1.90**	**(1.69, 2.13)**
Never smoked	7,641	83.4	(81.6, 85.3)	47,886	92.1	(91.3, 92.9)	**0.91**	**(0.90, 0.91)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are not age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 57 – Cigarette smoking status, aged 15 to 19 years old, West Coast DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	18	11.3	(6.1, 16.6)	33	5.4	(3.5, 7.2)	**2.11**	**(1.22, 3.65)**
Ex-smoker	6	3.8	(0.8, 6.8)	12	2.0	(0.8, 3.1)	1.93	(0.74, 5.07)
Never smoked	132	83.0	(68.9, 97.2)	576	93.7	(86, 100.0)	**0.89**	**(0.82, 0.95)**
Male								
Regular smoker	24	13.8	(8.3, 19.3)	57	8.0	(5.9, 10.1)	**1.72**	**(1.10, 2.69)**
Ex-smoker	3	1.7	(0.0, 3.7)	21	3.0	(1.7, 4.2)	0.58	(0.18, 1.93)
Never smoked	147	84.5	(70.8, 98.1)	633	89.0	(82.1, 96)	0.95	(0.89, 1.02)
Total								
Regular smoker	42	12.6	(8.8, 16.4)	90	6.8	(5.4, 8.2)	**1.86**	**(1.31, 2.63)**
Ex-smoker	12	3.6	(1.6, 5.6)	30	2.3	(1.5, 3.1)	1.59	(0.82, 3.08)
Never smoked	282	84.7	(74.8, 94.6)	1,203	90.7	(85.6, 95.9)	**0.93**	**(0.89, 0.98)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are not age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 58 – Cigarette smoking status, aged 15 to 19 years old, Canterbury DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	270	11.6	(10.3, 13.0)	606	4.4	(4.0, 4.7)	**2.65**	**(2.62, 2.69)**
Ex-smoker	102	4.4	(3.5, 5.3)	249	1.8	(1.6, 2.0)	**2.44**	**(1.95, 3.06)**
Never smoked	1,950	84.1	(80.4, 87.8)	12,948	93.8	(92.2, 95.4)	**0.90**	**(0.88, 0.91)**
Male								
Regular smoker	303	12.4	(11, 13.8)	897	5.9	(5.5, 6.3)	**2.09**	**(1.85, 2.37)**
Ex-smoker	111	4.6	(3.7, 5.4)	363	2.4	(2.2, 2.6)	**1.90**	**(1.54, 2.33)**
Never smoked	2,028	83.1	(79.5, 86.8)	13,857	91.6	(90.1, 93.2)	**0.91**	**(0.89, 0.92)**
Total								
Regular smoker	573	12.0	(11.0, 13.0)	1,503	5.2	(4.9, 5.5)	**2.32**	**(2.11, 2.54)**
Ex-smoker	210	4.4	(3.8, 5.0)	612	2.1	(1.9, 2.3)	**2.08**	**(1.79, 2.43)**
Never smoked	3,978	83.6	(81.0, 86.2)	26,808	92.7	(91.6, 93.8)	**0.90**	**(0.89, 0.91)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are not age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 59 – Cigarette smoking status, aged 15 to 19 years old, South Canterbury DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	42	16.5	(11.5, 21.5)	93	7.3	(5.8, 8.8)	**2.25**	**(1.61, 3.16)**
Ex-smoker	12	4.7	(2.0, 7.4)	15	1.2	(0.6, 1.8)	**3.99**	**(1.89, 8.42)**
Never smoked	204	80	(69.0, 91.0)	1,161	91.3	(86.0, 96.5)	**0.88**	**(0.82, 0.93)**
Male								
Regular smoker	57	22.1	(16.4, 27.8)	123	8.3	(6.8, 9.7)	**2.67**	**(2.01, 3.55)**
Ex-smoker	9	3.5	(1.2, 5.8)	36	2.4	(1.6, 3.2)	1.44	(0.70, 2.95)
Never smoked	192	74.4	(63.9, 84.9)	1,323	89.1	(84.3, 93.9)	**0.84**	**(0.78, 0.90)**
Total								
Regular smoker	99	19.3	(15.5, 23.1)	216	7.8	(6.8, 8.9)	**2.46**	**(1.98, 3.06)**
Ex-smoker	18	3.5	(1.9, 5.1)	60	2.2	(1.6, 2.7)	1.61	(0.96, 2.70)
Never smoked	396	77.2	(69.6, 84.8)	2,484	90.2	(86.6, 93.7)	**0.86**	**(0.82, 0.90)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are not age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 60 – Cigarette smoking status, aged 15 to 19 years old, Southern DHB, 2018

Smoking status	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female								
Regular smoker	201	11.3	(9.8, 12.9)	477	4.8	(4.4, 5.3)	**2.34**	**(2.00, 2.74)**
Ex-smoker	69	3.9	(3.0, 4.8)	174	1.8	(1.5, 2.0)	**2.20**	**(1.67, 2.90)**
Never smoked	1,503	84.6	(80.3, 88.9)	9,210	93.4	(91.5, 95.3)	**0.91**	**(0.89, 0.92)**
Male								
Regular smoker	234	13.2	(11.5, 14.9)	711	7.8	(7.2, 8.4)	**1.69**	**(1.47, 1.94)**
Ex-smoker	63	3.5	(2.7, 4.4)	222	2.4	(2.1, 2.8)	**1.46**	**(1.11, 1.92)**
Never smoked	1,479	83.3	(79.0, 87.5)	8,184	89.7	(87.8, 91.7)	**0.93**	**(0.91, 0.95)**
Total								
Regular smoker	438	12.3	(11.2, 13.5)	1,185	6.2	(5.9, 6.6)	**2.00**	**(1.78, 2.19)**
Ex-smoker	129	3.6	(3.0, 4.3)	402	2.1	(1.9, 2.3)	**1.71**	**(1.41, 2.08)**
Never smoked	2,985	84.0	(81, 87.1)	17,391	91.6	(90.3, 93.0)	**0.92**	**(0.90, 0.93)**

Source: 2018 Census, StatsNZ.
Notes: Regular smokers smoke one or more cigarettes per day. Percentages are not age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Vapes or e-cigarettes heat a liquid, turning it into a vapour that the user breathes in. They may or may not contain nicotine and may be flavoured. Evidence shows that vaping poses only a small fraction of the risks of smoking and switching from smoking to vaping conveys substantial health benefits (McNeill, Brose et al. 2018). However, vaping is not risk-free, and should not be encouraged in non-smokers (particularly young people who are non-smokers). Vaping has been associated with various physical and behavioural health risks, and its full health effects, including on learning and brain development in young people, are not known (Becker and Rice 2022).

Based on data from the New Zealand Health Survey (NZHS), in Te Tauraki between 2017 and 2022, 11.9% of Māori aged 15 years and over were vaping on a daily basis, 2.1 times higher than non-Māori aged 15 years and over (Table 61). In West Coast DHB (Table 62) - 15.6% of Māori vaped regularly, in Canterbury DHB (Table 63) - 11.7% of Māori vaped regularly (2.1 times higher than non-Māori), in South Canterbury DHB (Table 64) -15.4% of Māori vaped regularly (2.8 times higher than non-Māori) and in Southern DHB (Table 65) - 11.1% of Māori vaped regularly (1.9 times higher than non-Māori).

DHB-level data is not available on vaping among young people (separately to adult-level data). However, national survey data of Year 10 students in 2022 showed that while youth vaping and smoking were both declining for young people in NZ overall, vaping was increasing for Māori young people (Action for Smokefree 2025 (ASH) 2022). Compared to 2021, daily vaping increased a statistically significant amount for Māori participants (19.1% in 2021 to 21.7% in 2022), especially for Māori girls (21.3% to 25.2%).

Table 61 – Prevalence of daily vaping/e-cigarettes use, aged 15 years and over, Te Tauraki, 2017 to 2022

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	11.6	(6.5, 18.7)	4.9	(3.9, 6.0)	**2.45**	**(1.41, 4.23)**
Male	12.0	(7.4, 18.2)	6.6	(4.8, 8.8)	**1.93**	**(1.20, 3.11)**
Total	11.9	(8.4, 16.2)	5.7	(4.6, 7.1)	**2.14**	**(1.54, 2.98)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Daily electronic cigarette users (aged 15+ years) use electronic cigarettes or a vaping device at least once a day. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 62 – Prevalence of daily vaping/e-cigarettes use, aged 15 years and over, West Coast, 2017 to 2022

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	17.7*	(1.4, 56.0)	7.7*	(1.8, 20.2)	**4.26**	**(1.59, 11.41)**
Total	15.6*	(4.4, 35.3)	5.7*	(2.0, 12.3)	2.28	(0.48, 10.75)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Daily electronic cigarette users (aged 15+ years) use electronic cigarettes or a vaping device at least once a day. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 63 – Prevalence of daily vaping/e-cigarettes use, aged 15 years and over, Canterbury DHB, 2017 to 2022

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	9.6*	(3.5, 19.9)	4.1	(2.8, 5.7)	2.19*	(0.89, 5.38)
Male	13.3*	(6.1, 24.1)	6.9	(4.3, 10.3)	**2.16***	**(1.04, 4.48)**
Total	11.7	(6.4, 19.1)	5.5	(3.9, 7.7)	**2.14**	**(1.21, 3.79)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Daily electronic cigarette users (aged 15+ years) use electronic cigarettes or a vaping device at least once a day. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 64 – Prevalence of daily vaping/e-cigarettes use, aged 15 years and over, South Canterbury DHB, 2017 to 2022

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Male	20.2*	(2.2, 58.2)	7.3*	(2.6, 15.4)	**3.87***	**(1.46, 10.24)**
Total	15.4*	(2.0, 44.7)	6.5	(3.7, 10.3)	**2.83***	**(1.35, 5.93)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Daily electronic cigarette users (aged 15+ years) use electronic cigarettes or a vaping device at least once a day. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 65 – Prevalence of daily vaping/e-cigarettes use, aged 15 years and over, Southern DHB, 2017 to 2022

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	13.6*	(5.5, 26.5)	6.3	(4.2, 8.9)	**2.51***	**(1.08, 5.83)**
Male	7.6*	(2.3, 17.7)	6.0	(3.4, 9.7)	1.20*	(0.52, 2.74)
Total	11.1	(5.4, 19.5)	6.1	(4.1, 8.7)	**1.90**	**(1.12, 3.22)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Daily electronic cigarette users (aged 15+ years) use electronic cigarettes or a vaping device at least once a day. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

3.2. Overweight and obesity

A healthy body size is recognised as important for good health and wellbeing. Evidence shows that obese children and adults are at greater risk of short- and long-term health consequences (Ministry of Health 2023). Body mass index (BMI) provides a useful population-level indicator of excess body weight, and is used internationally to classify underweight, overweight and obesity. It should be noted that BMI does not distinguish between weight associated with muscle and weight associated with fat. However, it is considered to be a good estimate of increased risk of health conditions associated with obesity (World Health Organization 2006).

Based on findings from the NZHS, between 2017 and 2021, 72.1% of Māori (aged ≥15 years) in Te Tauraki were overweight or obese, 1.2 times higher than non-Māori (Table 66). Similar findings are seen for Canterbury DHB where 71.5% of Māori (aged ≥15 years) were overweight or obese, 1.2 times higher than non-Māori (Table 68). Māori had higher rates of overweight and obesity than non-Māori in the other DHBs as well, although most of these differences were not statistically significant (likely due to small numbers of NZHS respondents from these DHBs).

Table 66 – Prevalence of overweight or obese, aged 15 years and over, Te Tauraki, 2017 to 2021

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	72.5	(64.8, 79.3)	56.8	(53.1, 60.4)	**1.25**	**(1.15, 1.36)**
Male	72.2	(64.7, 78.8)	63.4	(60.2, 66.4)	**1.11**	**(1.02, 1.21)**
Total	72.1	(67.3, 76.5)	60.1	(57.5, 62.7)	**1.17**	**(1.10, 1.26)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 67 – Prevalence of overweight or obese, aged 15 years and over, West Coast DHB, 2017 to 2021

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	61.0	(41.2, 78.3)	74.2	(56.4, 87.6)	1.05	(0.76, 1.45)
Total	70.5	(51.0, 85.8)	65.4	(53.3, 76.1)	1.08	(0.90, 1.30)

Source: New Zealand Health Survey, Ministry of Health.
Notes: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 68 – Prevalence of overweight or obese, aged 15 years and over, Canterbury DHB, 2017 to 2021

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	70.6	(57.4, 81.7)	54.3	(49.2, 59.3)	**1.30**	**(1.13, 1.50)**
Male	72.7	(59.0, 83.8)	59.3	(55.2, 63.2)	**1.18**	**(1.04, 1.33)**
Total	71.5	(63.8, 78.3)	56.7	(53.3, 60.1)	**1.23**	**(1.12, 1.35)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 69 – Prevalence of overweight or obese, aged 15 years and over, South Canterbury DHB, 2017 to 2021

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	85.4	(44.5, 99.4)	70.4	(62.2, 77.7)	1.18	(0.94, 1.49)
Male	83.6	(40.1, 99.4)	72.4	(65.8, 78.4)	1.11	(0.88, 1.40)
Total	82.3	(51.3, 97.4)	71.2	(65.5, 76.5)	1.14	(0.99, 1.32)

Source: New Zealand Health Survey, Ministry of Health.
Notes: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 70 – Prevalence of overweight or obese, aged 15 years and over, Southern DHB, 2017 to 2021

Sex	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	74.6	(62.3, 84.6)	59.7	(54.4, 64.8)	**1.21**	**(1.06, 1.38)**
Male	70.2	(59.1, 79.8)	67.4	(61.6, 72.8)	1.02	(0.88, 1.19)
Total	72.1	(64.1, 79.1)	63.6	(59.3, 67.7)	1.10	(0.98, 1.24)

Source: New Zealand Health Survey, Ministry of Health.
Notes: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Based on findings from the NZHS, between 2017 and 2021, 41.6% of Māori (aged ≥15 years) in Te Tauraki were obese, 1.6 times higher than non-Māori (Table 71). Similar findings are seen for Canterbury DHB where 37.7% of Māori (aged ≥15 years) were obese, 1.7 times higher than non-Māori (Table 73), South Canterbury where 55.7% of Māori (aged ≥15 years) were obese, 1.6 times higher than non-Māori (Table 74) and Southern DHB where 45.1% of Māori (aged ≥15 years) were obese, 1.5 times higher than non-Māori (Table 75). There was no statistically significant difference between Māori and non-Māori obesity rates among NZHS participants from West Coast DHB, again likely due to small numbers (Table 72).

Table 71 – Prevalence of overweight (but not obese) and obese, aged 15 years and over, Te Tauraki, 2017 to 2021

Body Size	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Overweight (but not obese)						
Female	25.8	(19.9, 32.4)	31.5	(29.2, 33.8)	0.84	(0.67, 1.05)
Male	34.3	(26.1, 43.3)	37.6	(35.1, 40.2)	0.92	(0.75, 1.12)
Total	30.5	(25.0, 36.4)	34.6	(32.8, 36.4)	0.88	(0.75, 1.04)
Obese						
Female	46.7	(39.7, 53.7)	25.3	(22.9, 27.9)	**1.76**	**(1.53, 2.03)**
Male	37.9	(31.4, 44.6)	25.7	(23.2, 28.3)	**1.43**	**(1.20, 1.69)**
Total	41.6	(37.0, 46.4)	25.5	(23.5, 27.6)	**1.58**	**(1.41, 1.77)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Overweight (but not obese): BMI of 25.0-29.9 (or equivalent for <18 years); Obese: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 72 – Prevalence of overweight (but not obese) and obese, aged 15 years and over, West Coast DHB, 2017 to 2021

Body Size	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Overweight (but not obese)						
Female	14.1*	(6.5, 25.4)	27.9	(17.6, 40.3)	0.72	(0.28, 1.89)
Total	25.6	(12.5, 43.0)	37.3	(27.5, 48.0)	0.83	(0.52, 1.34)
Obese						
Female	46.9	(26.9, 67.6)	31.3	(21.6, 42.4)	1.26	(0.83, 1.93)
Total	45.0	(28.7, 62.1)	28.0	(22.5, 34.0)	1.34	(0.96, 1.86)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Overweight (but not obese): BMI of 25.0-29.9 (or equivalent for <18 years); Obese: BMI greater than 25.0 (or equivalent for <18 years). An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 73 – Prevalence of overweight (but not obese) and obese, aged 15 years and over, Canterbury DHB, 2017 to 2021

Body Size	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Overweight (but not obese)						
Female	28.4	(18.7, 39.8)	31.5	(27.9, 35.3)	0.91	(0.63, 1.33)
Male	37.9	(25.3, 51.7)	37.0	(33.2, 40.9)	1.00	(0.78, 1.29)
Total	33.7	(25.0, 43.3)	34.3	(31.6, 37.0)	0.97	(0.78, 1.21)
Obese						
Female	42.3	(30.0, 55.3)	22.7	(19.9, 25.8)	**1.85**	**(1.43, 2.41)**
Male	34.8	(27.1, 43.1)	22.3	(19.0, 25.9)	**1.52**	**(1.15, 2.01)**
Total	37.7	(31.2, 44.6)	22.5	(19.9, 25.2)	**1.66**	**(1.36, 2.03)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Overweight (but not obese): BMI of 25.0-29.9 (or equivalent for <18 years); Obese: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 74 – Prevalence of overweight (but not obese) and obese, aged 15 years and over, South Canterbury DHB, 2017 to 2021

Body Size	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Overweight (but not obese)						
Female	11.3*	(2.2, 30.4)	31.3	(23.1, 40.6)	0.39*	(0.18, 0.85)
Male	37.7*	(14.7, 65.8)	35.8	(27.6, 44.6)	0.98*	(0.44, 2.19)
Total	26.6*	(6.3, 58.7)	33.7	(27.4, 40.4)	0.69*	(0.33, 1.46)
Obese						
Female	74.0	(31.0, 97.2)	39.0	(32.3, 46.1)	**1.92**	**(1.42, 2.60)**
Male	45.8	(23.1, 70.0)	36.6	(31.0, 42.6)	**1.29**	**(0.80, 2.09)**
Total	55.7	(37.5, 73.0)	37.5	(33.0, 42.2)	**1.63**	**(1.28, 2.08)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Overweight (but not obese): BMI of 25.0-29.9 (or equivalent for <18 years); Obese: BMI greater than 25.0 (or equivalent for <18 years). An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 75 – Prevalence of overweight (but not obese) and obese, aged 15 years and over, Southern DHB, 2017 to 2021

Body Size	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Overweight (but not obese)						
Female	24.9	(15.8, 36.0)	31.6	(28.0, 35.3)	0.84	(0.61, 1.17)
Male	29.8	(17.8, 44.2)	38.1	(34.1, 42.2)	0.79	(0.50, 1.25)
Total	27.0	(19.2, 36.1)	35.1	(32.3, 37.9)	0.81	(0.61, 1.08)
Obese						
Female	49.7	(40.6, 58.9)	28.1	(23.5, 33.1)	**1.62**	**(1.38, 1.91)**
Male	40.4	(27.1, 54.9)	29.3	(25.3, 33.5)	1.31	(0.96, 1.79)
Total	45.1	(36.3, 54.0)	28.5	(24.8, 32.4)	**1.46**	**(1.22, 1.75)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Overweight (but not obese): BMI of 25.0-29.9 (or equivalent for <18 years); Obese: BMI greater than 25.0 (or equivalent for <18 years). Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

3.3. Cardiovascular disease

Between 2020 and 2023, Māori in Te Tauraki were 1.5 times more likely than non-Māori to be hospitalised for circulatory system diseases (Table 76). This includes hospitalisations from conditions such as rheumatic fever, high blood pressure, ischemic heart disease, strokes, and other forms of heart disease. An average of 2,104 Māori per year in Te Tauraki were hospitalised from circulatory diseases. The rate of hospitalisation for circulatory system disease was higher for Māori compared to non-Māori across all the DHBs, including 1.3 times higher for West Coast DHB (Table 77), 1.6 times higher for Canterbury DHB (Table 78), 1.5 times higher for South Canterbury DHB (Table 79) and 1.3 times higher for Southern DHB (Table 80).

Table 76 – Hospitalisations for circulatory system disease, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	951	2,462	(2,305, 2,618)	13,874	1,549	(1,524, 1,575)	**1.59**	**(1.49, 1.69)**
Male	1,150	2,807	(2,645, 2,969)	16,833	2,104	(2,073, 2,136)	**1.33**	**(1.26, 1.41)**
Total	2,104	2,637	(2,524, 2,749)	30,755	1,817	(1,797, 1,837)	**1.45**	**(1.39, 1.52)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I00-I99. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 77 – Hospitalisations for circulatory system disease, aged 25 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	63	3,166	(2,382, 3,950)	591	2,068	(1,902, 2,235)	**1.53**	**(1.19, 1.97)**
Male	57	3,309	(2,450, 4,168)	882	2,787	(2,603, 2,971)	1.19	(0.91, 1.54)
Total	120	3,239	(2,659, 3,820)	1,473	2,442	(2,317, 2,567)	**1.33**	**(1.11, 1.59)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I00-I99. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 78 – Hospitalisations for circulatory system disease, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	497	2,496	(2,277, 2,715)	7,403	1,448	(1,415, 1,481)	**1.72**	**(1.58, 1.89)**
Male	637	2,897	(2,672, 3,122)	8,990	2,058	(2,015, 2,100)	**1.41**	**(1.30, 1.52)**
Total	1,136	2,705	(2,548, 2,862)	16,419	1,739	(1,713, 1,766)	**1.56**	**(1.47, 1.65)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I00-I99. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 79 – Hospitalisations for circulatory system disease, aged 25 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	57	2,835	(2,099, 3,571)	1,229	1,862	(1,758, 1,966)	**1.52**	**(1.17, 1.98)**
Male	75	3,322	(2,570, 4,074)	1,382	2,285	(2,164, 2,405)	**1.45**	**(1.16, 1.82)**
Total	132	3,029	(2,512, 3,546)	2,618	2,066	(1,987, 2,145)	**1.47**	**(1.24, 1.74)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I00-I99. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 80 – Hospitalisations for circulatory system disease, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	334	2,301	(2,054, 2,547)	4,651	1,618	(1,571, 1,664)	**1.42**	**(1.27, 1.59)**
Male	381	2,558	(2,301, 2,815)	5,579	2,076	(2,022, 2,131)	**1.23**	**(1.11, 1.36)**
Total	717	2,432	(2,254, 2,610)	10,245	1,839	(1,803, 1,874)	**1.32**	**(1.23, 1.42)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I00-I99. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Looking more specifically at ischemic heart disease, Māori aged 25 years and over in Te Tauraki were significantly more likely than non-Māori to be admitted for ischaemic heart disease (1.3 times), acute coronary syndrome (1.2 times), and angiography (1.3 times) (Table 81). However, these data show that Māori are not significantly more likely than non-Māori to get angioplasty or coronary artery bypass grafts (CABGs). Māori aged 25 years and over in Canterbury DHB (Table 83) were 1.2 times more likely than non-Māori to be admitted for ischemic heart disease and 1.3 times more likely than non-Māori to be admitted for angiography than non-Māori. Māori aged 25 years and over in Southern DHB (Table 85) were 1.4 times more likely than non-Māori to be admitted for ischemic heart disease and acute coronary syndrome. Data for the two smaller DHBs were based on very small numbers and did not reach statistical significance. Where there were less than 5 admissions for a particular cause between 2020-2023, these data were supressed. So those DHBs without angioplasty and CABGs appearing mean that less than 5 Māori were admitted for one of these reasons between 2020-2023.

Overall, these data suggest that Māori may receive lower rates of intervention/treatment for their ischemic heart disease, than non-Māori. The data in this report do not tell us whether Māori are receiving appropriate levels of treatment. New Zealand-wide research has found that Māori do receive lower rates of angioplasty or CABGs than would be expected taking into account the number of heart attacks (Sandiford, Bramley et al. 2015). This lower intervention rate, together with the higher Māori death rate from cardiovascular disease, has raised questions about health care access barriers and ethnic biases in clinical decision making (Curtis, Harwood et al. 2010). An Auckland review of intervention rates in people with a heart attack who received angiography, suggests most of the ethnic difference in angioplasty and CABGs may be explained by differences in disease type and comorbidities (Sandiford, El-Jack et al. 2015) - Māori patients present with a pattern of ischaemic heart disease that is less amenable to angioplasty, and higher comorbidities make CABGs less suitable. However, it is not clear whether this pattern is true for Māori in the rest of the country, and it is important to continue to investigate whether Māori with ischemic heart disease are receiving the interventions they need. Geographical factors, especially for Māori in rural/remote areas, also likely contribute to sub-optimal care, including delays to receive revascularisation.

Table 81 – Hospitalisations for ischaemic heart disease indicators, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease [1]								
Female	89	215.2	(170.4, 260.0)	1,202	121.4	(114.5, 128.3)	**1.77**	**(1.43, 2.20)**
Male	126	309.8	(255.6, 364.0)	2,217	302.7	(290.1, 315.3)	1.02	(0.86, 1.22)
Total	215	264.3	(229.0, 299.6)	3,425	210.4	(203.4, 217.4)	**1.26**	**(1.10, 1.44)**
Angiography procedures [2]								
Female	78	207.8	(161.8, 253.8)	912	116.7	(109.1, 124.3)	**1.78**	**(1.41, 2.24)**
Male	123	313.1	(257.8, 368.4)	1,962	299.1	(285.9, 312.3)	1.05	(0.87, 1.26)
Total	202	262.2	(226.1, 298.3)	2,878	206.4	(198.9, 213.9)	**1.27**	**(1.10, 1.46)**
Angioplasty procedures [3]								
Female	23	59.7	(35.3, 84.1)	314	37	(32.9, 41.1)	**1.61**	**(1.06, 2.46)**
Male	53	137.4	(100.5, 174.3)	896	143.2	(133.8, 152.6)	0.96	(0.73, 1.26)
Total	77	100.1	(77.8, 122.4)	1,211	89.3	(84.3, 94.3)	1.12	(0.89, 1.41)
Coronary Artery Bypass Grafts [4]								
Female	4	8.5	(0.0, 17.2)	80	11.1	(8.7, 13.5)	0.76	(0.27, 2.16)
Male	26	62.1	(38.2, 86.0)	427	61.1	(55.3, 66.9)	1.02	(0.68, 1.51)
Total	30	35.3	(22.6, 48.0)	508	35.6	(32.5, 38.7)	0.99	(0.68, 1.43)
Acute coronary syndrome [5]								
Female	55	130.0	(95.6, 164.4)	814	79.8	(74.3, 85.3)	**1.63**	**(1.24, 2.14)**
Male	83	207.2	(162.7, 251.7)	1,473	204.5	(194.1, 214.9)	1.01	(0.81, 1.26)
Total	139	170.4	(142.1, 198.7)	2,290	141.0	(135.2, 146.8)	**1.21**	**(1.02, 1.43)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] I20 – I25; [2] 38215-00, 38218-00, 38218-01, 38218-02, 59900-00, 59900-01, 59900-02, 38200-00, 38203-00, 38206-00; [3] 35304-00, 35305-00, 35310-00, 35310-01, 35310-02, 38300-00, 38303-00, 38306-00, 38306-01, 38306-02, 38309-00, 38312-00, 38312-01, 38315-00, 38318-00, 38318-01, 90218-00, 90218-01, 90218-02, 90218-03; [4] 38497-00 – 38497-07, 38500-00 – 38500-04, 38503-00 – 38503-04, 90201-00 – 90201-03; [5] I20.0, I21 – I24. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 82 – Hospitalisations for ischaemic heart disease indicators, aged 25 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease [1]								
Female	7	308.2	(74.2, 542.2)	68	202.7	(154.4, 251.0)	1.52	(0.69, 3.36)
Male	6	334.5	(66.9, 602.1)	132	471.5	(391.2, 551.8)	0.71	(0.31, 1.60)
Total	13	323.2	(145.2, 501.2)	200	340.7	(293.5, 387.9)	0.95	(0.54, 1.67)
Angiography procedures [2]								
Female	6	316.1	(63.2, 569.0)	43	162.6	(113.8, 211.4)	1.94	(0.83, 4.56)
Male	4	225.8	(4.6, 447.0)	95	374.8	(299.4, 450.2)	0.60	(0.22, 1.64)
Total	10	273.7	(104.0, 443.4)	138	271.7	(226.3, 317.1)	1.01	(0.53, 1.91)
Acute coronary syndrome [3]								
Female	5	234.2	(28.9, 439.5)	41	125.4	(87.2, 163.6)	1.87	(0.74, 4.72)
Male	4	246.4	(4.9, 487.9)	92	345.8	(275.3, 416.3)	0.71	(0.26, 1.94)
Total	9	241.5	(83.7, 399.3)	134	238.5	(198.1, 278.9)	1.01	(0.52, 1.99)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] I20 – I25; [2] 38215-00, 38218-00, 38218-01, 38218-02, 59900-00, 59900-01, 59900-02, 38200-00, 38203-00, 38206-00; [3] I20.0, I21 – I24. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 83 – Hospitalisations for ischaemic heart disease indicators, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease [1]								
Female	40	191.3	(132.3, 250.3)	661	115.4	(106.6, 124.2)	**1.66**	**(1.21, 2.28)**
Male	72	326.2	(250.9, 401.5)	1,268	313.2	(296.0, 330.4)	1.04	(0.82, 1.32)
Total	113	262.9	(214.4, 311.4)	1,932	211.4	(202.0, 220.8)	**1.24**	**(1.03, 1.50)**
Angiography procedures [2]								
Female	38	195.8	(133.3, 258.3)	468	108.1	(98.3, 117.9)	**1.81**	**(1.30, 2.52)**
Male	73	338.4	(260.9, 415.9)	1,080	302.7	(284.6, 320.8)	1.12	(0.88, 1.42)
Total	112	271.4	(221.1, 321.7)	1,549	202.9	(192.8, 213.0)	**1.34**	**(1.10, 1.62)**
Angioplasty procedures [3]								
Female	11	56.2	(23.0, 89.4)	169	36.6	(31.1, 42.1)	1.53	(0.83, 2.82)
Male	32	147.4	(96.3, 198.5)	509	149.5	(136.5, 162.5)	0.99	(0.69, 1.41)
Total	44	104.9	(73.8, 136.0)	678	91.6	(84.7, 98.5)	1.15	(0.84, 1.55)
Coronary Artery Bypass Grafts [4]								
Total	15	34.1	(16.8, 51.4)	273	35.9	(31.6, 40.2)	0.95	(0.56, 1.60)
Acute coronary syndrome [5]								
Female	24	107.6	(64.3, 150.9)	463	76.8	(69.8, 83.8)	1.40	(0.93, 2.12)
Male	47	213.8	(152.7, 274.9)	849	211.6	(197.4, 225.8)	1.01	(0.75, 1.35)
Total	71	164.0	(125.9, 202.1)	1,314	142.3	(134.6, 150.0)	1.15	(0.91, 1.46)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] I20 – I25; [2] 38215-00, 38218-00, 38218-01, 38218-02, 59900-00, 59900-01, 59900-02, 38200-00, 38203-00, 38206-00; [3] 35304-00, 35305-00, 35310-00, 35310-01, 35310-02, 38300-00, 38303-00, 38306-00, 38306-01, 38306-02, 38309-00, 38312-00, 38312-01, 38315-00, 38318-00, 38318-01, 90218-00, 90218-01, 90218-02, 90218-03; [4] 38497-00 – 38497-07, 38500-00 – 38500-04, 38503-00 – 38503-04, 90201-00 – 90201-03; [5] I20.0, I21 – I24. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 84 – Hospitalisations for ischaemic heart disease indicators, aged 25 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease [1]								
Female	3	144.3	(0.0, 299.2)	92	125.1	(99.6, 150.6)	1.15	(0.39, 3.44)
Male	6	241.6	(42.7, 440.5)	174	310.4	(264.3, 356.5)	0.78	(0.34, 1.79)
Total	9	194.5	(67.4, 321.6)	267	216.8	(190.8, 242.8)	0.90	(0.46, 1.74)
Angiography procedures [2]								
Female	3	141.1	(0.0, 300.8)	57	102.3	(75.7, 128.9)	1.38	(0.43, 4.40)
Male	5	228.1	(34.6, 421.6)	119	246.4	(202.1, 290.7)	0.93	(0.39, 2.20)
Total	8	186.2	(59.8, 312.6)	176	174.1	(148.4, 199.8)	1.07	(0.53, 2.14)
Acute coronary syndrome [3]								
Female	2	96	(0.0, 229.0)	61	83.4	(62.4, 104.4)	1.15	(0.28, 4.70)
Male	4	168.1	(3.4, 332.8)	115	209.9	(171.5, 248.3)	0.80	(0.30, 2.17)
Total	6	134.4	(26.8, 242.0)	175	145.7	(124.1, 167.3)	0.92	(0.41, 2.08)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] I20 – I25; [2] 38215-00, 38218-00, 38218-01, 38218-02, 59900-00, 59900-01, 59900-02, 38200-00, 38203-00, 38206-00; [3] I20.0, I21 – I24. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 85 – Hospitalisations for ischaemic heart disease indicators, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease [1]								
Female	38	248.7	(170.0, 327.4)	381	122.2	(109.9, 134.5)	**2.04**	**(1.46, 2.84)**
Male	42	290.2	(202.4, 378.0)	642	267.2	(246.5, 287.9)	1.09	(0.80, 1.48)
Total	81	270.6	(211.5, 329.7)	1,026	194.2	(182.3, 206.1)	**1.39**	**(1.11, 1.75)**
Angiography procedures [2]								
Female	32	220.4	(143.6, 297.2)	344	129.5	(115.8, 143.2)	**1.70**	**(1.18, 2.45)**
Male	40	296	(204.7, 387.3)	669	296.6	(274.1, 319.1)	1.00	(0.73, 1.37)
Total	72	258.9	(199.2, 318.6)	1,015	212.4	(199.3, 225.5)	1.22	(0.96, 1.55)
Angioplasty procedures [3]								
Female	11	73.5	(29.4, 117.6)	108	37.0	(30.0, 44.0)	**1.99**	**(1.06, 3.73)**
Male	18	136.8	(74.2, 199.4)	289	131.3	(116.2, 146.4)	1.04	(0.65, 1.67)
Total	29	106.2	(67.8, 144.6)	398	83.8	(75.6, 92.0)	1.27	(0.87, 1.84)
Coronary Artery Bypass Grafts [4]								
Total	11	36.8	(15.4, 58.2)	169	32.8	(27.9, 37.7)	1.12	(0.62, 2.05)
Acute coronary syndrome [5]								
Female	24	155.7	(93.8, 217.6)	249	79.5	(69.6, 89.4)	**1.96**	**(1.29, 2.97)**
Male	28	198.6	(125.5, 271.7)	416	177.7	(160.6, 194.8)	1.12	(0.76, 1.63)
Total	53	178.2	(130.2, 226.2)	667	128.3	(118.6, 138.0)	**1.39**	**(1.05, 1.84)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] I20 – I25; [2] 38215-00, 38218-00, 38218-01, 38218-02, 59900-00, 59900-01, 59900-02, 38200-00, 38203-00, 38206-00; [3] 35304-00, 35305-00, 35310-00, 35310-01, 35310-02, 38300-00, 38303-00, 38306-00, 38306-01, 38306-02, 38309-00, 38312-00, 38312-01, 38315-00, 38318-00, 38318-01, 90218-00, 90218-01, 90218-02, 90218-03; [4] 38497-00 – 38497-07, 38500-00 – 38500-04, 38503-00 – 38503-04, 90201-00 – 90201-03; [5] I20.0, I21 – I24. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori in Te Tauraki were 2.4 times more likely than non-Māori to be hospitalised for heart failure (Table 86). Rates of hospitalisation from heart failure were higher for Māori across all DHBs including 2.3 times higher in West Coast DHB (Table 87), 2.8 times higher in Canterbury DHB (Table 88), 2.9 times higher in South Canterbury DHB (Table 89) and 1.9 times higher in Southern DHB (Table 90).

Table 86 – Hospitalisations for heart failure, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	62	141.7	(106.4, 177.0)	883	58.2	(54.4, 62.0)	**2.43**	**(1.88, 3.15)**
Male	95	212	(169.4, 254.6)	983	88.1	(82.6, 93.6)	**2.41**	**(1.95, 2.97)**
Total	157	176.6	(149.0, 204.2)	1,872	72.6	(69.3, 75.9)	**2.43**	**(2.07, 2.86)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: I50. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 87 – Hospitalisations for heart failure, aged 25 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	6	243	(53.7, 432.3)	29	48.7	(31.0, 66.4)	**4.99**	**(2.12, 11.76)**
Male	3	143.4	(0.0, 305.6)	57	120.5	(89.1, 151.9)	1.19	(0.37, 3.79)
Total	9	197.7	(70.8, 324.6)	86	85.3	(67.2, 103.4)	**2.32**	**(1.18, 4.55)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: I50. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 88 – Hospitalisations for heart failure, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	33	158.7	(104.8, 212.6)	475	56.4	(51.3, 61.5)	**2.82**	**(1.98, 4.00)**
Male	53	224.1	(164.0, 284.2)	515	83.6	(76.4, 90.8)	**2.68**	**(2.02, 3.55)**
Total	87	192	(151.6, 232.4)	992	69.3	(65.0, 73.6)	**2.77**	**(2.23, 3.45)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: I50. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 89 – Hospitalisations for heart failure, aged 25 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	113.4	(0.0, 235.1)	80	63.2	(49.4, 77.0)	1.79	(0.60, 5.36)
Male	9	367.4	(127.4, 607.4)	87	98.9	(78.2, 119.6)	**3.71**	**(1.87, 7.36)**
Total	12	232.2	(102.6, 361.8)	169	81.2	(69.0, 93.4)	**2.86**	**(1.61, 5.09)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: I50. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 90 – Hospitalisations for heart failure, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	19	108.2	(59.5, 156.9)	299	61.2	(54.3, 68.1)	**1.77**	**(1.11, 2.81)**
Male	30	181.6	(116.2, 247.0)	324	88.7	(79.0, 98.4)	**2.05**	**(1.41, 2.98)**
Total	49	144.4	(103.8, 185.0)	625	74.6	(68.7, 80.5)	**1.93**	**(1.45, 2.59)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: I50. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori in Te Tauraki were 1.4 times more likely than non-Māori to be hospitalised for stroke (Table 91). Between 2020 and 2023, an average of 125 Māori each year in Te Tauraki were hospitalised for stroke. Higher rates of hospitalisation for stroke for Māori compared to non-Māori were seen in West Coast DHB - 2.5 times (Table 92) and Canterbury DHB - 1.4 times (Table 93).

Table 91 – Hospitalisations for stroke, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	54	130.5	(95.7, 165.3)	970	85.9	(80.5, 91.3)	**1.52**	**(1.16, 2.00)**
Male	71	175.9	(134.9, 216.9)	1,101	127.1	(119.6, 134.6)	**1.38**	**(1.09, 1.76)**
Total	125	153.2	(126.3, 180.1)	2,074	106.2	(101.6, 110.8)	**1.44**	**(1.20, 1.73)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I60 – I69. These data in ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 92 – Hospitalisations for stroke, aged 25 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	204.9	(0.0, 436.8)	38	121.7	(83.0, 160.4)	1.68	(0.52, 5.45)
Male	7	501.7	(130.1, 873.3)	51	151.8	(110.0, 193.6)	**3.30**	**(1.50, 7.26)**
Total	10	347.8	(132.2, 563.4)	89	137.6	(109.0, 166.2)	**2.53**	**(1.32, 4.85)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I60 – I69. These data in ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 93 – Hospitalisations for stroke, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	29	135.5	(85.9, 185.1)	517	78.9	(72.1, 85.7)	**1.72**	**(1.18, 2.50)**
Male	33	150.8	(99.6, 202.0)	581	122.2	(112.3, 132.1)	1.23	(0.87, 1.75)
Total	62	143.9	(108.1, 179.7)	1,101	100	(94.1, 105.9)	**1.44**	**(1.11, 1.86)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I60 – I69. These data in ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 94 – Hospitalisations for stroke, aged 25 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	2	72.4	(0.0, 182.3)	95	122.7	(98.1, 147.3)	0.59	(0.13, 2.73)
Male	7	282.2	(68.0, 496.4)	95	161	(128.6, 193.4)	1.75	(0.80, 3.84)
Total	8	168.5	(54.1, 282.9)	191	141.9	(121.8, 162.0)	1.19	(0.59, 2.37)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I60 – I69. These data in ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 95 – Hospitalisations for stroke, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	21	126.9	(72.2, 181.6)	320	87.4	(77.8, 97.0)	1.45	(0.93, 2.27)
Male	24	162.9	(97.3, 228.5)	374	126.2	(113.4, 139.0)	1.29	(0.85, 1.95)
Total	44	145.1	(102.4, 187.8)	694	106.6	(98.7, 114.5)	1.36	(1.00, 1.84)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I60 – I69. These data in ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

An average of 19 Māori each year in Te Tauraki were hospitalised for hypertensive disease (disease related to high blood pressure) – 1.7 times the rate of non-Māori (Table 96). Small numbers make it difficult to draw conclusions about the rates for Māori in West Coast DHB and South Canterbury DHB (hence tables are not provided). Rates for Canterbury DHB (Table 97), and Southern DHB (Table 98) are also based on low numbers.

Table 96 – Hospitalisations for hypertensive disease, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	9	26.0	(9.0, 43.0)	137	18.8	(15.6, 22.0)	1.38	(0.70, 2.71)
Male	10	27.2	(10.3, 44.1)	77	12.9	(10.0, 15.8)	**2.12**	**(1.10, 4.09)**
Total	19	26.5	(14.6, 38.4)	214	16	(13.9, 18.1)	**1.65**	**(1.03, 2.64)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I10 – I15. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 97 – Hospitalisations for hypertensive disease, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	2	11.1	(0.0, 26.4)	56	13.3	(9.8, 16.8)	0.83	(0.20, 3.42)
Male	6	31.8	(6.3, 57.3)	33	11.1	(7.3, 14.9)	**2.86**	**(1.20, 6.83)**
Total	8	21.5	(6.6, 36.4)	90	12.4	(9.8, 15.0)	1.73	(0.84, 3.57)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I10 – I15. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 98 – Hospitalisations for hypertensive disease, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	5	39.1	(3.6, 74.6)	58	23.8	(17.7, 29.9)	1.64	(0.64, 4.22)
Male	3	21.9	(0.0, 45.4)	33	15.2	(10.0, 20.4)	1.44	(0.47, 4.45)
Total	8	30.0	(9.2, 50.8)	91	19.5	(15.5, 23.5)	1.54	(0.75, 3.17)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: I10 – I15. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori in Te Tauraki were 2.5 times more likely than non-Māori to die from circulatory disease before the age of 75 years (Table 99), and death rates were higher for Māori men (2.4 times) and Māori women (2.6 times) compared to non-Māori. A similarly high pattern of premature death from circulatory disease was seen for Māori in Canterbury DHB – 2.8 times (Table 101) and Southern DHB – 2.2 times (Table 103).

Table 99 – Early death from circulatory system disease, Te Tauraki, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	19	28.4	(15.7, 41.1)	144	10.9	(9.1, 12.7)	**2.61**	**(1.62, 4.20)**
Male	40	57.2	(39.4, 75.0)	294	23.7	(21.0, 26.4)	**2.42**	**(1.74, 3.37)**
Total	59	43.1	(32.1, 54.1)	438	17.2	(15.6, 18.8)	**2.51**	**(1.91, 3.29)**

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 100 – Early death from circulatory system disease, West Coast DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	2	44.3	(0.0, 112.9)	7	11.9	(3.0, 20.8)	3.72	(0.67, 20.83)
Male	2	51.9	(0.0, 132.3)	12	21.1	(9.3, 32.9)	2.45	(0.47, 12.73)
Total	3	48.1	(0.0, 100.8)	19	16.7	(9.2, 24.2)	2.88	(0.88, 9.41)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 101 – Early death from circulatory system disease, Canterbury DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	11	29.9	(11.9, 47.9)	71	9.9	(7.6, 12.2)	**3.03**	**(1.59, 5.77)**
Male	24	64.4	(38.7, 90.1)	162	24.2	(20.5, 27.9)	**2.67**	**(1.74, 4.09)**
Total	35	47.9	(32.0, 63.8)	233	16.9	(14.7, 19.1)	**2.84**	**(1.99, 4.05)**

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 102 – Early death from circulatory system disease, South Canterbury DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	1	18.9	(0.0, 60.4)	12	13.1	(5.7, 20.5)	1.44	(0.15, 13.88)
Male	2	39.7	(0.0, 101.2)	24	28	(16.8, 39.2)	1.42	(0.29, 7.02)
Total	2	28.7	(0.0, 65.0)	36	20.6	(13.9, 27.3)	1.40	(0.38, 5.16)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 103 – Early death from circulatory system disease, Southern DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	6	25.8	(5.5, 46.1)	54	12.0	(8.8, 15.2)	2.16	(0.94, 4.96)
Male	12	50.0	(22.2, 77.8)	96	22.4	(17.9, 26.9)	**2.23**	**(1.23, 4.03)**
Total	19	37.9	(20.7, 55.1)	150	17.2	(14.5, 19.9)	**2.21**	**(1.36, 3.57)**

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

3.4. Diabetes

Based on data held in the Virtual Diabetes Register (VDR), roughly 4,385 Māori (2,201 women and 2,184 men) aged ≥25 years in Te Tauraki had diabetes in 2022 (Table 104). After adjusting for differences in the population age structures, Māori in Te Tauraki were 1.5 times more likely than non-Māori to have diabetes. Overall, this means an estimated 6.2% of Māori aged ≥25 years in Te Tauraki have diabetes. Diabetes prevalence was similarly high for Māori ranging from 5.6% to 6.5% of Māori adults across all the DHBs - 1.5 times higher for Māori compared to non-Māori in West Coast DHB (Table 105), 1.6 times higher for Māori compared to non-Māori in Canterbury DHB (Table 106), 1.4 times higher for Māori compared to non-Māori in South Canterbury DHB (Table 107) and 1.5 times higher for Māori compared to non-Māori in Southern DHB (Table 108).

The VDR contains data about people suspected as having diabetes, identified through their use of diabetes related health services (including hospital admissions and outpatient appointments, laboratory tests, and pharmaceutical dispensing). Diabetes prevalence estimates are based on the number of people alive and enrolled in a PHO, at 31 December of the year in question. There are some limitations to the quality of the VDR data. For example, it will miss people with diabetes who have died during the year, or who are not known to health services.

Table 104 – Diabetes prevalence, aged 25 years and over, Te Tauraki, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	2,201	6.4	(6.1, 6.7)	21,133	3.7	(3.7, 3.8)	**1.71**	**(1.63, 1.79)**
Male	2,184	6.0	(5.7, 6.2)	24,197	4.3	(4.2, 4.4)	**1.39**	**(1.33, 1.46)**
Total	4,385	6.2	(6.0, 6.4)	45,330	4.0	(4.0, 4.1)	**1.54**	**(1.49, 1.59)**

Source: Virtual Diabetes Register, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 105 – Diabetes prevalence, aged 25 years and over, West Coast DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	98	5.8	(4.6, 7.3)	680	3.6	(3.2, 4.0)	**1.61**	**(1.25, 2.07)**
Male	89	5.5	(4.2, 6.9)	847	3.9	(3.5, 4.3)	**1.40**	**(1.08, 1.82)**
Total	187	5.6	(4.7, 6.6)	1,527	3.8	(3.5, 4.1)	**1.49**	**(1.24, 1.78)**

Source: Virtual Diabetes Register, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 106 – Diabetes prevalence, aged 25 years and over, Canterbury DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	1,212	6.6	(6.3, 7.0)	11,631	3.6	(3.6, 3.7)	**1.82**	**(1.71, 1.94)**
Male	1,260	6.4	(6.0, 6.8)	13,515	4.4	(4.3, 4.5)	**1.45**	**(1.36, 1.54)**
Total	2,472	6.5	(6.2, 6.8)	25,146	4.0	(4.0, 4.1)	**1.62**	**(1.55, 1.69)**

Source: Virtual Diabetes Register, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 107 – Diabetes prevalence, aged 25 years and over, South Canterbury DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	132	6.7	(5.5, 8.0)	1,552	4.4	(4.1, 4.7)	**1.51**	**(1.24, 1.85)**
Male	109	5.6	(4.5, 6.8)	1,740	4.4	(4.1, 4.7)	**1.27**	**(1.02, 1.56)**
Total	241	6.1	(5.3, 7.0)	3,292	4.4	(4.2, 4.6)	**1.39**	**(1.20, 1.61)**

Source: Virtual Diabetes Register, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 108 – Diabetes prevalence, aged 25 years and over, Southern DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	759	6.1	(5.6, 6.6)	7,270	3.8	(3.7, 3.9)	**1.59**	**(1.47, 1.73)**
Male	726	5.4	(5.0, 5.9)	8,095	4.1	(4.0, 4.2)	**1.33**	**(1.22, 1.44)**
Total	1,485	5.8	(5.4, 6.1)	15,365	3.9	(3.9, 4.0)	**1.46**	**(1.38, 1.54)**

Source: Virtual Diabetes Register, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 109 shows how many people with diabetes are receiving medication, regular monitoring (HbA1c blood tests), and screening for diabetes complications. Ideally, all people with diabetes should be receiving regular monitoring (with appropriate adjustments to treatment), and screening for complications such as renal (kidney) damage. In 2022, 71% of Māori with diabetes in Te Tauraki were receiving regular HbA1c monitoring, and only 40.5% were receiving the necessary screening for renal disease.

Māori in Te Tauraki were also significantly less likely (0.9 times) than non-Māori with diabetes to be regularly receiving diabetes medicines (Table 109). While not all people with diabetes require medication, those that do should take it regularly for optimum diabetes control. The presence of ethnic differences in medication receipt raises questions about the quality of care and access to appropriate treatment for Māori, especially when Māori with diabetes in Te Tauraki have higher rates of preventable diabetes complications.

Patterns were similar across DHBs (Table 110 to Table 113), although statistically significant differences between Māori and non-Māori only become apparent when the data are pooled and looked at as part of the larger group of Te Tauraki.

Table 109 – Diabetes medication use, monitoring of blood glucose and screening for renal disease, aged 25 years and over, Te Tauraki, 2022

Indicator	Māori				non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
People with diabetes regularly receiving metformin or insulin [1]									
Total	2,285	52.1	46,830	(43,611, 50,150)	26,035	52,939	(51,469, 54,422)	**0.88**	**(0.82, 0.95)**
People with diabetes having regular HbA1c monitoring [2]									
Total	3,113	71.0	63,158	(59,468, 66,947)	33,902	65,186	(63,643, 66,741)	0.97	(0.91, 1.03)
People with diabetes having regular screening for renal disease [3]									
Total	1,777	40.5	34,360	(31,673, 37,142)	19,465	36,591	(35,463, 37,730)	0.94	(0.86, 1.02)

Source: [1] Pharmaceutical Collection, Ministry of Health. [2],[3] Laboratory Collection, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 110 – Diabetes medication use, monitoring of blood glucose and screening for renal disease, aged 25 years and over, West Coast DHB, 2022

Indicator	Māori				non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
People with diabetes regularly receiving metformin or insulin [1]									
Total	90	48.1	34,448	(20,964, 50,223)	807	43,476	(34,955, 52,453)	0.79	(0.50, 1.25)
People with diabetes having regular HbA1c monitoring [2]									
Total	142	75.9	67,762	(47,733, 90,451)	1,177	65,258	(55,480, 75,466)	1.04	(0.74, 1.46)
People with diabetes having regular screening for renal disease [3]									
Total	88	47.1	35,251	(21,735, 51,091)	682	32,453	(25,837, 39,455)	1.09	(0.69, 1.71)

Source: [1] Pharmaceutical Collection, Ministry of Health. [2],[3] Laboratory Collection, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 111 – Diabetes medication use, monitoring of blood glucose and screening for renal disease, aged 25 years and over, Canterbury DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with diabetes regularly receiving metformin or insulin [1]										
Total	1,311	53.0	49,086	(44,728, 53,626)	14,664	55,339	(53,355, 57,347)		0.89	(0.81, 0.98)
People with diabetes having regular HbA1c monitoring [2]										
Total	1,529	61.9	55,346	(50,829, 60,037)	16,626	57,790	(55,894, 59,708)		0.96	(0.88, 1.05)
People with diabetes having regular screening for renal disease [3]										
Total	735	29.7	27,542	(24,279, 30,988)	7,889	29,395	(28,052, 30,761)		0.94	(0.82, 1.07)

Source: [1] Pharmaceutical Collection, Ministry of Health. [2],[3] Laboratory Collection, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 112 – Diabetes medication use, monitoring of blood glucose and screening for renal disease, aged 25 years and over, South Canterbury DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with diabetes regularly receiving metformin or insulin [1]										
Total	143	59.3	42,960	(31,330, 56,129)	1,992	50,823	(45,314, 56,516)		0.85	(0.62, 1.14)
People with diabetes having regular HbA1c monitoring [2]										
Total	195	80.9	71,502	(54,830, 90,043)	2,635	69,856	(63,624, 76,271)		1.02	(0.79, 1.32)
People with diabetes having regular screening for renal disease [3]										
Total	100	41.5	35,463	(23,575, 49,258)	1,416	35,640	(31,244, 40,213)		1.00	(0.68, 1.45)

Source: [1] Pharmaceutical Collection, Ministry of Health. [2],[3] Laboratory Collection, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 113 – Diabetes medication use, monitoring of blood glucose and screening for renal disease, aged 25 years and over, Southern DHB, 2022

Indicator	Māori				non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
People with diabetes regularly receiving metformin or insulin [1]									
Total	741	49.9	45,031	(39,569, 50,799)	8,572	50,111	(47,636, 52,626)	0.90	(0.79, 1.03)
People with diabetes having regular HbA1c monitoring [2]									
Total	1,247	84.0	74,736	(67,750, 82,021)	13,464	77,215	(74,272, 80,197)	0.97	(0.87, 1.07)
People with diabetes having regular screening for renal disease [3]									
Total	854	57.5	45,871	(40,692, 51,319)	9,478	49,839	(47,576, 52,137)	0.92	(0.81, 1.04)

Source: [1] Pharmaceutical Collection, Ministry of Health. [2],[3] Laboratory Collection, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori:non-Māori inequities in access to diabetes medication (where required), and the low rates of Māori with diabetes in Te Tauraki receiving screening for complications, are particularly concerning given that on average, each year 10 Māori with diabetes in Te Tauraki had a lower limb amputated (Table 114) and 502 Māori were hospitalised for renal failure (Table 115). Māori with diabetes were 2.0 times more likely than non-Māori with diabetes to be hospitalised for renal failure in Te Tauraki.

Table 114 – Hospitalisations for lower limb amputations with concurrent diabetes, aged 15 years and over, Te Tauraki, 2019 to 2021

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Total	10	162.6	(58.7, 412.5)	135	175	(107.7, 266.9)	0.93	(0.37, 2.33)

Source: NMDS, Te Whatu Ora. Whakamaua Dashboard.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 115 – Hospitalisations for renal failure with concurrent diabetes, aged 15 years and over, Te Tauraki, 2019 to 2021

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	209	7,656	(5,921, 9,695)	1,806	4,821	(4,223, 5,469)	**1.59**	**(1.21, 2.09)**
Male	294	11,856	(9,443, 14,637)	2,501	4,617	(4,044, 5,241)	**2.57**	**(2.00, 3.30)**
Total	502	9,631	(8,156, 11,270)	4,307	4,716	(4,301, 5,158)	**2.04**	**(1.70, 2.45)**

Source: NMDS, Te Whatu Ora. Whakamaua Dashboard.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

3.5. Respiratory disease

Between 2020-2023, asthma hospitalisations were highest for Māori children, with an average of 94 Māori children (≤14 years) per year in Te Tauraki hospitalised for asthma, a rate 1.7 times higher than for non-Māori (Table 116). This was similar across the DHBs, except in Canterbury DHB where asthma hospitalisations were highest for Māori adults aged 35-64 years (Table 118).

Table 116 – Hospitalisations for asthma, all ages, Te Tauraki, July 2020 to June 2023

Sex and Age group	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
0 to 14 years								
Female	36	228.7	(154.3, 303.1)	90	132.4	(105.0, 159.8)	**1.73**	**(1.17, 2.54)**
Male	58	344.2	(255.6, 432.8)	143	201.6	(168.6, 234.6)	**1.71**	**(1.26, 2.32)**
Total	94	288.1	(230.0, 346.2)	233	167.9	(146.3, 189.5)	**1.72**	**(1.35, 2.18)**
15 to 34 years								
Female	31	163.1	(105.4, 220.8)	72	62.7	(48.2, 77.2)	**2.60**	**(1.71, 3.97)**
Male	10	51.4	(20.1, 82.7)	28	24.6	(15.6, 33.6)	**2.09**	**(1.03, 4.27)**
Total	41	105.2	(73.0, 137.4)	101	42.8	(34.4, 51.2)	**2.46**	**(1.71, 3.53)**
35 to 64 years								
Female	31	204.6	(132.6, 276.6)	180	90.4	(77.2, 103.6)	**2.26**	**(1.55, 3.31)**
Male	35	180.2	(120.2, 240.2)	128	62.8	(51.9, 73.7)	**2.87**	**(1.97, 4.18)**
Total	66	191.5	(145.2, 237.8)	309	76.8	(68.2, 85.4)	**2.49**	**(1.91, 3.25)**
65 years and over								
Female	6	171.7	(38.0, 305.4)	113	121.7	(99.3, 144.1)	1.41	(0.63, 3.14)
Male	5	134.8	(12.5, 257.1)	72	93.7	(72.0, 115.4)	1.44	(0.56, 3.67)
Total	11	154.4	(63.2, 245.6)	185	108.7	(93.0, 124.4)	1.42	(0.77, 2.61)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J45 – J46.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 117 – Hospitalisations for asthma, all ages, West Coast DHB, July 2020 to June 2023

Sex and Age group	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
0 to 14 years								
Total	3	216.3	(0.0, 476)	9	226.9	(81.3, 372.5)	0.95	(0.24, 3.71)
15 to 34 years								
Total	2	138.8	(0.0, 349.5)	4	67.5	(1.3, 133.7)	2.06	(0.34, 12.51)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J45 – J46.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 118 – Hospitalisations for asthma, all ages, Canterbury DHB, July 2020 to June 2023

Sex and Age group	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
0 to 14 years								
Female	19	212.4	(116.0, 308.8)	50	125.1	(90.4, 159.8)	1.70	(1.00, 2.89)
Male	30	317	(202.9, 431.1)	89	214.1	(169.7, 258.5)	1.48	(0.98, 2.24)
Total	48	266.2	(191.1, 341.3)	139	170.8	(142.4, 199.2)	**1.56**	**(1.12, 2.16)**
15 to 34 years								
Female	15	149	(73.6, 224.4)	40	58.4	(40.4, 76.4)	**2.55**	**(1.41, 4.61)**
Male	6	54.6	(10.9, 98.3)	14	22.3	(10.6, 34.0)	2.45	(0.94, 6.38)
Total	21	99.5	(56.9, 142.1)	54	39.5	(29.0, 50.0)	**2.52**	**(1.52, 4.17)**
35 to 64 years								
Female	22	269.7	(157.9, 381.5)	111	101	(82.2, 119.8)	**2.67**	**(1.70, 4.21)**
Male	32	286.7	(186.8, 386.6)	90	79.9	(63.4, 96.4)	**3.59**	**(2.39, 5.37)**
Total	54	278.3	(204.1, 352.5)	201	90.6	(78.1, 103.1)	**3.07**	**(2.27, 4.15)**
65 years and over								
Female	2	118.2	(0.0, 269.9)	95	189.4	(151.4, 227.4)	0.62	(0.17, 2.29)
Male	4	218.8	(4.4, 433.2)	55	133.5	(98.1, 168.9)	1.64	(0.59, 4.52)
Total	6	173.3	(38.3, 308.3)	150	163.7	(137.5, 189.9)	1.06	(0.48, 2.34)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J45 – J46.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 119 – Hospitalisations for asthma, all ages, South Canterbury DHB, July 2020 to June 2023

Sex and Age group	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
0 to 14 years								
Female	5	559.1	(69.0, 1049.2)	9	220.2	(73.6, 366.8)	2.54	(0.85, 7.62)
Male	4	376	(0.0, 760.9)	5	118.9	(14.7, 223.1)	3.16	(0.82, 12.15)
Total	9	462.3	(154.5, 770.1)	14	167.4	(78.7, 256.1)	**2.76**	**(1.18, 6.46)**
15 to 34 years								
Total	2	91.2	(0.0, 229.7)	3	22.1	(0.0, 48.7)	4.12	(0.59, 28.51)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J45 – J46.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 120 – Hospitalisations for asthma, all ages, Southern DHB, July 2020 to June 2023

Sex and Age group	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
0 to 14 years								
Female	13	224.4	(100.8, 348.0)	29	132.7	(84.7, 180.7)	1.69	(0.88, 3.27)
Male	22	376.6	(219.2, 534.0)	41	180.9	(125.8, 236.0)	**2.08**	**(1.24, 3.49)**
Total	35	302.4	(201.7, 403.1)	71	157.3	(120.6, 194.0)	**1.92**	**(1.28, 2.88)**
15 to 34 years								
Female	13	183.1	(83.6, 282.6)	28	72	(45.5, 98.5)	**2.54**	**(1.32, 4.90)**
Male	4	48.1	(0.0, 97.4)	11	27.2	(11.4, 43.0)	1.77	(0.55, 5.75)
Total	17	113.7	(59.1, 168.3)	40	49.6	(34.2, 65.0)	**2.29**	**(1.29, 4.06)**
35 to 64 years								
Female	8	140.1	(40.9, 239.3)	58	78.5	(58.3, 98.7)	1.79	(0.84, 3.79)
Male	2	37.5	(0.0, 85.6)	33	42.2	(27.9, 56.5)	0.89	(0.24, 3.35)
Total	10	89	(33.8, 144.2)	91	60.7	(48.2, 73.2)	1.47	(0.76, 2.81)
65 years and over								
Total	3	126.6	(0.0, 262.5)	20	33	(18.4, 47.6)	**3.84**	**(1.20, 12.24)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J45 – J46.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori aged ≥45 years in Te Tauraki were 2.4 times more likely than non-Māori to be hospitalised for chronic obstructive pulmonary disease (COPD) (Table 121). An average of 178 Māori aged ≥45 years were hospitalised for COPD in Te Tauraki each year between 2020 and 2023. COPD hospitalisations, were 1.8 times higher than non-Māori in West Coast DHB (Table 122), 2.4 times higher than non-Māori in Canterbury DHB (Table 123) and 2.7 times higher than non-Māori in Southern DHB (Table 125).

Table 121 – Hospitalisations for chronic obstructive pulmonary disease, aged 45 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	93	568.2	(452.9, 683.5)	840	227.2	(211.8, 242.6)	**2.50**	**(2.02, 3.09)**
Male	85	497.7	(391.7, 603.7)	769	210.1	(195.3, 224.9)	**2.37**	**(1.89, 2.96)**
Total	178	529.9	(452.1, 607.7)	1,619	219.4	(208.7, 230.1)	**2.42**	**(2.07, 2.82)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J40 – J44.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 122 – Hospitalisations for chronic obstructive pulmonary disease, aged 45 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	11	1,011	(404.3, 1,618)	52	536.1	(389.9, 682.3)	1.89	(0.98, 3.63)
Male	4	499.7	(29.2, 970.2)	47	332.5	(237.8, 427.2)	1.50	(0.56, 4.01)
Total	15	769	(379.8, 1,158)	99	433.4	(348.0, 518.8)	**1.77**	**(1.03, 3.05)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J40 – J44.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori

Table 123 – Hospitalisations for chronic obstructive pulmonary disease, aged 45 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	42	514.0	(359.4, 669.4)	442	214.1	(194.1, 234.1)	**2.40**	**(1.75, 3.29)**
Male	44	487.2	(343.8, 630.6)	383	194.1	(174.7, 213.5)	**2.51**	**(1.84, 3.42)**
Total	87	491.8	(388.3, 595.3)	832	205.6	(191.6, 219.6)	**2.39**	**(1.92, 2.98)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J40 – J44.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori

Table 124 – Hospitalisations for chronic obstructive pulmonary disease, aged 45 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	7	793.6	(191.2, 1396)	87	279.6	(220.8, 338.4)	**2.84**	**(1.29, 6.22)**
Male	2	171.8	(0.0, 409.9)	67	220.5	(167.6, 273.4)	0.78	(0.19, 3.18)
Total	9	477.9	(159.7, 796.1)	155	251.2	(211.6, 290.8)	1.90	(0.96, 3.76)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J40 – J44.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori

Table 125 – Hospitalisations for chronic obstructive pulmonary disease, aged 45 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	34	542.3	(359.1, 725.5)	260	207.7	(182.4, 233.0)	**2.61**	**(1.83, 3.73)**
Male	34	591.6	(392.7, 790.5)	272	218.7	(192.7, 244.7)	**2.70**	**(1.89, 3.86)**
Total	68	566.7	(431.7, 701.7)	533	212.5	(194.5, 230.5)	**2.67**	**(2.07, 3.43)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: J40 – J44.These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori

The Māori hospitalisation rate for bronchiectasis was 9.3/100,000 people between July 2020 to June 2023 in Te Tauraki compared to 7.8/100,000 for non-Māori (Table 126). Small numbers make it difficult to draw conclusions about the rates for West Coast DHB and South Canterbury DHB (hence these tables are not presented). Data for Canterbury DHB are shown in Table 127 and Southern DHB in Table 128.

Table 126 – Hospitalisations for bronchiectasis, all ages, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	5	5.5	(0.7, 10.3)	115	8.2	(6.7, 9.7)	0.67	(0.27, 1.64)
Male	9	12.9	(4.6, 21.2)	59	7.3	(5.4, 9.2)	1.75	(0.88, 3.49)
Total	14	9.3	(4.5, 14.1)	175	7.8	(6.6, 9.0)	1.19	(0.69, 2.03)

Source: NMDS, Te Whatu Ora.
Notes: Excluding congenital bronchiectasis. ICD-10 code: J47. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 127 – Hospitalisations for bronchiectasis, all ages, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	5.2	(0.0, 11.1)	83	8.3	(6.5, 10.1)	0.63	(0.20, 2.00)
Male	7	18.7	(5.2, 32.2)	35	5.5	(3.7, 7.3)	**3.37**	**(1.52, 7.48)**
Total	10	12.2	(4.8, 19.6)	118	7.0	(5.7, 8.3)	1.75	(0.93, 3.30)

Source: NMDS, Te Whatu Ora.
Notes: Excluding congenital bronchiectasis. ICD-10 code: J47. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 128 – Hospitalisations for bronchiectasis, all ages, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Male	2	7.6	(0.0, 18.2)	22	12.2	(7.1, 17.3)	0.63	(0.15, 2.67)
Total	3	5.2	(0.0, 11.4)	51	11.3	(8.2, 14.4)	0.46	(0.13, 1.58)

Source: NMDS, Te Whatu Ora.
Notes: Excluding congenital bronchiectasis. ICD-10 code: J47. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

On average, there were 15 premature Māori deaths each year from respiratory disease in Te Tauraki, between 2014 to 2018 (Table 129), at a rate 1.9 times higher than non-Māori. These do not include deaths from lung cancer, which will be covered separately in the following chapter. Small numbers make it difficult to draw conclusions about the rates across DHBs.

Table 129 – Early death from respiratory disease, Te Tauraki, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	8	11.4	(3.4, 19.4)	74	5.8	(4.5, 7.1)	1.96	(0.94, 4.11)
Male	8	10.7	(3.1, 18.3)	77	5.9	(4.6, 7.2)	1.81	(0.86, 3.80)
Total	15	11.1	(5.6, 16.6)	150	5.9	(5.0, 6.8)	**1.88**	**(1.12, 3.18)**

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 130 – Early death from respiratory disease, West Coast DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Male	1	19.6	(0.0, 69.1)	5	7.4	(0.7, 14.1)	2.63	(0.18, 38.49)
Total	1	11.1	(0.0, 35.5)	9	8.3	(2.7, 13.9)	1.34	(0.14, 13.21)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 131 – Early death from respiratory disease, Canterbury DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	4	10.2	(0.0, 20.8)	38	5.1	(3.5, 6.7)	1.99	(0.67, 5.86)
Male	4	11.2	(0.5, 21.9)	38	5.7	(3.9, 7.5)	1.96	(0.72, 5.38)
Total	8	10.8	(3.2, 18.4)	75	5.4	(4.2, 6.6)	1.98	(0.95, 4.15)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 132 – Early death from respiratory disease, South Canterbury DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	1	14.1	(0.0, 49.7)	5	9.1	(1.4, 16.8)	1.55	(0.11, 22.29)
Male	1	21.5	(0.0, 68.6)	6	7.5	(1.6, 13.4)	2.86	(0.28, 29.30)
Total	1	17.3	(0.0, 46.0)	12	8.3	(3.5, 13.1)	2.10	(0.36, 12.10)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 133 – Early death from respiratory disease, Southern DHB, 2014 to 2018

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	13.8	(0.0, 28.4)	27	6.1	(3.8, 8.4)	2.26	(0.73, 6.97)
Male	2	7.6	(0.0, 18.1)	28	5.7	(3.6, 7.8)	1.33	(0.32, 5.58)
Total	5	10.6	(1.6, 19.6)	55	5.9	(4.3, 7.5)	1.80	(0.75, 4.37)

Source: Mortality Collections, Te Whatu Ora.
Notes: "Early deaths" are defined as those occurring under 75 years of age. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

3.6. Gout

Gout is the most common form of inflammatory arthritis, and is caused by an inflammatory response to monosodium urate crystals, which form in the presence of high urate in the blood (Jackson, Dalbeth et al. 2014). Patients typically experience recurrent flares of severe joint inflammation, which if not properly treated, over time can lead to tophi, chronic arthritis, and joint damage.

In 2022, 3,864 Māori (4.7% of those ≥20 years) in Te Tauraki were identified as having gout, and men were much more likely to be affected than women (7.5% of Māori men compared to 1.9% of Māori women) (Table 134). Māori in Te Tauraki were 1.8 times more likely than non-Māori to suffer from gout.

The patterns were similar across all DHBs, with Māori in West Coast DHB being 1.4 times more likely to have gout than non-Māori (Table 135), Māori in Canterbury DHB were 2.0 times more likely to have gout than non-Māori (Table 136), Māori in South Canterbury DHB were 1.5 times more likely to have gout than non-Māori (Table 137) and Māori in Southern DHB were 1.7 times more likely to have gout than non-Māori (Table 138).

These data are based on people who have either been hospitalised with gout or prescribed a gout medication, who are enrolled with a Primary Health Organisation (PHO). These data will therefore not capture all people with gout – previous analysis has found that these data miss approximately 20% of people with gout (Jackson, Wright et al. 2012).

Table 134 – Gout prevalence, aged 20 years and over, Te Tauraki, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	852	1.9	(1.8, 2.0)	7,966	0.9	(0.9, 0.9)	**2.08**	**(1.92, 2.24)**
Male	3,012	7.5	(7.2, 7.8)	27,503	4.3	(4.3, 4.4)	**1.73**	**(1.66, 1.80)**
Total	3,864	4.7	(4.6, 4.9)	35,469	2.6	(2.6, 2.6)	**1.81**	**(1.75, 1.88)**

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Includes those enrolled with PHOs only. Percentages are age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 135 – Gout prevalence, aged 20 years and over, West Coast DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	45	1.9	(1.3, 2.7)	343	1.1	(0.9, 1.3)	**1.70**	**(1.16, 2.49)**
Male	121	6.5	(5.2, 7.9)	1,207	4.5	(4.2, 4.9)	**1.42**	**(1.14, 1.78)**
Total	166	4.1	(3.4, 4.8)	1,550	2.8	(2.6, 3.1)	**1.42**	**(1.17, 1.72)**

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Includes those enrolled with PHOs only. Percentages are age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 136 – Gout prevalence, aged 20 years and over, Canterbury DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	426	1.8	(1.7, 2.0)	3,741	0.8	(0.7, 0.8)	**2.37**	**(2.13, 2.64)**
Male	1,628	7.4	(7.0, 7.8)	13,956	4.1	(4.0, 4.1)	**1.82**	**(1.73, 1.93)**
Total	2,054	4.7	(4.5, 4.9)	17,697	2.4	(2.3, 2.4)	**1.96**	**(1.87, 2.06)**

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Includes those enrolled with PHOs only. Percentages are age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 137 – Gout prevalence, aged 20 years and over, South Canterbury DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	54	2.3	(1.7, 3.1)	713	1.1	(0.9, 1.2)	**2.17**	**(1.58, 2.98)**
Male	143	6.6	(5.5, 7.9)	2,179	4.9	(4.6, 5.2)	**1.35**	**(1.12, 1.63)**
Total	197	4.4	(3.8, 5.2)	2,892	3	(2.8, 3.1)	**1.49**	**(1.27, 1.76)**

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Includes those enrolled with PHOs only. Percentages are age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 138 – Gout prevalence, aged 20 years and over, Southern DHB, 2022

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	%	(95% CI)	Number	%	(95% CI)		
Female	327	1.9	(1.7, 2.1)	3,169	1.1	(1.0, 1.1)	**1.76**	**(1.56, 2.00)**
Male	1,120	7.9	(7.4, 8.4)	10,161	4.6	(4.5, 4.8)	**1.69**	**(1.58, 1.81)**
Total	1,447	4.9	(4.6, 5.1)	13,330	2.8	(2.8, 2.9)	**1.71**	**(1.61, 1.81)**

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Includes those enrolled with PHOs only. Percentages are age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Appropriate treatment of gout is important to prevent permanent complications. Long-term urate-lowering therapy, such as allopurinol, is recommended to prevent gout flares and prevent tophus formation, bony erosions, and permanent disability in people with gout.

Table 139 shows that only 42.2% of Māori with gout in Te Tauraki were receiving regular urate-lowering therapy. This percentage is roughly the same as for non-Māori, however Māori with gout have earlier onset and more severe disease, so to achieve equitable care would require higher levels of urate-lowering therapy than non-Māori (Health Quality and Safety Commission 2024).

Gout flares can also be treated with non-steroidal anti-inflammatory drugs (NSAIDs). Although NSAIDs are effective at treating acute gout flares, these medicines have important side effects including kidney injury and peptic ulcer disease, and they should not be used long-term in gout without urate-lowering therapy. Table 139 shows that 14.8% of Māori with gout in Te Tauraki were prescribed NSAIDs without urate-lowering therapy. Some of these people with gout may have been prescribed a NSAID for a non-gout reason, however high rates of NSAID dispensing without urate-lowering therapy can also be a marker of inappropriate (and potentially harmful) gout treatment. These data do also not include people with gout using over-the-counter NSAIDs.

Similar patterns are seen across the DHBs (Table 140 to Table 143), although the findings are non-significant.

Table 139 – Gout treatment, aged 20 years and over, Te Tauraki, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	% of those with gout	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with gout who received urate-lowering therapy regularly										
Total	1,630	42.2	22,579	(20,288, 24,955)	16,761	24,931	(23,883, 25,991)		0.91	(0.81, 1.01)
People with gout given NSAIDs but not urate-lowering therapy										
Total	572	14.8	22,090	(18,604, 25,798)	4,824	23,354	(21,725, 25,019)		0.95	(0.79, 1.13)

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 140 – Gout treatment, aged 20 years and over, West Coast DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	% of those with gout	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with gout who received urate-lowering therapy regularly										
Total	60	36.1	22,749	(7,642, 41,062)	684	34,454	(17,600, 52,290)		0.66	(0.28, 1.57)
People with gout given NSAIDs but not urate-lowering therapy										
Total	29	17.5	14,677	(6,119, 25,976)	210	18,159	(10,609, 26,523)		0.81	(0.37, 1.75)

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 141 – Gout treatment, aged 20 years and over, Canterbury DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	% of those with gout	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with gout who received urate-lowering therapy regularly										
Total	899	43.8	25,227	(20,763, 29,918)	8,523	25,916	(24,451, 27,404)		0.97	(0.81, 1.18)
People with gout given NSAIDs but not urate-lowering therapy										
Total	268	13.1	17,653	(13,758, 21,917)	2,186	21,025	(18,823, 23,297)		0.84	(0.65, 1.08)

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 142 – Gout treatment, aged 20 years and over, South Canterbury DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	% of those with gout	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with gout who received urate-lowering therapy regularly										
Total	73	37.1	18,229	(11,562, 26,166)	1,382	24,686	(18,970, 30,635)		0.74	(0.47, 1.16)
People with gout given NSAIDs but not urate-lowering therapy										
Total	34	17.3	26,569	(10,522, 47,303)	430	20,847	(13,953, 28,252)		1.27	(0.61, 2.68)

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 143 – Gout treatment, aged 20 years and over, Southern DHB, 2022

Indicator	Māori				non-Māori				Māori/non-Māori rate ratio (95% CI)	
	Number	% of those with gout	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)				
People with gout who received urate-lowering therapy regularly										
Total	598	41.3	20,709	(17,616, 23,996)	6,172	23,442	(21,886, 25,026)		0.88	(0.75, 1.04)
People with gout given NSAIDs but not urate-lowering therapy										
Total	241	16.7	25,457	(19,993, 31,469)	1,998	26,613	(23,989, 29,325)		0.96	(0.75, 1.22)

Source: NMDS, Pharmaceutical Collection, PHO enrolments, Mortality Collection, New Zealand Cancer Registry, Ministry of Health.
Notes: Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Māori are also much likely than non-Māori in Te Tauraki to be hospitalised for gout. The hospitalisation rate is higher in Māori men than in Māori women. While Māori were 1.8 times more likely than non-Māori to have gout (Table 134), they were 4.0 times more likely than non-Māori in Te Tauraki to be hospitalised for gout (Table 144).

Māori aged 25 years and over were 5.4 times as likely to be hospitalised for gout compared to non-Māori in Canterbury DHB (Table 146) and 2.9 times as likely to be hospitalised for gout compared to non-Māori in Southern DHB (Table 148).

Table 144 – Hospitalisations for gout, aged 25 years and over, Te Tauraki, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	8	17.1	(5.2, 29.0)	44	4.0	(2.8, 5.2)	**4.30**	**(2.03, 9.14)**
Male	31	97.1	(63.1, 131.1)	147	25.1	(21.1, 29.1)	**3.87**	**(2.63, 5.69)**
Total	39	57.4	(39.4, 75.4)	192	14.4	(12.4, 16.4)	**3.99**	**(2.83, 5.62)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: M10. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 145 – Hospitalisations for gout, aged 25 years and over, West Coast DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Male	2	89.7	(0.0, 204.8)	6	36.3	(6.4, 66.2)	2.47	(0.54, 11.35)
Total	3	46.6	(0.0, 102.5)	7	19.4	(4.7, 34.1)	2.40	(0.58, 9.93)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: M10. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 146 – Hospitalisations for gout, aged 25 years and over, Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	10.9	(0.0, 24.0)	25	3.8	(2.3, 5.3)	2.87	(0.81, 10.15)
Male	18	103.4	(55.2, 151.6)	69	18.2	(13.9, 22.5)	**5.67**	**(3.36, 9.56)**
Total	20	58.3	(32.9, 83.7)	94	10.8	(8.6, 13.0)	**5.39**	**(3.34, 8.70)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: M10. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 147 – Hospitalisations for gout, aged 25 years and over, South Canterbury DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Total	2	34.0	(0.0, 81.1)	16	17.9	(9.0, 26.8)	1.90	(0.44, 8.25)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: M10. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 148 – Hospitalisations for gout, aged 25 years and over, Southern DHB, July 2020 to June 2023

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	4	23	(0.0, 46.5)	14	4.2	(2.0, 6.4)	**5.47**	**(1.74, 17.21)**
Male	11	93	(37.2, 148.8)	61	35.1	(26.3, 43.9)	**2.65**	**(1.38, 5.07)**
Total	14	58	(28.0, 88.0)	75	19.7	(15.2, 24.2)	**2.94**	**(1.67, 5.18)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: M10. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Mate pukupuku
Cancer

4. Mate pukupuku – Cancer

Cancer is a leading cause of illness and death for Māori, making up 25% of amenable mortality for Māori females and 10% for Māori males (Ministry of Health 2010). There are persisting disparities in cancer incidence, mortality and survival between Māori and non-Māori, with cancer making an important contribution to the life expectancy gap for Māori (Walsh and Grey 2019, Walsh 2023). Nationally between 2016 and 2020, compared to non-Māori, Māori were 1.2 times more likely to be diagnosed with cancer and 1.7 times more likely to die from cancer. Lung cancer alone contributes almost one year to the life expectancy gap between Māori and non-Māori non-Pacific women (Walsh and Grey 2019), and is the second leading cause of potentially avoidable death for Māori nationwide. Māori diagnosed with cancer are more likely to be diagnosed at a later stage, die (and to die sooner) than non-Māori with cancer (Gurney, Campbell et al. 2019).

The factors underpinning overall worse cancer incidence, mortality and survival for Māori are systemic. Broad health system actions that impact multiple cancers, such as improving access for Māori to prevention, timely diagnosis and appropriate treatment (regardless of income or place of residence), increased Māori control in cancer decision making and Māori-led services are crucial (Gurney, Robson et al. 2020).

More than two-thirds of all Māori cancer deaths occur from very poor-prognosis cancers. A key to reducing cancer deaths for Māori is by preventing the cancer in the first place (Gurney, Robson et al. 2020). More than half of the top 10 most common cancers and cancer deaths among Māori have known causal exposures that disproportionately impact Māori:

- tobacco exposure (lung and pancreatic cancers),
- infectious diseases (stomach and liver cancers),
- obesogenic environment/diet and obesity/diabetes mellitus (breast, uterine, colorectal, and pancreatic cancers), and
- familial genetic predisposition (stomach cancer).

Where prevention is not possible, or is unsuccessful, early detection can save lives if cancers are detected, when curative treatment is still possible. Screening programmes, such as breast, cervical and bowel screening, and hepatitis B & C surveillance, need to work much better for Māori. However, many of the most commonly diagnosed cancers among Māori are diagnosed outside of screening programmes. Diagnosis of these cancers principally relies on detection through primary care, so barriers to primary care for Māori need to be removed. Once cancer is diagnosed, the priority becomes ensuring access to timely best-practice treatment.

4.1. Cancer vaccines

Two common cancers, liver and cervix, can be largely prevented by childhood vaccinations which are already included in the free routine National Immunisation Schedule in NZ.

Globally, half of all liver cancers are caused by Hepatitis B infection (Zamor, deLemos et al. 2017). Hepatitis B is included in the routine infant immunisation schedule, and these immunisation data for Māori are presented in the Kahu Taurima chapter in this report.

Human papillomavirus (HPV) infection, which affects >80% of the population (Serrano, Brotons et al. 2018), causes virtually all cervical cancer, as well as causing some oropharyngeal (mouth, throat, tongue, and tonsils), vaginal, vulvar, penile, and anal cancers (Shapiro 2022). HPV vaccination has the potential

to prevent 70% to 90% of all HPV-related cancers (Serrano, Brotons et al. 2018). The HPV vaccine is part of the routine NZ National Immunisation Schedule to be given to all 12-year-olds.

By 14 years of age, only 55.8% of Māori in Te Tauraki in June 2023 had been fully immunised for HPV, compared to 68.4% for non-Māori (Table 149). HPV vaccination rates were 52.2% in West Coast DHB (Table 150), 55.7% in Canterbury DHB (Table 151), 41.5% in South Canterbury DHB (Table 152) and 58.8% in Southern DHB (Table 153).

Table 149 – Human papillomavirus (HPV) immunisation, 2009 birth cohort, Te Tauraki, June 2023

HPV immunisation	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	No. eligible	No. immunised	% immunised	No. eligible	No. immunised	% immunised		
First dose	1,994	1,397	70.1	11,000	8,696	79.1	**0.89**	**(0.86, 0.91)**
Final dose	1,994	1,113	55.8	11,000	7,521	68.4	**0.82**	**(0.78, 0.85)**

Source: National Immunisation Register, Te Whatu Ora
Notes: Percentages are crude (not age-standardised). Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 150 – Human papillomavirus (HPV) immunisation, 2009 birth cohort, West Coast DHB, June 2023

HPV immunisation	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	No. eligible	No. immunised	% immunised	No. eligible	No. immunised	% immunised		
First dose	69	48	69.6	344	248	72.1	0.97	(0.81, 1.14)
Final dose	69	36	52.2	344	207	60.1	0.87	(0.68, 1.11)

Source: National Immunisation Register, Te Whatu Ora
Notes: Percentages are crude (not age-standardised). Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 151 – Human papillomavirus (HPV) immunisation, 2009 birth cohort, Canterbury DHB, June 2023

HPV immunisation	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	No. eligible	No. immunised	% immunised	No. eligible	No. immunised	% immunised		
First dose	1,082	797	73.7	6,288	5,209	82.8	**0.89**	**(0.86, 0.92)**
Final dose	1,082	603	55.7	6,288	4,424	70.4	**0.79**	**(0.75, 0.84)**

Source: National Immunisation Register, Te Whatu Ora
Notes: Percentages are crude (not age-standardised). Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 152 – Human papillomavirus (HPV) immunisation, 2009 birth cohort, South Canterbury DHB, June 2023

HPV immunisation	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	No. eligible	No. immunised	% immunised	No. eligible	No. immunised	% immunised		
First dose	123	70	56.9%	665	460	69.2%	**0.82**	**(0.70, 0.97)**
Final dose	123	51	41.5%	665	390	58.7%	**0.71**	**(0.57, 0.88)**

Source: National Immunisation Register, Te Whatu Ora
Notes: Percentages are crude (not age-standardised). Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 153 – Human papillomavirus (HPV) immunisation, 2009 birth cohort, Southern DHB, June 2023

HPV immunisation	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	No. eligible	No. immunised	% immunised	No. eligible	No. immunised	% immunised		
First dose	720	482	66.9	3,703	2,778	75.0	**0.89**	**(0.84, 0.94)**
Final dose	720	423	58.8	3,703	2,500	67.5	**0.87**	**(0.82, 0.93)**

Source: National Immunisation Register, Te Whatu Ora
Notes: Percentages are crude (not age-standardised). Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

4.2. Cancer screening

Cancer screening checks people without any cancer symptoms, to look for pre-cancerous changes or cancer which can be treated if found early. NZ has three national cancer screening programmes: breast, cervical and bowel cancer.

In Te Tauraki in 2023, 68.7% of eligible Māori women aged 45 to 69 years had been screened for breast cancer in the previous two-year period, compared to 72.8% for non-Māori women (Table 154). Breast cancer screening rates were 60.4% for Māori women in West Coast DHB (Table 155), 70.9% in Canterbury DHB (Table 156), 66.6% in South Canterbury DHB (Table 157) and 65.3% in Southern DHB (Table 158).

Table 154 – Breast cancer screening two-year coverage, aged 45 to 69 years, Te Tauraki, December 2023

Breast screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
45 to 49 years	1,985	2,750	72.2	21,601	29,053	74.4
50 to 54 years	2,006	2,895	69.3	22,181	32,040	69.2
55 to 59 years	1,643	2,505	65.6	22,529	31,233	72.1
60 to 64 years	1,411	2,125	66.4	22,633	31,283	72.3
65 to 69 years	968	1,390	69.6	20,666	26,983	76.6
Total	8,013	11,665	68.7	109,610	150,592	72.8

Source: National Screening Unit, Te Whatu Ora.
Notes: Two-year coverage is defined as the proportion of women eligible for screening who have been screened in the previous two-year period. Percentages are crude (not age-standardised).

Table 155 – Breast cancer screening two-year coverage, aged 45 to 69 years, West Coast DHB, December 2023

Breast screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
45 to 49 years	1,663	2,615	63.6	11,865	15,620	76.0
50 to 54 years	1,660	2,870	57.8	11,157	16,275	68.6
55 to 59 years	1,409	2,415	58.3	10,504	15,285	68.7
60 to 64 years	1,193	1,980	60.3	9,720	13,735	70.8
65 to 69 years	883	1,385	63.8	8,219	11,450	71.8
Total	6,808	11,265	60.4	51,465	72,365	71.1

Source: National Screening Unit, Te Whatu Ora.
Notes: Two-year coverage is defined as the proportion of women eligible for screening who have been screened in the previous two-year period. Percentages are crude (not age-standardised).

Table 156 – Breast cancer screening two-year coverage, aged 45 to 69 years, Canterbury DHB, December 2023

Breast screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
45 to 49 years	1,125	1,530	73.5	12,572	17,135	73.4
50 to 54 years	1,125	1,590	70.8	12,641	18,695	67.6
55 to 59 years	863	1,305	66.1	12,497	17,610	71.0
60 to 64 years	771	1,070	72.1	11,905	17,145	69.4
65 to 69 years	519	715	72.6	11,355	14,695	77.3
Total	4,403	6,210	70.9	60,970	85,280	71.5

Source: National Screening Unit, Te Whatu Ora.
Notes: Two-year coverage is defined as the proportion of women eligible for screening who have been screened in the previous two-year period. Percentages are crude (not age-standardised).

Table 157 – Breast cancer screening two-year coverage, aged 45 to 69 years, South Canterbury DHB, December 2023

Breast screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
45 to 49 years	91	145	62.8	1,289	1,663	77.5
50 to 54 years	123	160	76.9	1,333	1,955	68.2
55 to 59 years	92	140	65.7	1,555	2,115	73.5
60 to 64 years	67	125	53.6	1,552	2,153	72.1
65 to 69 years	70	95	73.7	1,453	1,905	76.3
Total	443	665	66.6	7,182	9,791	73.4

Source: National Screening Unit, Te Whatu Ora.
Notes: Two-year coverage is defined as the proportion of women eligible for screening who have been screened in the previous two-year period. Percentages are crude (not age-standardised).

Table 158 – Breast cancer screening two-year coverage, aged 45 to 69 years, Southern DHB, December 2023

Breast screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
45 to 49 years	684	975	70.2	7,108	9,445	75.3
50 to 54 years	659	1,010	65.2	7,447	10,340	72.0
55 to 59 years	587	935	62.8	7,566	10,335	73.2
60 to 64 years	487	790	61.6	8,228	10,795	76.2
65 to 69 years	334	505	66.1	7,080	9,320	76.0
Total	2,751	4,215	65.3	37,429	50,235	74.5

Source: National Screening Unit, Te Whatu Ora.
Notes: Two-year coverage is defined as the proportion of women eligible for screening who have been screened in the previous two-year period. Percentages are crude (not age-standardised).

For cervical cancer, 63.8% of eligible Māori aged 25 to 69 years in Te Tauraki in 2023 were up-to-date with their cervical screening, compared to 73.8% of non-Māori (Table 159). Māori cervical screening coverage in general was lower in younger age groups.

65.3% of Māori aged 25 to 69 years in West Coast DHB in 2023 were up-to-date with their cervical screening, compared to 70.1% of non-Māori (Table 160), 64.5% of Māori compared to 72.9% of non-Māori in Canterbury DHB (Table 161), 62.3% of Māori compared to 72.2% of non-Māori in South Canterbury DHB (Table 162) and 62.7% of Māori compared to 75.9% of non-Māori in Southern DHB (Table 163).

Table 159 – Cervical cancer screening coverage, aged 25 to 69 years, Te Tauraki, December 2023

Up-to-date with screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
25 to 29 years	2,369	4,372	54.2	17,549	27,290	64.3
30 to 34 years	2,549	4,211	60.5	23,900	34,041	70.2
35 to 39 years	2,070	3,387	61.1	23,594	31,984	73.8
40 to 44 years	1,739	2,819	61.7	21,287	27,819	76.5
45 to 49 years	1,807	2,477	73.0	20,320	25,954	78.3
50 to 54 years	1,818	2,540	71.6	21,923	28,119	78.0
55 to 59 years	1,512	2,194	68.9	20,317	26,415	76.9
60 to 64 years	1,313	1,900	69.1	19,654	26,330	74.6
65 to 69 years	829	1,199	69.1	15,905	22,066	72.1
Total	16,006	25,099	63.8	184,449	250,017	73.8

Source: National Cervical Screening Programme Register, National Screening Unit, Te Whatu Ora.
Notes: Percentages are crude (not age-standardised).

Table 160 – Cervical cancer screening coverage, aged 25 to 69 years, West Coast DHB, December 2023

Up-to-date with screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
25 to 29 years	75	120	62.5	331	709	46.7
30 to 34 years	110	174	63.2	518	921	56.2
35 to 39 years	75	117	64.1	545	775	70.3
40 to 44 years	56	104	53.8	521	700	74.4
45 to 49 years	63	91	69.2	584	689	84.8
50 to 54 years	81	110	73.6	722	917	78.7
55 to 59 years	76	107	71.0	706	960	73.5
60 to 64 years	80	125	64.0	774	1,019	76.0
65 to 69 years	42	60	70.0	591	860	68.7
Total	658	1,007	65.3	5,292	7,549	70.1

Source: National Cervical Screening Programme Register, National Screening Unit, Te Whatu Ora.
Notes: Percentages are crude (not age-standardised).

Table 161 – Cervical cancer screening coverage, aged 25 to 69 years, Canterbury DHB, December 2023

Up-to-date with screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
25 to 29 years	1,372	2,396	57.3	10,194	16,372	62.3
30 to 34 years	1,495	2,428	61.6	14,169	20,304	69.8
35 to 39 years	1,178	1,882	62.6	13,932	18,782	74.2
40 to 44 years	953	1,518	62.8	12,515	16,698	74.9
45 to 49 years	1,009	1,373	73.5	11,750	15,230	77.2
50 to 54 years	966	1,398	69.1	12,773	16,546	77.2
55 to 59 years	792	1,155	68.6	11,336	14,944	75.9
60 to 64 years	663	952	69.6	10,636	14,471	73.5
65 to 69 years	427	625	68.3	8,650	11,966	72.3
Total	8,855	13,726	64.5	105,955	145,312	72.9

Source: National Cervical Screening Programme Register, National Screening Unit, Te Whatu Ora.
Notes: Percentages are crude (not age-standardised).

Table 162 – Cervical cancer screening coverage, aged 25 to 69 years, South Canterbury DHB, December 2023

Up-to-date with screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
25 to 29 years	102	155	65.8	859	1,350	63.6
30 to 34 years	100	209	47.8	1,224	1,822	67.2
35 to 39 years	95	176	54.0	1,176	1,645	71.5
40 to 44 years	88	156	56.4	1,092	1,443	75.7
45 to 49 years	90	127	70.9	1,135	1,450	78.3
50 to 54 years	107	146	73.3	1,263	1,700	74.3
55 to 59 years	81	124	65.3	1,329	1,781	74.6
60 to 64 years	83	108	76.9	1,345	1,815	74.1
65 to 69 years	54	84	64.3	1,074	1,535	70.0
Total	800	1,284	62.3	10,497	14,541	72.2

Source: National Cervical Screening Programme Register, National Screening Unit, Te Whatu Ora.
Notes: Percentages are crude (not age-standardised).

Table 163 – Cervical cancer screening coverage, aged 25 to 69 years, Southern DHB, December 2023

Up-to-date with screening by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
25 to 29 years	820	1,702	48.2	6,165	8,860	69.6
30 to 34 years	844	1,400	60.3	7,989	10,993	72.7
35 to 39 years	722	1,212	59.6	7,941	10,782	73.7
40 to 44 years	642	1,041	61.7	7,159	8,978	79.7
45 to 49 years	645	886	72.8	6,851	8,586	79.8
50 to 54 years	664	886	74.9	7,165	8,956	80.0
55 to 59 years	563	808	69.7	6,946	8,729	79.6
60 to 64 years	487	715	68.1	6,899	9,025	76.4
65 to 69 years	306	430	71.2	5,590	7,705	72.6
Total	5,693	9,081	62.7	62,705	82,614	75.9

Source: National Cervical Screening Programme Register, National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

For bowel cancer, 60.2% of the eligible Māori population in Te Tauraki as at June 2023 had been screened, compared to 64.8% of non-Māori (Table 164). Screening coverage was lower in the youngest age group (60 to 64 years) which is also the largest age group for Māori. Screening coverage for Māori was 55.4% in West Coast DHB (Table 165), 56.4% in Canterbury DHB (Table 166), 60.6% in South Canterbury DHB (Table 167) and 67.1% in Southern DHB (Table 168).

Table 164 – Bowel cancer screening participation, aged 60 to 74 years, Te Tauraki, June 2023

Participation by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
60 to 64 years	2,416	4,310	56.1	39,918	65,811	60.7
65 to 69 years	1,483	2,351	63.1	32,189	48,773	66.0
70 to 74 years	1,169	1,754	66.6	31,573	45,339	69.6
Total	5,068	8,415	60.2	103,680	159,923	64.8

Source: National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

Table 165 – Bowel cancer screening participation, aged 60 to 74 years, West Coast DHB, June 2023

Participation by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
60 to 64 years	164	302	54.3	1,563	2,876	54.3
65 to 69 years	75	133	56.4	1,356	2,312	58.7
70 to 74 years	59	103	57.3	1,440	2,234	64.5
Total	298	538	55.4	4,359	7,422	58.7

Source: National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

Table 166 – Bowel cancer screening participation, aged 60 to 74 years, Canterbury DHB, June 2023

Participation by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
60 to 64 years	1,183	2,274	52.00	21,382	36,215	59.0
65 to 69 years	769	1,296	59.3	17,362	27,250	63.7
70 to 74 years	614	978	62.8	17,888	26,494	67.5
Total	2,566	4,548	56.4	56,632	89,959	63.0

Source: National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

Table 167 – Bowel cancer screening participation, aged 60 to 74 years, South Canterbury DHB, June 2023

Participation by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
60 to 64 years	124	218	56.9	2,697	4,309	62.6
65 to 69 years	72	121	59.5	2,276	3,294	69.1
70 to 74 years	76	110	69.1	2,532	3,445	73.5
Total	272	449	60.6	7,505	11,048	67.9

Source: National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

Table 168 – Bowel cancer screening participation, aged 60 to 74 years, Southern DHB, June 2023

Participation by age group	Māori			non-Māori		
	No. screened	Eligible population	% screened	No. screened	Eligible population	% screened
60 to 64 years	945	1,516	62.3	14,276	22,411	63.7
65 to 69 years	567	801	70.8	11,195	15,917	70.3
70 to 74 years	420	563	74.6	9,713	13,166	73.8
Total	1,932	2,880	67.1	35,184	51,494	68.3

Source: National Screening Unit, Te Whatu Ora
Notes: Percentages are crude (not age-standardised).

4.3. Cancer diagnoses

Table 169 shows the most common types of cancer diagnosed in Te Tauraki between 2016 and 2020. For Māori in Te Tauraki, the most common types of cancer diagnosed were lung, breast, prostate and colorectal (bowel). Melanoma was the fourth leading cause of cancer in West Coast DHB (Table 170) and South Canterbury DHB (Table 172). However, because of the small population size of a single DHB, just one to two cancers from a particular cause can have a large impact on the ranking of leading causes. For this reason, local cancer data should be interpreted together with the leading types of cancer for Māori nationally. Nationally, the most common types of cancer diagnosed in Māori were lung, breast, prostate and colorectal (the same as for Te Tauraki as a whole).

Table 169 – Most common cancer registrations by site, all ages, Te Tauraki, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	144	215.2	(180.5, 254.9)	2,410	189.4	(179.3, 199.9)	1.14	(0.95, 1.36)
Breast	42	63.7	(45.5, 86.9)	648	60.7	(55.1, 66.7)	1.05	(0.76, 1.45)
Lung	26	35.0	(22.8, 52.0)	205	10.7	(9.1, 12.9)	**3.26**	**(2.14, 4.95)**
Colorectal	12	18.5	(9.5, 32.9)	369	22.8	(19.7, 26.4)	0.81	(0.45, 1.47)
Uterus	6	9.5	(3.3, 21.4)	110	8.7	(6.9, 11.1)	1.09	(0.46, 2.57)
Males								
All cancers	154	216.9	(183.2, 255.4)	2,890	202.3	(193.1, 212.0)	1.07	(0.91, 1.27)
Prostate	35	44.5	(30.9, 62.6)	889	56.5	(52.6, 60.8)	0.79	(0.56, 1.11)
Lung	25	31.7	(20.4, 47.7)	227	12.2	(10.4, 14.4)	**2.59**	**(1.69, 3.97)**
Colorectal	16	22.2	(12.5, 36.9)	395	26.4	(23.2, 30.0)	0.84	(0.50, 1.41)
Leukaemia	8	14.8	(6.2, 29.3)	99	9.4	(6.8, 12.7)	1.58	(0.73, 3.42)
Total								
All cancers	298	216.5	(192.0, 243.5)	5,300	195.1	(188.2, 202.1)	1.11	(0.98, 1.25)
Lung	51	33.4	(24.8, 44.3)	431	11.4	(10.2, 12.9)	**2.92**	**(2.17, 3.94)**
Breast	43	31.8	(22.8, 43.4)	653	30.9	(28.1, 33.9)	1.03	(0.75, 1.42)
Prostate	35	22.7	(15.8, 32.0)	889	27.6	(25.6, 29.7)	0.82	(0.59, 1.16)
Colorectal	29	20.4	(13.4, 29.8)	764	24.5	(22.3, 27.0)	0.83	(0.56, 1.23)

Source: New Zealand Cancer Registry, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 170 – Most common cancer registrations by site, all ages, West Coast DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	7	198.3	(72.6, 463.3)	81	173	(120.8, 245.4)	**1.15**	**(0.48, 2.73)**
Lung	2	45.1	(4.2, 243.2)	9	11.4	(4.6, 44.8)	3.96	(0.75, 21.0)
Breast	2	42.1	(4.0, 237.0)	17	44.1	(21.1, 90.1)	**0.95**	**(0.19, 4.78)**
Males								
All cancers	7	205	(69.8, 482.8)	114	189.2	(142.6, 252.8)	1.08	(0.45, 2.63)
Prostate	1	30.6	(1.8, 215.1)	29	43	(27.9, 77.7)	0.71	(0.13, 3.96)
Melanoma	1	33.6	(0.4, 235.8)	11	19.4	(6.4, 56.1)	1.73	(0.16, 18.25)
Colorectal	1	29.8	(0.8, 219.5)	16	29.1	(11.6, 69.4	1.02	(0.13, 8.16)
Leukaemia	1	61.4	(1.45, 306.4)	4	10.5	(0.5, 51.5)	5.84	(0.41, 83.99)
Total								
All cancers	14	204.7	(102.7, 373.4)	194	182.1	(146.1, 226.8)	1.12	(0.60, 2.10)
Lung	3	31	(5.0, 130.6)	23	15.3	(8.7, 32.7)	2.03	(0.53, 7.80)
Colorectal	2	23.8	(1.0, 129.3)	28	26.3	(13.4, 50.2)	0.9	(0.14, 6.02)
Breast	2	20.8	(2.0, 116.0)	17	21.6	(10.2, 44.2)	0.96	(0.19, 4.81)
Melanoma	1	19.5	(0.4, 122.9)	19	21.5	(9.5, 45.1)	0.91	(0.11, 7.64)

Source: New Zealand Cancer Registry, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 171 – Most common cancer registrations by site, all ages, Canterbury DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	79	232.5	(183.1, 291.5)	1,303	186.7	(173.5, 200.7)	1.25	(0.98, 1.58)
Breast	25	74.0	(47.4, 110.5)	361	60.6	(53.4, 68.8)	1.22	(0.80, 1.86)
Lung	14	38.5	(21.1, 65.5)	113	10.8	(8.6, 13.8)	**3.57**	**(2.04, 6.27)**
Colorectal	6	18.9	(7.0, 41.5)	184	21.0	(17.0, 25.9)	0.90	(0.40, 2.05)
Non-Hodgkin lymphoma	3	10.3	(2.4, 29.3)	44	5.6	(3.6, 8.6)	**1.85**	**(0.59, 5.82)**
Males								
All cancers	82	218.7	(173.1, 273.2)	1,521	202.1	(189.7, 215.4)	1.08	(0.86, 1.36)
Prostate	16	38.1	(21.6, 63.6)	446	53.6	(48.4, 59.5)	0.71	(0.43, 1.18)
Lung	14	34.3	(18.7, 58.8)	118	12.0	(9.7, 15.1)	**2.86**	**(1.63, 5.03)**
Colorectal	8	22.0	(9.4, 44.3)	187	23.9	(19.8, 28.8)	0.92	(0.45, 1.89)
Leukaemia	6	18.4	(6.2, 41.5)	57	10.1	(6.6, 14.7)	**1.83**	**(0.72, 4.65)**
Total								
All cancers	161	225.7	(191.5, 264.5)	2,825	193.4	(184.3, 202.9)	**1.17**	**(0.99, 1.38)**
Lung	28	36.3	(24.1, 52.9)	231	11.3	(9.7, 13.3)	**3.21**	**(2.15, 4.77)**
Breast	25	35.9	(23.0, 53.6)	364	30.9	(27.3, 35.1)	1.16	(0.76, 1.76)
Prostate	16	19.9	(11.3, 33.1)	446	25.9	(23.4, 28.8)	0.77	(0.46, 1.28)
Colorectal	15	20.4	(11.2, 34.6)	371	22.3	(19.5, 25.7)	0.91	(0.53, 1.57)

Source: New Zealand Cancer Registry, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 172 – Most common cancer registrations by site, all ages, South Canterbury DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	8	199.8	(82.4, 413.7)	178	192.3	(152.8, 241.4)	1.04	(0.49, 2.21)
Breast	2	50.5	(6.8, 198.2)	44	58.7	(37.9, 90.1)	0.86	(0.21, 3.48)
Lung	2	31.2	(2.4, 165.7)	16	13.6	(6.5, 32.8)	2.3	(0.42, 12.43)
Males								
All cancers	7	181	(71.8, 387.5)	213	194.2	(158.3, 238.7)	0.93	(0.43, 2.02)
Lung	2	44.3	(5.1, 189.1)	20	13.6	(7.6, 30.4)	3.26	(0.73, 14.54)
Total								
All cancers	16	188.2	(103.4, 318.8)	391	193.3	(166.0, 224.8)	0.97	(0.57, 1.67)
Lung	4	37.3	(9.0, 114.4)	36	13.5	(8.6, 23.4)	2.76	(0.90, 8.50)
Breast	2	26.2	(3.5, 101.0)	44	29.8	(19.3, 45.5)	0.88	(0.22, 3.53)
Colorectal	1	17.8	(0.8, 91.3)	60	24.9	(16.4, 38.4)	0.71	(0.12, 4.38)
Melanoma	1	14.6	(0.9, 82.0)	39	23.0	(13.8, 37.7)	0.63	(0.11, 3.58)

Source: New Zealand Cancer Registry, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 173 – Most common cancer registrations by site, all ages, Southern DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	49	195.1	(143.2, 260.8)	848	195.2	(177.8, 214.1)	1.00	(0.74, 1.35)
Breast	13	53.1	(27.9, 92.9)	226	62.9	(53.3, 74.1)	0.84	(0.47, 1.5)
Lung	9	29.6	(13.1, 60.3)	67	10.0	(7.3, 14.4)	**2.96**	**(1.41, 6.19)**
Colorectal	5	18.8	(5.7, 47.4)	145	26.3	(20.8, 33.3)	0.71	(0.28, 1.83)
Melanoma	2	10.1	(1.5, 35.5)	91	24.2	(18.1, 31.9)	0.42	(0.11, 1.57)
Males								
All cancers	58	218.8	(164.2, 286.8)	1,043	204.9	(189.5, 221.5)	1.07	(0.81, 1.41)
Prostate	17	58.3	(33.7, 96.1)	349	63.6	(56.6, 71.9)	0.92	(0.56, 1.50)
Lung	8	28.0	(11.8, 58.4)	75	11.4	(8.5, 15.8)	**2.46**	**(1.15, 5.26)**
Colorectal	6	21.6	(7.8, 49.8)	160	29.4	(24.1, 36.1)	0.73	(0.32, 1.69)
Pancreas	3	11.7	(2.3, 37.0)	23	3.9	(2.3, 7.4)	2.99	(0.85, 10.54)
Total								
All cancers	107	208	(169.3, 253.3)	1,891	199.3	(187.7, 211.7)	1.04	(0.85, 1.28)
Prostate	17	29.6	(17.2, 48.7)	349	31.2	(27.7, 35.3)	0.95	(0.58, 1.56)
Lung	17	28.9	(16.5, 47.9)	142	10.6	(8.6, 13.4)	**2.72**	**(1.60, 4.61)**
Breast	14	27.4	(14.5, 47.5)	228	32.1	(27.2, 37.7)	0.85	(0.48, 1.51)
Colorectal	11	20.4	(10.0, 37.8)	305	27.8	(23.9, 32.3)	0.73	(0.39, 1.37)

Source: New Zealand Cancer Registry, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

4.4. Cancer deaths

Table 174 shows the most common types of cancer deaths in Te Tauraki between 2016 and 2020. For Māori in Te Tauraki the most common causes of cancer deaths were lung, colorectal (bowel), liver and breast. Because of the small population size of a single DHB, just one to two deaths from a particular cancer can have a large impact on the ranking of leading causes. For this reason, local cancer deaths should be interpreted together with the leading types of cancer death for Māori nationally. Nationally, the most common types of cancer death in Māori were lung, colorectal, breast and pancreas.

Overall, in Te Tauraki, Māori were 1.3 times more likely than non-Māori to die from any type of cancer, including 2.4 times more likely to die from lung cancer and 3.6 times more likely to die from liver cancer. Māori in Canterbury DHB were 1.4 times more likely to die from cancer, 2.7 times more likely to die from lung cancer and 4.2 times more likely to die from liver cancer than non-Māori (Table 176). Māori in Southern DHB were 2.1 times more likely to die from lung cancer than non-Māori (Table 178).

Table 174 – Most common cancer deaths by site, all ages, Te Tauraki, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	43	60.3	(43.2, 82.5)	926	48.7	(44.4, 53.5)	1.24	(0.90, 1.71)
Lung	14	18.3	(9.9, 31.8)	154	7.7	(6.3, 9.5)	**2.39**	**(1.36, 4.22)**
Breast	6	9.6	(3.5, 21.4)	129	9.3	(7.3, 11.8)	1.03	(0.44, 2.40)
Colorectal	4	6.5	(1.8, 16.9)	136	6.4	(4.9, 8.3)	**1.02**	**(0.38, 2.74)**
Pancreas	2	2.7	(0.3, 11.1)	61	3.0	(2.1, 4.4)	0.9	(0.20, 3.96)
Males								
All cancers	54	71.4	(53.3, 94.2)	1,090	57.8	(53.4, 62.5)	1.24	(0.93, 1.64)
Lung	16	20.9	(12.0, 34.7)	171	8.9	(7.4, 10.8)	**2.36**	**(1.40, 3.96)**
Liver	7	8.6	(3.3, 19.1)	34	2.0	(1.3, 3.3)	**4.29**	**(1.83, 10.08)**
Colorectal	5	6.4	(1.8, 16.5)	159	8.8	(7.1, 10.9)	**0.73**	**(0.27, 1.93)**
Prostate	4	5.3	(1.6, 14.3)	145	5.3	(4.4, 6.7)	1.00	(0.38, 2.60)
Total								
All cancers	97	66.1	(53.3, 81.3)	2,016	52.8	(49.7, 56.1)	**1.25**	**(1.01, 1.55)**
Lung	30	19.7	(13.3, 28.5)	325	8.2	(7.2, 9.4)	**2.40**	**(1.64, 3.52)**
Colorectal	9	6.5	(2.9, 12.7)	295	7.5	(6.4, 8.9)	0.86	(0.43, 1.72)
Liver	9	5.7	(2.5, 11.4)	55	1.6	(1.1, 2.4)	**3.56**	**(1.67, 7.60)**
Breast	6	4.8	(1.7, 10.6)	130	4.8	(3.8, 6.1)	1.00	(0.43, 2.32)

Source: Mortality dataset, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Of the five-year period of data examined, cause of death data for 2019 is provisional and 2020 is preliminary; data for other years is considered complete, but subject to regular updates. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 175 – Most common cancer deaths by site, all ages, West Coast DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	2	38.6	(2.5, 235.2)	39	57.1	(34.1, 100.6)	0.68	(0.12, 3.71)
Males								
All cancers	3	68.5	(9.8, 276.1)	50	67.5	(42.9, 110.8)	1.01	(0.26, 4.0)
Total								
All cancers	4	54.2	(13.5, 165.7)	90	62.5	(45.0, 89.0)	0.87	(0.30, 2.53)
Lung	1	12.8	(0.5, 105.2)	17	11.5	(5.7, 28.7)	1.12	(0.16, 7.59)

Source: Mortality dataset, Ministry of Health.
Notes: Of the five-year period of data examined, cause of death data for 2019 is provisional and 2020 is preliminary; data for other years is considered complete, but subject to regular updates. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 176 – Most common cancer deaths by site, all ages, Canterbury DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	23	64.1	(39.9, 98.2)	485	46.6	(41.1, 53)	1.38	(0.89, 2.14)
Lung	8	20.2	(8.4, 42.0)	80	7.2	(5.5, 9.8)	**2.80**	**(1.31, 6.02)**
Breast	4	12.5	(3.3, 32.9)	72	9.4	(6.8, 13.0)	1.32	(0.46, 3.77)
Colorectal	2	4.7	(0.4, 20.7)	68	5.9	(4.0, 8.8)	0.79	(0.16, 4.01)
Pancreas	1	3.3	(0.1, 18.3)	30	2.6	(1.6, 4.7)	1.25	(0.18, 8.61)
Males								
All cancers	29	74.3	(49.6, 107.7)	570	56.6	(50.9, 63.1)	1.31	(0.90, 1.92)
Lung	9	22.4	(10.3, 43.7)	90	8.9	(6.9, 11.7)	**2.51**	**(1.26, 5.01)**
Liver	5	11.2	(3.4, 28.8)	17	1.8	(1.0, 3.7)	**6.25**	**(2.19, 17.81)**
Colorectal	2	6.2	(0.8, 22.5)	80	8.2	(6.1, 11.3)	0.75	(0.19, 3.01)
Prostate	2	5	(0.6, 19.9)	74	5.2	(4.0, 7.3)	0.95	(0.23, 3.88)
Total								
All cancers	52	69.7	(51.7, 92.2)	1,055	51.1	(47.1, 55.5)	**1.36**	**(1.02, 1.82)**
Lung	17	21.4	(12.4, 35.0)	170	8	(6.7, 9.7)	**2.68**	**(1.60, 4.47)**
Liver	5	6.6	(2.2, 16.0)	31	1.6	(0.9, 2.8)	**4.15**	**(1.53, 11.22)**
Breast	4	6.1	(1.6, 16.1)	73	4.9	(3.6, 6.7)	1.25	(0.44, 3.55)
Colorectal	4	5.4	(1.3, 14.9)	148	7.0	(5.5, 8.9)	0.77	(0.27, 2.23)

Source: Mortality dataset, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Of the five-year period of data examined, cause of death data for 2019 is provisional and 2020 is preliminary; data for other years is considered complete, but subject to regular updates. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 177 – Most common cancer deaths by site, all ages, South Canterbury DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	3	60.3	(10, 213.4)	77	57.1	(39.6, 84.3)	1.06	(0.29, 3.82)
Lung	1	24.9	(0.9, 158.3)	13	10.2	(4.3, 28.9)	2.44	(0.34, 17.35)
Males								
All cancers	4	74.6	(17.7, 230.5)	86	53.7	(39.8, 76.2)	1.39	(0.47, 4.15)
Lung	1	28.7	(1.8, 163.8)	13	7.9	(3.8, 24.1)	3.62	(0.61, 21.31)
Total								
All cancers	6	65.8	(23.5, 154.9)	163	55.1	(43.7, 70.7)	1.19	(0.51, 2.78)
Lung	3	26.5	(4.5, 99.0)	26	9.0	(5.2, 18.2)	2.95	(0.78, 11.10)

Source: Mortality dataset, Ministry of Health.
Notes: Of the five-year period of data examined, cause of death data for 2019 is provisional and 2020 is preliminary; data for other years is considered complete, but subject to regular updates. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 178 – Most common cancer deaths by site, all ages, Southern DHB, 2016 to 2020

Sex	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Females								
All cancers	16	57.4	(32.2, 96.5)	325	49.4	(41.9, 58.3)	1.16	(0.69, 1.97)
Lung	5	16	(4.8, 42.3)	54	7.8	(5.5, 11.7)	2.06	(0.78, 5.48)
Colorectal	2	7.3	(0.9, 30.1)	52	6.8	(4.5, 10.8)	1.08	(0.25, 4.54)
Breast	2	7.0	(0.7, 30.0)	42	8.6	(5.4, 13.6)	0.81	(0.18, 3.74)
Liver	1	4.2	(0.2, 25.5)	5	0.7	(0.2, 3.8)	5.96	(0.72, 49.63)
Males								
All cancers	18	65.6	(38.0, 106.9)	383	58.9	(51.5, 67.6)	1.11	(0.68, 1.83)
Lung	5	17.8	(5.5, 44.8)	58	8.4	(6.1, 12.2)	2.12	(0.82, 5.49)
Colorectal	2	6.8	(0.6, 29.3)	58	9.4	(6.6, 13.9)	0.72	(0.16, 3.32)
Prostate	2	5.1	(0.5, 25.5)	54	5.7	(4.1, 9.0)	0.89	(0.20, 4.07)
Pancreas	2	6.2	(0.43, 28.6)	21	3.4	(1.92, 6.8)	1.80	(0.33, 9.73)
Total								
All cancers	34	61.8	(42.2, 88.0)	709	53.6	(48.3, 59.6)	1.15	(0.80, 1.65)
Lung	10	17.0	(7.9, 33.1)	112	8	(6.3, 10.4)	**2.12**	**(1.07, 4.19)**
Colorectal	4	7.2	(1.8, 20.1)	110	8.1	(6.2, 10.7)	0.89	(0.31, 2.52)
Liver	3	5.0	(0.9, 17.0)	17	1.4	(0.8, 3.0)	3.57	(0.97, 13.12)
Pancreas	2	4.4	(0.6, 16.2)	42	3.3	(2.2, 5.3)	1.31	(0.34, 5.12)

Source: Mortality dataset, Ministry of Health.
Notes: Colorectal includes colon, rectum and rectosigmoid junction. Of the five-year period of data examined, cause of death data for 2019 is provisional and 2020 is preliminary; data for other years is considered complete, but subject to regular updates. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Oranga hinengaro
Mental health and addictions

5. Oranga hinengaro – Mental health and addictions

Mental health and substance use conditions, including anxiety and depression, alcohol use disorders, and schizophrenia, and related conditions such as traumatic brain injury, are all among the top ten contributors to overall health loss for Māori (Ministry of Health 2013). Māori are more likely to experience psychological distress and mental health and substance use conditions than non-Māori.

As was shown in Volume One, suicide was the fourth leading cause of potentially avoidable deaths for Māori between 2014 to 2018, and is a major contributor to the life expectancy gap between Māori and non-Māori non-Pacific (Walsh and Grey 2019). Māori experience poorer mental health care – they are less likely to receive pharmaceutical treatment in relation to need (Metcalfe, Beyene et al. 2018), and are more likely to be placed in seclusion (McLeod, King et al. 2017). Māori with mental health and substance use conditions also experience poorer physical health outcomes (Cunningham, Stanley et al. 2020), and experience higher levels of discrimination when accessing physical health services than non-Māori with mental health and substance use conditions (Cunningham, Imlach et al.).

Poor mental health is a consequence of many of the same drivers of other health inequities for Māori – racism, colonisation, intergenerational trauma, poverty, and cultural disconnection. The adverse effects of trauma may impact on mental, physical, social, emotional and spiritual wellbeing, and carry across generations (Krieger 2011). Violence and abuse are further downstream consequences of these causes, which contributes significantly to the higher rates of trauma for Māori. This includes physical and sexual violence, which over half of wāhine Māori experience during their lifetime (Fanslow, Robinson et al. 2010). A significantly higher proportion of Māori than non-Māori experience stress and difficulty in daily life, and experience social isolation (also considered as loneliness) and exclusion (Russell 2018). There is a strong positive relationship between individual mental wellbeing and whānau wellbeing for Māori.

Action to improve mental health cannot ignore the causes of distress in Māori lives, and just continue with more programmes to build “resilience” or provide treatment to cope with life stressors which could be removed by social policy changes. A whole-of-government approach to wellbeing to tackle social determinants and support prevention activities that impact on multiple outcomes for Māori is required (extending beyond mental health and addiction). Additional action is needed to address poverty, racism, and discrimination, and optimising the environment in the first 1,000 days. In the face of enormous harm to our communities from alcohol and other drug use, we need to act on international evidence for effective public health and legislative interventions. At the same time, work is needed to transform mental wellbeing services to meet the needs of Māori whānau.

5.1. Prevalence of mental health problems

The most reliable estimates of the prevalence of mental health problems come from the 2004 New Zealand Mental Health Survey Te Rau Hinengaro, which used a diagnostic interview tool to identify mental health conditions and addictions (Cunningham, Kvalsvig et al. 2018). This survey found that diagnosable mental disorders were present in half of Māori over their lifetime and nearly one third over the year prior to the survey (Baxter, Kingi et al. 2006). However, this is now 20 years old and out-of-date. The only recent estimates in NZ rely on self-report of doctor diagnosis (NZHS) or specialist health service contact (PRIMHD and NMDS) or medication dispensing. These sources will underestimate the prevalence of mental health conditions, as conditions which have not been diagnosed or for which specialist services or medication have not been received will not be identified (Cunningham, Kvalsvig et al. 2018). To understand the true burden of mental health needs for Māori, and assess whether the health care system is meeting these needs at each level, a new national population-based mental health prevalence survey is urgently required in NZ, designed and powered to answer key questions for Māori and using screening tools validated for Māori (Ellison-Loschmann L, Jeffreys M et al. 2024).

The NZHS uses the Kessler Psychological Distress Scale (K10) to assess survey participants' levels of psychological distress over the past month. The K10 is an internationally validated instrument for measuring psychological distress (specifically recent nervousness, restlessness, fatigue, and depression) in a population. Scores of 12 or more on the K10 are strongly correlated with having an anxiety or depressive disorder (Kessler, Barker et al. 2003), although it is increasingly recognised that it cannot be used to measure the need for mental health treatment in the population and that interpretation may vary by age group and between cultures (Blake, Farugia et al. 2023, Lehmann, Pilz et al. 2023).

Using collated data from the NZHS between 2017 and 2022, 17.6% of Māori respondents (≥15 years) in Te Tauraki had a K10 score of ≥12, indicating high or very high levels of psychological distress (Table 179). This was even higher for Māori women in Te Tauraki, 22.2% of whom experienced high/very high psychological distress. Māori in Te Tauraki were 1.7 times more likely than non-Māori to experience high/very high psychological distress. The prevalence of psychological distress for Māori was 2.0 times non-Māori in Canterbury DHB (Table 181).

Table 179 – Prevalence of high/very high psychological distress, aged 15 years and older, Te Tauraki, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	22.2	(15.0, 30.9)	12.3	(10.4, 14.4)	**1.92**	**(1.36, 2.72)**
Male	13.1	(8.6, 18.9)	9.7	(7.8, 12.0)	**1.44**	**(1.01, 2.05)**
Total	17.6	(13.6, 22.1)	11	(9.5, 12.6)	**1.70**	**(1.35, 2.14)**

Source: New Zealand Health Survey, Ministry of Health
Notes: Psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 180 – Prevalence of high/very high psychological distress, aged 15 years and older, West Coast DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	21.2*	(5.9, 46.6)	15.6	(8.5, 25.4)	1.31*	(0.34, 5.06)
Total	17.8*	(3.2, 46.2)	11.5	(5.8, 19.8)	1.40*	(0.60, 3.31)

Source: New Zealand Health Survey, Ministry of Health
Notes: Psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 181 – Prevalence of high/very high psychological distress, aged 15 years and older, Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	28	(17.1, 41.2)	13.2	(10.4, 16.5)	**2.54**	**(1.63, 3.96)**
Male	12.8*	(5.8, 23.6)	10	(7.4, 13.3)	1.43*	(0.79, 2.58)
Total	20.3	(13.8, 28.3)	11.6	(9.5, 14.0)	**1.98**	**(1.42, 2.76)**

Source: New Zealand Health Survey, Ministry of Health
Notes: Psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 182 – Prevalence of high/very high psychological distress, aged 15 years and older, South Canterbury, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Male	12.5*	(1.5, 39.0)	6.4*	(2.5, 13.2)	1.83*	(0.61, 5.44)
Total	8.4*	(2.6, 18.9)	9.4	(5.9, 14.0)	1.22*	(0.52, 2.84)

Source: New Zealand Health Survey, Ministry of Health
Notes: Psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 183 – Prevalence of high/very high psychological distress, aged 15 years and older, Southern DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	14.7	(8.0, 24.1)	11.4	(8.5, 14.8)	1.38	(0.83, 2.31)
Male	14.4	(7.7, 23.8)	9.8	(6.7, 13.7)	1.45	(0.81, 2.59)
Total	14.7	(10.2, 20.3)	10.5	(8.3, 13.1)	1.43	(1.00, 2.04)

Source: New Zealand Health Survey, Ministry of Health
Notes: Psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

The NZHS also asks participants whether they have ever been told by a doctor that they have depression or an anxiety disorder. Using collated data from the NZHS between 2017 and 2022, 26.0% of Māori respondents (≥15 years) in Te Tauraki reported they had been diagnosed with depression, and 20.9% with an anxiety disorder (Table 184). Māori in Canterbury DHB were 1.9 times more likely than non-Māori to have a diagnosed anxiety disorder and 1.7 times more likely than non-Māori to have diagnosed depression (Table 186).

Table 184 – Prevalence of diagnosed mental health conditions (self-reported), aged 15 years and older, Te Tauraki, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Diagnosed depression						
Female	33.5	(27.1, 40.3)	23.1	(21.1, 25.2)	**1.42**	**(1.17, 1.72)**
Male	19.0	(14.0, 24.9)	13.5	(11.7, 15.5)	**1.35**	**(1.06, 1.72)**
Total	26.0	(22.3, 30.0)	18.2	(16.9, 19.7)	**1.39**	**(1.21, 1.60)**
Diagnosed anxiety disorder						
Female	29.7	(22.3, 38.0)	18.2	(16.4, 20.2)	**1.58**	**(1.25, 2.00)**
Male	12.3	(8.2, 17.4)	8.8	(7.0, 10.9)	1.51	(0.99, 2.30)
Total	20.9	(16.7, 25.6)	13.4	(12.0, 15.0)	**1.56**	**(1.27, 1.92)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 185 – Prevalence of diagnosed mental health conditions (self-reported), aged 15 years and older, West Coast DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Diagnosed depression						
Female	44.3	(24.4, 65.6)	28.5	(17.8, 41.3)	1.59*	(0.84, 3.02)
Total	32.4*	(10.0, 63.1)	22.0	(15.8, 29.2)	1.38*	(0.73, 2.62)
Diagnosed anxiety disorder						
Female	33.3	(17.3, 52.8)	31.1	(19.7, 44.5)	1.04	(0.43, 2.55)
Total	28.6*	(8.0, 57.3)	26.1	(17.7 36.0)	1.05	(0.59, 1.88)

Source: New Zealand Health Survey, Ministry of Health.
Notes: An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 186 – Prevalence of diagnosed mental health conditions (self-reported), aged 15 years and older, Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Diagnosed depression						
Female	42.8	(33.8, 52.1)	24.2	(21.4, 27.1)	**1.74**	**(1.37, 2.21)**
Male	21.7	(12.8, 33.0)	13.3	(11.2, 15.7)	**1.60**	**(1.16, 2.23)**
Total	31.5	(25.0, 38.7)	18.6	(16.8, 20.6)	**1.68**	**(1.39, 2.02)**
Diagnosed anxiety disorder						
Female	39.3	(29.1, 50.2)	19.5	(17.0, 22.1)	**2.08**	**(1.59, 2.74)**
Male	11.2	(5.8, 19.0)	8.6	(5.8, 12.1)	1.66*	(0.85, 3.25)
Total	25.3	(19.0, 32.5)	13.9	(11.7, 16.4)	**1.94**	**(1.48, 2.53)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 187 – Prevalence of diagnosed mental health conditions (self-reported), aged 15 years and older, South Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Diagnosed depression						
Female	20.7*	(3.8, 51.7)	33.5	(27.6, 39.9)	0.88*	(0.41, 1.87)
Male	16.6*	(4.4, 38.4)	11.6	(7.5, 16.8)	1.28*	(0.48, 3.41)
Total	19.5	(12.8, 27.7)	21.6	(17.5, 26.0)	1.01	(0.62, 1.65)
Diagnosed anxiety disorder						
Female	14.2*	(1.6, 43.8)	20.9	(15.4, 27.5)	0.90*	(0.42, 1.94)
Male	15.8*	(2.7, 42.5)	9.8	(6.3, 14.4)	1.01*	(0.37, 2.76)
Total	14.5*	(6.5, 26.7)	15.2	(11.9, 19.1)	0.87	(0.54, 1.40)

Source: New Zealand Health Survey, Ministry of Health.
Notes: An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 188 – Prevalence of diagnosed mental health conditions (self-reported), aged 15 years and older, Southern DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Diagnosed depression						
Female	23.0	(14.7, 33.3)	19.8	(16.5, 23.5)	1.14	(0.79, 1.67)
Male	16.7	(9.4, 26.5)	13.7	(10.2, 17.9)	1.11	(0.66, 1.86)
Total	19.8	(14.2, 26.4)	16.7	(14.2, 19.4)	1.14	(0.83, 1.56)
Diagnosed anxiety disorder						
Female	18.2	(9.9, 29.4)	15.4	(12.4, 18.8)	1.21	(0.79, 1.87)
Male	14.0	(7.1, 23.9)	8.1	(5.9, 10.6)	1.56	(0.88, 2.77)
Total	16.3	(10.2, 24.0)	11.7	(9.9, 13.6)	1.33	(0.92, 1.92)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

5.2. Use of alcohol and drugs

Hazardous drinking is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others, and it is assessed using a standard international questionnaire (Babor, Higgins-Biddle et al. 2001). Using collated data from the NZHS between 2017 to 2022, 38.5% of Māori respondents (≥15 years) in Te Tauraki (47.1% of Māori men, 28.7% of Māori women) were found to have a hazardous drinking pattern during the last year (Table 189). This was 1.6 times higher than the rate of hazardous drinking among non-Māori respondents in Te Tauraki. The rate of hazardous drinking during the last year was 1.6 times higher for Māori compared to non-Māori in Canterbury DHB (Table 191) and 1.5 times higher for Māori compared to non-Māori in Southern DHB (Table 193).

Table 189 – Prevalence of hazardous drinking in past 12 months, aged 15 years and older, Te Tauraki, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	28.7	(21.8, 36.6)	16.2	(14.0, 18.5)	**1.79**	**(1.33, 2.42)**
Male	47.1	(39.7, 54.6)	30.8	(27.8, 34.1)	**1.48**	**(1.24, 1.78)**
Total	38.5	(33.4, 43.8)	23.6	(21.5, 25.8)	**1.58**	**(1.36, 1.84)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Hazardous drinking is a score of eight or more from the Alcohol Use Disorders Test (AUDIT) questionnaire. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 190 – Prevalence of hazardous drinking in past 12 months, aged 15 years and older, West Coast, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	21.5*	(7.9, 42.0)	9.2	(4.6, 16.0)	2.01	(0.47, 8.53)
Total	25.8	(14.2, 40.4)	15.7	(12.2, 19.6)	1.76	(0.73, 4.25)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Hazardous drinking is a score of eight or more from the Alcohol Use Disorders Test (AUDIT) questionnaire. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 191 – Prevalence of hazardous drinking in past 12 months, aged 15 years and older, Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	29.6	(19.6, 41.3)	14.5	(11.7, 17.6)	**2.08**	**(1.36, 3.16)**
Male	43.3	(32.5, 54.7)	28.1	(24.1, 32.3)	**1.44**	**(1.03, 2.02)**
Total	37.5	(30.0, 45.4)	21.4	(18.5, 24.5)	**1.64**	**(1.27, 2.13)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Hazardous drinking is a score of eight or more from the Alcohol Use Disorders Test (AUDIT) questionnaire. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 192 – Prevalence of hazardous drinking in past 12 months, aged 15 years and older, South Canterbury, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	8.9*	(0.4, 36.7)	13.7	(6.7, 24.0)	1.11*	(0.20, 6.03)
Male	51.5	(33.2, 69.6)	37.2	(29.0, 45.9)	1.26	(0.76, 2.06)
Total	39.0	(25.0, 54.5)	25.7	(19.6, 32.6)	1.23	(0.78, 1.93)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Hazardous drinking is a score of eight or more from the Alcohol Use Disorders Test (AUDIT) questionnaire. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 193 – Prevalence of hazardous drinking in past 12 months, aged 15 years and older, Southern DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	29.1	(16.9, 44.0)	19.9	(16.5, 23.7)	1.54	(0.94, 2.54)
Male	52.7	(39.1, 65.9)	34.9	(30.5, 39.6)	**1.53**	**(1.24, 1.88)**
Total	41.1	(31.3, 51.4)	27.4	(24.5, 30.5)	**1.52**	**(1.21, 1.90)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Hazardous drinking is a score of eight or more from the Alcohol Use Disorders Test (AUDIT) questionnaire. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Heavy episodic drinking, or "binge drinking" is associated with a higher risk of experiencing alcohol-related acute harm but also developing chronic health complications. Using collated data from the NZHS between 2017 to 2022, 36.4% of Māori respondents (≥15 years) in Te Tauraki were binge drinking at least monthly, 1.3 times higher than non-Māori respondents in Te Tauraki (Table 194). Furthermore, 20.6% of Māori reported binge drinking at least weekly, 1.4 times higher than non-Māori respondents. Māori in Southern DHB were 1.4 times as likely to binge drink at least monthly and 1.3 times likely to binge drink at least weekly (Table 198).

Table 194 – Prevalence of heavy episodic drinking in past 12 months, aged 15 years and older, Te Tauraki, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
At least weekly						
Female	11.4	(7.4, 16.6)	8	(6.6, 9.7)	1.50	(0.98, 2.30)
Male	28.2	(21.0, 36.3)	19.3	(17.1, 21.8)	**1.37**	**(1.03, 1.83)**
Total	20.6	(16.2, 25.7)	13.7	(12.3, 15.3)	**1.41**	**(1.11, 1.78)**
At least monthly						
Female	25.5	(19.4, 32.4)	18.2	(15.6, 21.1)	**1.44**	**(1.05, 1.97)**
Male	45.8	(38.1, 53.6)	33.9	(31.0, 37.0)	**1.30**	**(1.07, 1.57)**
Total	36.4	(31.2, 41.8)	26.2	(23.9, 28.5)	**1.34**	**(1.13, 1.60)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Heavy episodic drinking 'at least weekly' is defined as having six or more drinks on one occasion weekly. Heavy episodic drinking 'at least monthly' is defined as having six or more drinks on one occasion monthly. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 195 – Prevalence of heavy episodic drinking in past 12 months, aged 15 years and older, West Coast DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
At least weekly						
Total	9.8*	(2.7, 23.7)	10.5*	(4.4, 20.1)	1.61	(0.63, 4.12)
At least monthly						
Total	21.1*	(7.2, 42.7)	11.8	(8.1, 16.4)	2.07	(0.72, 6.00)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Heavy episodic drinking 'at least weekly' is defined as having six or more drinks on one occasion weekly. Heavy episodic drinking 'at least monthly' is defined as having six or more drinks on one occasion monthly. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 196 – Prevalence of heavy episodic drinking in past 12 months, aged 15 years and older, Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
At least weekly						
Female	12.2*	(5.2, 23.3)	7.3	(5.2, 9.9)	1.81*	(0.87, 3.78)
Male	22.6	(13.2, 34.7)	17.1	(14.3, 20.2)	1.27	(0.71, 2.29)
Total	19.0	(12.6, 26.8)	12.2	(10.4, 14.3)	1.41	(0.91, 2.19)
At least monthly						
Female	23.6	(13.3, 36.9)	15.5	(12.3, 19.2)	1.51	(0.88, 2.59)
Male	38.7	(30.1, 47.9)	30.7	(27.1, 34.6)	1.19	(0.83, 1.70)
Total	32.9	(25.8, 40.6)	23.2	(20.3, 26.4)	1.29	(0.95, 1.77)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Heavy episodic drinking 'at least weekly' is defined as having six or more drinks on one occasion weekly. Heavy episodic drinking 'at least monthly' is defined as having six or more drinks on one occasion monthly. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 197 – Prevalence of heavy episodic drinking in past 12 months, aged 15 years and older, South Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
At least weekly						
Female	13.4*	(0.7, 48.7)	6.8*	(3.0, 13.1)	2.66*	(0.49, 14.43)
Male	32.8	(16.4, 53.1)	27.8	(20.0, 36.7)	1.26*	(0.65, 2.43)
Total	29.4	(18.4, 42.4)	17.9	(12.5, 24.4)	1.42	(0.82, 2.46)
At least monthly						
Female	18.9*	(1.9, 55.8)	15.9	(8.2, 26.8)	1.81*	(0.54, 6.04)
Male	38.8	(20.2, 60.2)	43.5	(34.1, 53.2)	0.90*	(0.41, 1.96)
Total	36.7	(23.3, 51.8)	30.4	(23.3, 38.2)	1.04	(0.58, 1.85)

Source: New Zealand Health Survey, Ministry of Health.
Notes: Heavy episodic drinking 'at least weekly' is defined as having six or more drinks on one occasion weekly. Heavy episodic drinking 'at least monthly' is defined as having six or more drinks on one occasion monthly. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 198 – Prevalence of heavy episodic drinking in past 12 months, aged 15 years and older, Southern DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
At least weekly						
Female	11.5*	(5.4, 20.6)	10.1	(7.5, 13.2)	1.15	(0.66, 1.98)
Male	32.5	(21.9, 44.7)	22.1	(18.4, 26.2)	**1.44**	**(1.04, 2.00)**
Total	22.7	(15.9, 30.6)	16.1	(13.4, 19.1)	**1.34**	**(1.01, 1.78)**
At least monthly						
Female	28.1	(18.5, 39.4)	23.3	(18.4, 28.8)	1.27	(0.82, 1.96)
Male	55.6	(45.1, 65.7)	38.4	(33.8, 43.2)	**1.45**	**(1.18, 1.80)**
Total	41.6	(33.6, 50.0)	30.9	(27.7, 34.3)	**1.37**	**(1.09, 1.71)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Heavy episodic drinking 'at least weekly' is defined as having six or more drinks on one occasion weekly. Heavy episodic drinking 'at least monthly' is defined as having six or more drinks on one occasion monthly. An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Less data is available on the hazardous use of other drugs. Using collated data from the NZHS between 2017 to 2022, 34.0% of Māori respondents (≥15 years) in Te Tauraki reported they had used cannabis in the past 12 months, 2.0 times the rate for non-Māori (Table 199). In Canterbury DHB (Table 201), 35.0% of Māori reported they had used cannabis in the past 12 months – 2.1 times higher than non-Māori. In South Canterbury DHB (Table 202), 44.1% of Māori in reported they had used cannabis in the past 12 months – 2.5 times higher than non-Māori and in Southern DHB (Table 203), 32.1% of Māori reported they had used cannabis in the past 12 months – 1.7 times higher than non-Māori. However, these data do not tell us about harmful use.

Table 199 – Prevalence of cannabis use in past 12 months, aged 15 years and older, Te Tauraki, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	27.3	(20.7, 34.8)	14.6	(12.6, 16.7)	**2.02**	**(1.48, 2.75)**
Male	39.8	(32.5, 47.4)	21.1	(18.4, 24.1)	**1.95**	**(1.60, 2.39)**
Total	34.0	(29.2, 39.0)	17.9	(16.0, 20.0)	**1.98**	**(1.67, 2.34)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 200 – Prevalence of cannabis use in past 12 months, aged 15 years and older, West Coast DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	27.3*	(1.7, 76.8)	7.8*	(2.1, 19.1)	3.61*	(0.60, 21.67)
Total	24.6*	(2.4, 67.8)	11.0*	(5.3, 19.7)	2.46*	(0.87, 6.97)

Source: New Zealand Health Survey, Ministry of Health.
Notes: An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 201 – Prevalence of cannabis use in past 12 months, aged 15 years and older, Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	29.4	(19.4, 41.0)	14.7	(12.0, 17.8)	**2.29**	**(1.56, 3.35)**
Male	39.0	(28.7, 50.0)	20.7	(16.8, 25.0)	**2.05**	**(1.49, 2.82)**
Total	35.0	(29.3, 41.2)	17.8	(15.2, 20.6)	**2.14**	**(1.70, 2.69)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 202 – Prevalence of cannabis use in past 12 months, aged 15 years and older, South Canterbury DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	41.6	(18.0, 68.6)	14.3	(10.1, 19.4)	**2.88***	**(1.34, 6.15)**
Male	45.9	(27.8, 64.7)	22.2	(15.8, 29.9)	**2.27**	**(1.49, 3.46)**
Total	44.1	(32.8, 55.8)	17.9	(14.3, 22.0)	**2.51**	**(1.69, 3.73)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: An asterisk (*) shows a relative standard error between 30% to 100%. Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 203 – Prevalence of cannabis use in past 12 months, aged 15 years and older, Southern DHB, 2017 to 2022

	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	%	(95% CI)	%	(95% CI)		
Female	25.0	(14.6, 38.0)	14.9	(11.6, 18.9)	1.65	(0.95, 2.87)
Male	39.5	(27.0, 53.1)	22.6	(18.7, 26.9)	**1.74**	**(1.27, 2.38)**
Total	32.1	(24.1, 41.0)	18.8	(15.7, 22.3)	**1.69**	**(1.27, 2.26)**

Source: New Zealand Health Survey, Ministry of Health.
Notes: Percentages are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

5.3. Mental health and substance use-related hospitalisations

In addition to better measuring population mental health need through a prevalence survey, the health system needs to monitor and report measures which assess the full pathway of access to mental health care in NZ. This includes measuring access to diagnosis, referral and receipt of appropriate treatment and outcomes. Hospitalisations are one aspect of mental health care – most mental health care is provided in the community, as discussed later in this chapter.

Table 204 shows the hospitalisations for various mental health and substance use conditions in Te Tauraki between 2020 to 2023. These data show significantly higher rates of hospitalisations for most mental health conditions for Māori in Te Tauraki compared to non-Māori. Overall, Māori were 1.8 times more likely than non-Māori to be hospitalised for any type of mental or substance use disorder. Similar high rates of hospitalisation for Māori compared to non-Māori are seen for schizophrenia (3.4 times), mood disorder (1.3 times), substance/alcohol use (2.0 times) and stress-related anxiety (1.4 times)

Māori in West Coast DHB were 2.7 times more likely than non-Māori to be hospitalised for schizophrenia (Table 205). Māori in Canterbury DHB were 2.0 times more likely than non-Māori to be hospitalised for any type of mental or substance use disorder (Table 206). In South Canterbury DHB (Table 207), Māori were 1.5 times more likely than non-Māori to be hospitalised for any type of mental or substance use disorder and in Southern DHB (Table 208), Māori were 1.7 times more likely than non-Māori to be hospitalised for any type of mental or substance use disorder.

However, these data should be interpreted with caution. Diagnosis data in NZ tends to be more incomplete for mental health conditions than for other health conditions, and so mental health related hospitalisations may be underestimated (Cunningham, Kvalsvig et al. 2018).

Importantly, the hospitalisation data presented below do not tell us anything about appropriateness of care – for example, whether the level of hospital care received is sufficient/appropriate to meet Māori population needs, or whether ethnic differences in mental health hospitalisations reflect a failure to manage mental health conditions effectively for Māori in the community and primary care.

It is also important to bear in mind that the hospitalisations in Table 204 include emergency department (ED) stays of ≥3 hours (which may or may not progress to inpatient hospitalisation). ED stays of ≥3 hours may have a different profile (e.g. acute alcohol intoxication) to those people requiring an inpatient stay.

Table 204 – Hospitalisations for mental and substance use disorders, all ages, Te Tauraki, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
All mental disorders [1]								
Female	460	788.9	(716.8, 861.0)	2861	481.4	(463.8, 499.0)	**1.64**	**(1.49, 1.81)**
Male	464	743.8	(676.1, 811.5)	2370	361.4	(346.9, 375.9)	**2.06**	**(1.86, 2.27)**
Total	926	768.2	(718.7, 817.7)	5,251	421.4	(410.0, 432.8)	**1.82**	**(1.70, 1.95)**
Schizophrenia [2]								
Female	115	201.4	(164.6, 238.2)	382	54.9	(49.4, 60.4)	**3.67**	**(2.98, 4.52)**
Male	196	320.6	(275.8, 365.4)	539	96.9	(88.7, 105.1)	**3.31**	**(2.81, 3.89)**
Total	312	263.1	(233.9, 292.3)	924	76.7	(71.8, 81.6)	**3.43**	**(3.02, 3.90)**
Mood (affective) disorders including bipolar and depression [3]								
Female	84	136.1	(107.0, 165.2)	816	120	(111.8, 128.2)	1.13	(0.91, 1.42)
Male	64	108.5	(81.9, 135.1)	512	70.6	(64.5, 76.7)	**1.54**	**(1.19, 1.99)**
Total	149	122.8	(103.1, 142.5)	1332	95.3	(90.2, 100.4)	**1.29**	**(1.09, 1.53)**
Substance use and alcohol use [4]								
Female	88	156.6	(123.8, 189.4)	334	68.1	(60.8, 75.4)	**2.30**	**(1.82, 2.91)**
Male	106	170.1	(137.7, 202.5)	491	91.1	(83.0, 99.2)	**1.87**	**(1.51, 2.30)**
Total	193	163.5	(140.5, 186.5)	828	80	(74.5, 85.5)	**2.04**	**(1.75, 2.39)**
Stress-related and anxiety [5]								
Female	83	142.8	(112.1, 173.5)	499	105.4	(96.2, 114.6)	**1.36**	**(1.07, 1.71)**
Male	38	61.1	(41.7, 80.5)	238	40.4	(35.3, 45.5)	**1.51**	**(1.08, 2.13)**
Total	122	101.5	(83.5, 119.5)	738	72.1	(66.9, 77.3)	**1.41**	**(1.16, 1.71)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] F00 – F99; [2] F20 – F29; [3] F30 – F39, F31, F32; [4] F10 – F19; [5] F40 – F48. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 205 – Hospitalisations for mental and substance use disorders, all ages, West Coast DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
All mental disorders [1]								
Female	13	565.4	(261.9, 868.9)	90	628.9	(499.0, 758.8)	0.90	(0.51, 1.60)
Male	15	690.7	(341.2, 1040.2)	81	431.1	(337.0, 525.2)	1.60	(0.93, 2.77)
Total	28	631.9	(399.2, 864.6)	171	519.4	(441.5, 597.3)	1.22	(0.82, 1.81)
Schizophrenia [2]								
Female	2	77.4	(0.0, 184.7)	8	30.4	(9.4, 51.4)	2.55	(0.54, 12.00)
Male	5	228.4	(21.2, 435.6)	14	83.9	(40.4, 127.4)	2.72	(0.96, 7.73)
Total	7	153.0	(36.9, 269.1)	22	56.6	(33.1, 80.1)	**2.70**	**(1.14, 6.41)**
Mood (affective) disorders including bipolar and depression [3]								
Female	5	225.5	(34.2, 416.8)	28	238.0	(149.3, 326.7)	0.95	(0.38, 2.39)
Male	1	73.2	(0.0, 197.5)	25	167.5	(101.4, 233.6)	0.44	(0.08, 2.49)
Total	7	149.4	(36.0, 262.8)	52	197.2	(143.8, 250.6)	0.76	(0.34, 1.70)
Substance use and alcohol use [4]								
Female	3	129.7	(0.0, 276.5)	10	78.8	(30.7, 126.9)	1.65	(0.46, 5.95)
Male	3	147.7	(0.0, 306.3)	11	73.1	(29.9, 116.3)	2.02	(0.59, 6.88)
Total	6	140.0	(31.0, 249.0)	21	75.1	(43.2, 107.0)	1.86	(0.77, 4.52)
Stress-related and anxiety [5]								
Female	2	73.1	(0.0, 184.1)	17	131.4	(68.9, 193.9)	0.56	(0.11, 2.73)
Male	3	129.5	(0.0, 276.0)	9	59.9	(20.0, 99.8)	2.16	(0.58, 8.03)
Total	5	102.0	(9.4, 194.6)	26	95.1	(58.3, 131.9)	1.07	(0.40, 2.87)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] F00 – F99; [2] F20 – F29; [3] F30 – F39, F31, F32; [4] F10 – F19; [5] F40 – F48. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 206 – Hospitalisations for mental and substance use disorders, all ages, Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
All mental disorders [1]								
Female	241	765.1	(668.4, 861.8)	1531	438.5	(416.5, 460.5)	**1.74**	**(1.52, 2.00)**
Male	248	725.7	(635.4, 816.0)	1323	331.5	(313.6, 349.4)	2.19	(1.91, 2.51)
Total	490	746.9	(680.8, 813.0)	2861	383.1	(369.1, 397.1)	**1.95**	**(1.77, 2.14)**
Schizophrenia [2]								
Female	68	221.9	(169.2, 274.6)	178	47.1	(40.2, 54.0)	**4.71**	**(3.56, 6.23)**
Male	105	310.8	(251.4, 370.2)	298	94.3	(83.6, 105.0)	**3.29**	**(2.64, 4.11)**
Total	173	268.2	(228.3, 308.1)	478	71.6	(65.2, 78.0)	**3.75**	**(3.15, 4.46)**
Mood (affective) disorders including bipolar and depression [3]								
Female	50	148.4	(107.1, 189.7)	538	133.2	(121.9, 144.5)	1.11	(0.83, 1.49)
Male	36	111.8	(75.3, 148.3)	321	69.5	(61.9, 77.1)	**1.61**	**(1.14, 2.27)**
Total	86	130.4	(102.9, 157.9)	860	100.9	(94.2, 107.6)	**1.29**	**(1.04, 1.61)**
Substance use and alcohol use [4]								
Female	44	149.9	(105.8, 194.0)	166	53.4	(45.3, 61.5)	**2.81**	**(2.01, 3.91)**
Male	62	180.2	(135.5, 224.9)	288	84.7	(74.9, 94.5)	**2.13**	**(1.62, 2.80)**
Total	107	165.7	(134.3, 197.1)	456	69.3	(62.9, 75.7)	**2.39**	**(1.94, 2.95)**
Stress-related and anxiety [5]								
Female	39	126.4	(86.9, 165.9)	229	89.0	(77.5, 100.5)	**1.42**	**(1.01, 1.99)**
Male	15	47.1	(23.5, 70.7)	116	30.2	(24.7, 35.7)	1.56	(0.91, 2.65)
Total	55	85.9	(63.2, 108.6)	345	58.5	(52.3, 64.7)	**1.47**	**(1.11, 1.95)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] F00 – F99; [2] F20 – F29; [3] F30 – F39, F31, F32; [4] F10 – F19; [5] F40 – F48. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 207 – Hospitalisations for mental and substance use disorders, all ages, South Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
All mental disorders [1]								
Female	26	830.3	(509.1, 1151.5)	176	537.9	(458.3, 617.5)	**1.54**	**(1.02, 2.33)**
Male	23	680.2	(402.2, 958.2)	163	465.8	(394.2, 537.4)	1.46	(0.95, 2.26)
Total	49	758.5	(545.4, 971.6)	341	508.8	(454.8, 562.8)	**1.49**	**(1.11, 2.01)**
Schizophrenia [2]								
Female	148	256	(214.8, 297.2)	174	61.5	(52.4, 70.6)	**4.16**	**(3.46, 4.86)**
Male	189	385.2	(330.3, 440.1)	254	94.9	(83.2, 106.6)	**4.06**	**(3.46, 4.66)**
Total	337	317.9	(284.0, 351.8)	429	78.5	(71.1, 85.9)	**4.05**	**(3.55, 4.55)**
Mood (affective) disorders including bipolar and depression [3]								
Female	7	187.4	(45.1, 329.7)	48	133.5	(95.6, 171.4)	1.40	(0.62, 3.16)
Male	2	60.7	(0.0, 144.9)	33	135.8	(89.7, 181.9)	0.45	(0.11, 1.86)
Total	9	124.4	(41.6, 207.2)	82	137.5	(107.7, 167.3)	0.91	(0.45, 1.82)
Substance use and alcohol use [4]								
Female	11	394.7	(164.9, 624.5)	15	60.3	(30.1, 90.5)	**6.54**	**(3.04, 14.09)**
Male	7	198.7	(47.9, 349.5)	30	116.0	(74.5, 157.5)	**1.71**	**(0.74, 3.96)**
Total	18	296.6	(159.6, 433.6)	46	91.2	(64.8, 117.6)	**3.25**	**(1.89, 5.61)**
Stress-related and anxiety [5]								
Female	4	135.4	(2.8, 268.0)	22	79.4	(46.2, 112.6)	1.70	(0.59, 4.94)
Total	5	88.9	(13.5, 164.3)	37	55.9	(37.9, 73.9)	1.59	(0.64, 3.94)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] F00 – F99; [2] F20 – F29; [3] F30 – F39, F31, F32; [4] F10 – F19; [5] F40 – F48. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 208 – Hospitalisations for mental and substance use disorders, all ages, Southern DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
All mental disorders [1]								
Female	180	844	(720.7, 967.3)	1065	540.9	(508.4, 573.4)	**1.56**	**(1.33, 1.83)**
Male	178	785.8	(670.2, 901.4)	804	398.0	(370.5, 425.5)	**1.97**	**(1.68, 2.32)**
Total	359	816.6	(732.1, 901.1)	1878	472.3	(450.9, 493.7)	**1.73**	**(1.55, 1.93)**
Schizophrenia [2]								
Female	148	256	(214.8, 297.2)	174	61.5	(52.4, 70.6)	**4.16**	**(3.46, 4.86)**
Male	189	385.2	(330.3, 440.1)	254	94.9	(83.2, 106.6)	**4.06**	**(3.46, 4.66)**
Total	337	317.9	(284.0, 351.8)	429	78.5	(71.1, 85.9)	**4.05**	**(3.55, 4.55)**
Mood (affective) disorders including bipolar and depression [3]								
Female	22	103.1	(60.4, 145.8)	203	89.1	(76.8, 101.4)	1.16	(0.75, 1.79)
Male	25	113	(68.4, 157.6)	133	58.2	(48.3, 68.1)	**1.94**	**(1.26, 2.98)**
Total	47	108.9	(77.9, 139.9)	338	74.6	(66.6, 82.6)	**1.46**	**(1.08, 1.98)**
Substance use and alcohol use [4]								
Female	29	134.9	(85.8, 184.0)	142	93.3	(78.0, 108.6)	**1.45**	(0.97, 2.16)
Male	33	152	(100.4, 203.6)	161	101.5	(85.8, 117.2)	**1.5**	**(1.03, 2.17)**
Total	62	143	(107.5, 178.5)	305	97.8	(86.8, 108.8)	**1.46**	**(1.11, 1.92)**
Stress-related and anxiety [5]								
Female	38	174.8	(119.2, 230.4)	232	135.6	(118.1, 153.1)	1.29	(0.92, 1.82)
Male	18	79.4	(43.0, 115.8)	98	57.1	(45.8, 68.4)	1.39	(0.84, 2.29)
Total	57	127.3	(94.2, 160.4)	331	96.4	(86.0, 106.8)	1.32	(1.00, 1.75)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: [1] F00 – F99; [2] F20 – F29; [3] F30 – F39, F31, F32; [4] F10 – F19; [5] F40 – F48. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Between 2020 and 2023, an average of 152 Māori per year were hospitalised for traumatic brain injury in Te Tauraki (Table 209). There were no statistically significant differences in the rates of traumatic brain injury hospitalisation between Māori and non-Māori across the DHBs.

Table 209 – Hospitalisations for traumatic brain injury, all ages, Te Tauraki, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	58	101.0	(75.1, 126.9)	440	69.5	(63.0, 76.0)	1.45	(0.75, 2.15)
Male	93	153.7	(122.5, 184.9)	625	120.4	(111.0, 129.8)	1.28	(0.58, 1.98)
Total	152	128.3	(107.9, 148.7)	1,066	95.7	(90.0, 101.4)	1.34	(0.74, 1.94)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: S06. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 210 – Hospitalisations for traumatic brain injury, all ages, West Coast DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	3	110.2	(0.0, 242.4)	19	119.9	(66.0, 173.8)	0.92	(0.00, 2.52)
Male	5	273.4	(41.4, 505.4)	22	178.8	(104.6, 253.0)	1.53	(0.13, 2.93)
Total	8	197.3	(60.6, 334.0)	41	151.4	(105.2, 197.6)	1.30	(0.10, 2.50)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: S06. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 211 – Hospitalisations for traumatic brain injury, all ages, Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	21	71.5	(40.9, 102.1)	168	43.2	(36.7, 49.7)	1.66	(0.76, 2.56)
Male	37	111.1	(75.3, 146.9)	242	82.7	(72.3, 93.1)	1.34	(0.54, 2.14)
Total	58	92.2	(68.5, 115.9)	410	63.5	(57.4, 69.6)	1.45	(0.75, 2.15)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: S06. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 212 – Hospitalisations for traumatic brain injury, all ages, South Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	4	130.2	(0.0, 263.4)	39	95.4	(65.3, 125.5)	1.36	(0.00, 2.76)
Male	5	157.6	(19.5, 295.7)	44	144.3	(101.7, 186.9)	1.09	(0.00, 2.39)
Total	9	144.3	(48.2, 240.4)	83	121.5	(95.3, 147.7)	1.19	(0.00, 2.39)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: S06. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 213 – Hospitalisations for traumatic brain injury, all ages, Southern DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	31	137.9	(89.4, 186.4)	214	106.3	(92.1, 120.5)	1.30	(0.40, 2.20)
Male	46	208.9	(148.3, 269.5)	316	178.5	(158.8, 198.2)	1.17	(0.37, 1.97)
Total	77	174.1	(135.1, 213.1)	532	142.9	(130.8, 155.0)	1.22	(0.52, 1.92)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 code: S06. These data include ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Between 2020 and 2023, Māori in Te Tauraki (aged 15 to 44 years) were 1.5 times more likely than non-Māori to be hospitalised for intentional self-harm (Table 214). An average of 233 Māori per year were hospitalised for intentional self-harm in Te Tauraki (164 women and 69 men). Māori in Canterbury DHB (Table 216) were 1.6 times more likely than non-Māori to be hospitalised for intentional self-harm and Māori in Southern DHB (Table 218) were 1.4 times more likely than non-Māori to be hospitalised for intentional self-harm.

Table 214 – Hospitalisations for intentional self-harm, aged 15 to 44 years, Te Tauraki, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	164	661.9	(560.6, 763.2)	732	466.5	(432.7, 500.3)	**1.42**	**(1.20, 1.68)**
Male	69	255.2	(195.1, 315.3)	259	147.2	(129.3, 165.1)	**1.73**	**(1.33, 2.26)**
Total	233	451.3	(393.4, 509.2)	991	301.9	(283.1, 320.7)	**1.49**	**(1.30, 1.72)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: S00-T98 and X60-X84, Y870. These data include readmissions within two days and ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 215 – Hospitalisations for intentional self-harm, aged 15 to 44 years, West Coast DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	4	570.4	(33.3, 1,107.5)	28	835.6	(526.1, 1,145.1)	0.68	(0.25, 1.88)
Male	4	491.2	(9.9, 972.5)	7	166.4	(40.1, 292.7)	2.95	(0.86, 10.19)
Total	8	506.3	(162.6, 850.0)	35	480.1	(320.3, 639.9)	1.05	(0.50, 2.24)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: S00-T98 and X60-X84, Y870. These data include readmissions within two days and ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 216 – Hospitalisations for intentional self-harm, aged 15 to 44 years, Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	68	521.0	(397.2, 644.8)	318	347.1	(309.0, 385.2)	**1.50**	**(1.16, 1.95)**
Male	25	172.0	(104.6, 239.4)	106	99.9	(80.9, 118.9)	**1.72**	**(1.11, 2.66)**
Total	93	340.7	(271.5, 409.9)	424	217.7	(197.0, 238.4)	**1.56**	**(1.25, 1.96)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: S00-T98 and X60-X84, Y870. These data include readmissions within two days and ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 217 – Hospitalisations for intentional self-harm, aged 15 to 44 years, South Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	10	667.9	(246.8, 1,089.0)	25	382.3	(233.4, 531.2)	1.75	(0.83, 3.66)
Male	2	111.7	(0.0, 281.2)	14	157.5	(74.0, 241.0)	0.71	(0.14, 3.54)
Total	11	384.5	(160.6, 608.4)	39	257.1	(176.4, 337.8)	1.50	(0.77, 2.90)

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: S00-T98 and X60-X84, Y870. These data include readmissions within two days and ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 218 – Hospitalisations for intentional self-harm, aged 15 to 44 years, Southern DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	82	873.2	(684.2, 1,062.2)	360	651.3	(584.0, 718.6)	**1.34**	**(1.06, 1.70)**
Male	39	381.6	(261.3, 501.9)	133	229.4	(190.4, 268.4)	**1.66**	**(1.16, 2.38)**
Total	121	618.2	(507.9, 728.5)	493	441.8	(402.8, 480.8)	**1.40**	**(1.15, 1.71)**

Source: NMDS, Te Whatu Ora.
Notes: ICD-10 codes: S00-T98 and X60-X84, Y870. These data include readmissions within two days and ED stays ≥3 hours. Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

5.4. Access to mental health care

The majority of care for mental health and substance use conditions is provided in primary and community care, through specialist services for more severe conditions (provided by health sector and non-government providers), and through primary care services for mild to moderate conditions. Ideally, data analysis is needed that allows us to understand what is happening for Māori in terms of mental health care across the continuum of care. Further analysis of data provided by specialist services into the PRIMHD data collection and of data provided by newly funded services for mild to moderate mental health conditions under the Access and Choice initiative (which included funding for community based Kaupapa Māori providers) will provide a fuller picture of service provision.

In terms of access to outpatient services for mental health, Table 219 shows the number of young people (<25 years) referred to mental health services who are seen within three weeks of referral. In 2022, these data show that 80.4% of Māori in Te Tauraki who were referred to mental health services were seen within three weeks, and Māori were 1.2 times more likely than non-Māori referrals to be seen within three weeks. This was similar in Canterbury DHB (Table 221), Māori young people were 1.3 times as likely as non-Māori to be seen within three weeks of referral.

However, these data do not tell us anything about whether Māori who needed a referral actually received one. It is also not possible to assess from the data below whether Māori were more likely to be referred (and seen) for mental health care than non-Māori in Te Tauraki which would be appropriate given all other evidence of higher Māori mental health need.

Table 219 – People under 25 years old seen by mental health services within three weeks of referral, Te Tauraki, 2018 to 2022

Year	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Number	%		
2018	623	70.6	2,605	69.4	1.02	(0.97, 1.07)
2019	498	66.00	1,945	63.4	1.04	(0.98, 1.10)
2020	552	73.6	1,938	66.8	**1.10**	**(1.05, 1.16)**
2021	647	75.2	2,214	66.7	**1.13**	**(1.08, 1.18)**
2022	621	80.4	1,913	69.4	**1.16**	**(1.11, 1.21)**

Source: Health Quality & Safety Commission: Health System Indicators Framework sourced from PRIMHD.
Notes: Numerator: number of new clients aged under 25 seen within 3 weeks. Denominator: total new clients aged under 25.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 220 – People under 25 years old seen by mental health services within three weeks of referral, West Coast DHB, 2018 to 2022

Year	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Number	%		
2018	41	80.4	136	75.6	1.06	(0.91, 1.25)
2019	40	69.0	126	74.1	0.93	(0.77, 1.13)
2020	23	65.7	86	61	1.08	(0.82, 1.42)
2021	43	89.6	122	83	1.08	(0.96, 1.22)
2022	41	82.0	126	82.4	1.00	(0.86, 1.16)

Source: Health Quality & Safety Commission: Health System Indicators Framework sourced from PRIMHD.
Notes: Numerator: number of new clients aged under 25 seen within 3 weeks. Denominator: total new clients aged under 25.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 221 – People under 25 years old seen by mental health services within three weeks of referral, Canterbury DHB, 2018 to 2022

Year	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Number	%		
2018	332	69.7	1,272	65.7	1.06	(0.99, 1.13)
2019	321	68.3	1,178	64.0	1.07	(1.00, 1.15)
2020	302	71.6	878	60.4	**1.18**	**(1.10, 1.27)**
2021	351	71.3	999	61.7	**1.16**	**(1.08, 1.24)**
2022	399	87.1	931	71.1	**1.22**	**(1.17, 1.29)**

Source: Health Quality & Safety Commission: Health System Indicators Framework sourced from PRIMHD.
Notes: Numerator: number of new clients aged under 25 seen within 3 weeks. Denominator: total new clients aged under 25.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 222 – People under 25 years old seen by mental health services within three weeks of referral, South Canterbury DHB, 2018 to 2022

Year	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Number	%		
2018	35	81.4	213	75.0	1.09	(0.93, 1.27)
2019	47	85.5	208	76.5	1.12	(0.98, 1.27)
2020	19	67.9	122	67.0	1.01	(0.77, 1.33)
2021	28	68.3	143	68.1	1.00	(0.80, 1.26)
2022	29	74.4	149	58.2	**1.28**	**(1.03, 1.58)**

Source: Health Quality & Safety Commission: Health System Indicators Framework sourced from PRIMHD.
Notes: Numerator: number of new clients aged under 25 seen within 3 weeks. Denominator: total new clients aged under 25.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 223 – People under 25 years old seen by mental health services within three weeks of referral, Southern DHB, 2018 to 2022

Year	Māori		non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Number	%		
2018	215	68.9	984	72.6	0.95	(0.88, 1.03)
2019	90	52.6	433	55.1	0.96	(0.82, 1.12)
2020	208	78.5	852	75.6	1.04	(0.97, 1.11)
2021	225	80.6	950	70.6	**1.14**	**(1.07, 1.22)**
2022	152	67.6	707	68.2	0.99	(0.90, 1.09)

Source: Health Quality & Safety Commission: Health System Indicators Framework sourced from PRIMHD.
Notes: Numerator: number of new clients aged under 25 seen within 3 weeks. Denominator: total new clients aged under 25.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

One measure of provision of mental health care which includes primary care is the prescription of medications. Selective serotonin reuptake inhibitors (SSRIs) are the most commonly prescribed antidepressant medication. Table 224 shows the number of people (≥15 years) who regularly received an SSRI or other reuptake inhibitor. In 2022, 5,639 Māori in Te Tauraki (1,785 men and 3,854 women) were regularly receiving one of these antidepressant medications – which equated to 7.3% of the Māori population aged 15 years and over. Despite all the other evidence suggesting a higher prevalence of depression among Māori in Te Tauraki than non-Māori, Māori were only 0.9 times as likely as non-Māori to receive regular medication. Receipt of regular anti-depressant medication was lower for Māori across all DHBs – 0.8 times in West Coast DHB (Table 225), 0.9 times in Canterbury DHB (Table 226) and 0.8 times in South Canterbury DHB (Table 227) and Southern DHB (Table 228).

Medication is not the only treatment for depression, but this large ethnic difference in the rate of receiving antidepressant medication raises questions about access to and receipt of appropriate depression treatment for Māori in Te Tauraki. As noted above, further information about need-for and receipt-of the range of services for mental health care is needed to provide a more complete picture of the way in which need-for-care is being met for Māori in Te Tauraki.

Table 224 – People regularly dispensed an SSRI or other reuptake inhibitor, aged 15 years and older, Te Tauraki, 2022

	Māori				non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Age-standardised rate per 100,000 (95% CI)			
Female	3,854	10.1	9,823	(9,504, 10,149)	11,191	(11,071, 11,311)	**0.88**	**(0.85, 0.91)**
Male	1,785	4.5	4,387	(4,179, 4,603)	5,201	(5,123, 5,280)	**0.84**	**(0.80, 0.89)**
Total	5,639	7.3	7,053	(6,863, 7,246)	8,151	(8,080, 8,222)	**0.87**	**(0.84, 0.89)**

Source: Pharmaceutical Collection, PHO enrolments.
Notes: SSRIs and other reuptake inhibiters are typically used as anti-depressant medications. Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 225 – People regularly dispensed an SSRI or other reuptake inhibitor, aged 15 years and older, West Coast DHB, 2022

	Māori				non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Age-standardised rate per 100,000 (95% CI)			
Female	141	9.5	8,965	(7,369, 10,774)	10,776	(10,050, 11,531)	0.83	(0.68, 1.01)
Male	62	4.3	3,835	(2,842, 5,035)	4,406	(3,964, 4,873)	0.87	(0.65, 1.17)
Total	203	7.0	6,363	(5,423, 7,406)	7,540	(7,118, 7,975)	**0.84**	**(0.72, 0.99)**

Source: Pharmaceutical Collection, PHO enrolments.
Notes: SSRIs and other reuptake inhibiters are typically used as anti-depressant medications. Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 226 – People regularly dispensed an SSRI or other reuptake inhibitor, aged 15 years and older, Canterbury DHB, 2022

	Māori				non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Age-standardised rate per 100,000 (95% CI)			
Female	2,285	11.2	10,853	(10,399, 11,320)	11,674	(11,514, 11,834)	**0.93**	**(0.89, 0.97)**
Male	1,081	5.0	4,800	(4,509, 5,104)	5,461	(5,358, 5,566)	**0.88**	**(0.82, 0.94)**
Total	3,366	8.0	7,732	(7,465, 8,006)	8,509	(8,416, 8,604)	**0.91**	**(0.88, 0.94)**

Source: Pharmaceutical Collection, PHO enrolments.
Notes: SSRIs and other reuptake inhibiters are typically used as anti-depressant medications. Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 227 – People regularly dispensed an SSRI or other reuptake inhibitor, aged 15 years and older, South Canterbury DHB, 2022

	Māori				non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Age-standardised rate per 100,000 (95% CI)			
Female	182	8.9	8,880	(7,566, 10,346)	11,825	(11,262, 12,403)	**0.75**	**(0.64, 0.88)**
Male	83	4.1	3,888	(3,053, 4,872)	5,453	(5,112, 5,808)	**0.71**	**(0.56, 0.90)**
Total	265	6.5	6,380	(5,595, 7,240)	8,467	(8,149, 8,791)	**0.75**	**(0.66, 0.86)**

Source: Pharmaceutical Collection, PHO enrolments.
Notes: SSRIs and other reuptake inhibiters are typically used as anti-depressant medications. Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 228 – People regularly dispensed an SSRI or other reuptake inhibitor, aged 15 years and older, Southern DHB, 2022

	Māori				non-Māori		Māori/non-Māori rate ratio (95% CI)	
	Number	%	Age-standardised rate per 100,000 (95% CI)		Age-standardised rate per 100,000 (95% CI)			
Female	1,246	8.9	8,581	(8,092, 9,090)	10,306	(10,109, 10,505)	**0.83**	**(0.78, 0.88)**
Male	559	3.9	3,869	(3,544, 4,216)	4,781	(4,650, 4,914)	**0.81**	**(0.74, 0.89)**
Total	1,805	6.4	6,208	(5,915, 6,512)	7,526	(7,408, 7,645)	**0.82**	**(0.78, 0.87)**

Source: Pharmaceutical Collection, PHO enrolments.
Notes: SSRIs and other reuptake inhibiters are typically used as anti-depressant medications. Percentages are crude. Rates are age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Ko ētahi atu tohu pūnaha
Other system indicators

6. Ko ētahi atu tohu pūnaha – Other system indicators

6.1. Access to outpatient care

In terms of access to specialist outpatient appointments, Māori in Te Tauraki are much more likely to have a missed first specialist appointment than non-Māori (Table 229). In 2023, 8.5% of first specialist medical appointments and 14.0% of first surgical appointments for Māori were missed. This contrasts to only 3.8% of medical and 5.5% of surgical first specialist appointments missed for non-Māori in Te Tauraki. This adds further delays for Māori in accessing the operations and medical treatment they require and contributes to poorer health outcomes.

Table 229 – Missed First Specialist Appointments by service type, Te Tauraki, 2018 to 2023

Service Type and Year	Māori			non-Māori			Māori/non-Māori rate ratio (CI)	
	Number	%	(CI)	Number	%	(CI)		
Medical								
2018	569	12.9	(11.9, 13.9)	2,242	4.6	(4.4, 4.8)	**2.80**	**(2.53, 3.11)**
2019	564	12.4	(11.5, 13.4)	2,000	4.4	(4.2, 4.6)	**2.82**	**(2.54, 3.13)**
2020	386	10.1	(9.2, 11.2)	1,451	3.8	(3.6, 4.0)	**2.66**	**(2.37, 2.98)**
2021	366	9.1	(8.2, 10.0)	1,432	3.4	(3.3, 3.6)	**2.68**	**(2.37, 3.02)**
2022	431	10.4	(9.5, 11.4)	1,622	4.1	(3.9, 4.3)	**2.54**	**(2.27, 2.83)**
2023	416	8.5	(7.8, 9.3)	1,641	3.8	(3.6, 4.0)	**2.24**	**(1.99, 2.52)**
Surgical								
2018	920	15.3	(14.5, 16.3)	3,845	6.0	(5.8, 6.1)	**2.55**	**(2.33, 2.79)**
2019	914	14.5	(13.6, 15.4)	3,773	5.9	(5.7, 6.0)	**2.46**	**(2.24, 2.69)**
2020	704	11.9	(11.1, 12.7)	2,857	4.9	(4.8, 5.1)	**2.43**	**(2.19, 2.69)**
2021	771	13.1	(12.2, 14.0)	2,852	4.8	(4.6, 5.0)	**2.73**	**(2.47, 3.02)**
2022	763	13.1	(12.3, 14.0)	3,062	5.8	(5.6, 6.0)	**2.26**	**(2.06, 2.48)**
2023	884	14.0	(13.2, 14.9)	3,073	5.5	(5.3, 5.7)	**2.55**	**(2.32, 2.80)**

Source: National Non-Admitted Patient Collection (NNPAC), Whakamaua Dashboard.
Notes: Denominator: all First Specialist Appointments. First Specialist Appointments are a patient's first visit to a specialist for advice about a health condition after referral from a GP of other health professional. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Missing a first specialist appointment was significantly more common for Māori compared to non-Māori, in every age group (Table 230). Missing a first specialist appointment was highest for Māori aged 20 to 39 years, indicating that more needs to be done to identify and remove barriers for accessing appointments for Māori in this age group. In Te Tauraki in 2023, 16.8% of Māori aged 20 to 29 years, and 18.7% aged 30 to 39 years, missed their first specialist appointment.

Table 230 – Missed First Specialist Appointments by age group, Te Tauraki, 2023

Age Group	Māori			non-Māori			Māori/non-Māori rate ratio (CI)	
	Number	%	(CI)	Number	%	(CI)		
0 to 9 years	274	12.9	(11.5, 14.4)	636	7.4	(6.8, 7.9)	**1.74**	**(1.60, 1.90)**
10 to 19 years	143	13.8	(11.8, 16.1)	362	7.5	(6.8, 8.2)	**1.84**	**(1.69, 2.00)**
20 to 29 years	214	16.8	(14.9, 19.0)	628	9.6	(8.9, 10.3)	**1.75**	**(1.62, 1.88)**
30 to 39 years	245	18.7	(16.6, 20.9)	765	8.2	(7.7, 8.8)	**2.28**	**(2.11, 2.46)**
40 to 49 years	144	11.8	(10.1, 13.8)	530	5.7	(5.3, 6.2)	**2.07**	**(1.88, 2.28)**
50 to 59 years	137	9.1	(7.7, 10.6)	559	4.2	(3.9, 4.5)	**2.17**	**(1.94, 2.42)**
60 to 69 years	86	5.5	(4.4, 6.7)	508	2.7	(2.5, 3.0)	**2.04**	**(1.76, 2.35)**
70 to 79 years	41	4.7	(3.5, 6.3)	400	2.2	(2.0, 2.4)	**2.14**	**(1.83, 2.50)**
80 to 89 years	16	5.4	(3.4, 8.6)	328	3.1	(2.8, 3.4)	**1.74**	**(1.52, 2.00)**

Source: National Non-Admitted Patient Collection (NNPAC), Whakamaua Dashboard.
Notes: Denominator: all First Specialist Appointments. First Specialist Appointments are a patient's first visit to a specialist for advice about a health condition after referral from a GP of other health professional. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

6.2. Hospitalisations: all-cause and potentially avoidable

In terms of hospitalisations for any cause, Māori in Te Tauraki have slightly higher rates of hospitalisation than non-Māori. Between 2020 and 2023, there were an average of 20,762 Māori hospital admissions each year, 1.1 times the rate of non-Māori in Te Tauraki (Table 231). A similar pattern is seen across all the DHBs with Māori in Canterbury DHB (Table 233) and Southern DHB (Table 235) being 1.1 times more likely to be hospitalised for any cause.

Table 231 – Hospitalisations for all-causes, all ages, Te Tauraki, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	11,926	20,769	(20,397, 21,142)	100,317	18,553	(18,438, 18,668)	**1.12**	**(1.10, 1.14)**
Male	8,801	14,688	(14,381, 14,995)	80,326	13,840	(13,744, 13,936)	**1.06**	**(1.04, 1.08)**
Total	20,762	17,663	(17,423, 17,903)	180,951	16,129	(16,055, 16,204)	**1.10**	**(1.08, 1.11)**

Source: NMDS, Te Whatu Ora.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 232 – Hospitalisations for all-causes, all ages, West Coast DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	566	24,903	(22,851, 26,955)	4,213	23,604	(22,891, 24,317)	1.06	(0.98, 1.14)
Male	419	17,805	(16,101, 19,510)	4,081	17,872	(17,323, 18,420)	1.00	(0.91, 1.09)
Total	985	21,303	(19,973, 22,634)	8,294	20,765	(20,318, 21,212)	1.03	(0.97, 1.09)

Source: NMDS, Te Whatu Ora.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 233 – Hospitalisations for all-causes, all ages, Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	6,412	20,869	(20,358, 21,379)	54,030	18,059	(17,907, 18,212)	**1.16**	**(1.13, 1.18)**
Male	4,720	14,612	(14,195, 15,029)	41,566	13,066	(12,940, 13,191)	**1.12**	**(1.09, 1.15)**
Total	11,150	17,639	(17,312, 17,967)	95,779	15,477	(15,379, 15,575)	**1.14**	**(1.12, 1.16)**

Source: NMDS, Te Whatu Ora.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 234 – Hospitalisations for all-causes, all ages, South Canterbury DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	729	22,750	(21,099, 24,402)	8,254	23,040	(22,543, 23,537)	0.99	(0.92, 1.05)
Male	463	13,790	(12,533, 15,046)	6,680	15,849	(15,469, 16,229)	**0.87**	**(0.80, 0.95)**
Total	1,194	18,185	(17,154, 19,217)	14,963	19,167	(18,860, 19,474)	0.95	(0.90, 1.00)

Source: NMDS, Te Whatu Ora.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 235 – Hospitalisations for all-causes, all ages, Southern DHB, July 2020 to June 2023

	Māori			Non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	4,219	19,913	(19,312, 20,514)	33,820	18,276	(18,082, 18,471)	**1.09**	**(1.06, 1.12)**
Male	3,199	14,574	(14,069, 15,080)	28,000	14,482	(14,313, 14,652)	1.01	(0.97, 1.04)
Total	7,433	17,226	(16,835, 17,618)	61,914	16,349	(16,220, 16,478)	**1.05**	**(1.03, 1.08)**

Source: NMDS, Te Whatu Ora.
Notes: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Potentially avoidable hospitalisations are those admissions which could have been prevented by primary care, public health, or social policy interventions. Among 15 to 24 year olds, Māori were 1.2 times more likely than non-Māori to be hospitalised for a potentially avoidable cause (see Appendix for the list of conditions considered potentially avoidable). Between July 2022 to June 2023, 697 Māori aged 15 to 24 years in Te Tauraki had a potentially avoidable hospital admission (Table 236). Māori aged 15 to 24 years living in Canterbury DHB were 1.2 times as likely to have a potentially avoidable hospitalisation than non-Māori (Table 238).

Table 236 – Potentially avoidable hospitalisations, aged 15 to 24 years, Te Tauraki, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	697	3,300	(3,055, 3,545)	3,201	2,813	(2,716, 2,910)	**1.17**	**(1.08, 1.27)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 237 – Potentially avoidable hospitalisations, aged 15 to 24 years, West Coast DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	41	6,436	(4,466, 8,407)	116	4,796	(3,923, 5,669)	1.34	(0.95, 1.90)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 238 – Potentially avoidable hospitalisations, aged 15 to 24 years, Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	240	2,164	(1,890, 2,437)	1,234	1,863	(1,759, 1,967)	**1.16**	**(1.01, 1.33)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 239 – Potentially avoidable hospitalisations, aged 15 to 24 years, South Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	46	3,936	(2,799, 5,074)	229	4,612	(4,014, 5,209)	0.85	(0.63, 1.16)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 240 – Potentially avoidable hospitalisations, aged 15 to 24 years, Southern DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	370	4,487	(4,030, 4,944)	1,622	4,061	(3,863, 4,259)	1.10	(0.99, 1.23)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Ambulatory sensitive hospitalisations are those admissions which could have been potentially avoided through interventions in primary care. In adults aged 45 to 64 years, between July 2022 to June 2023 in Te Tauraki, 856 Māori had an ambulatory sensitive admission, 1.7 times higher than the rate for non-Māori in Te Tauraki (Table 241). Māori in Canterbury DHB (Table 243) were 1.9 times as likely to have an ambulatory sensitive admission as non-Māori and Māori in Southern DHB (Table 245) were 1.6 times as likely to have an ambulatory sensitive admission as non-Māori.

Table 241 – Ambulatory sensitive hospitalisations, aged 45 to 64 years, Te Tauraki, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	856	3,912	(3,650, 4,174)	6,075	2,303	(2,245, 2,361)	**1.70**	**(1.58, 1.82)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 242 – Ambulatory sensitive hospitalisations, aged 45 to 64 years, West Coast DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	52	5,372	(3,912, 6,832)	383	4,284	(3,855, 4,713)	1.25	(0.95, 1.66)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 243 – Ambulatory sensitive hospitalisations, aged 45 to 64 years, Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	419	3,476	(3,143, 3,808)	2,747	1,818	(1,750, 1,886)	**1.91**	**(1.73, 2.12)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 244 – Ambulatory sensitive hospitalisations, aged 45 to 64 years, South Canterbury DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	53	4,277	(3,125, 5,428)	617	3,770	(3,473, 4,068)	1.13	(0.86, 1.49)

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Table 245 – Ambulatory sensitive hospitalisations, aged 45 to 64 years, Southern DHB, July 2022 to June 2023

	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Number	Age-standardised rate per 100,000 (95% CI)		Number	Age-standardised rate per 100,000 (95% CI)			
Total	332	4,368	(3,898, 4,838)	2,328	2,670	(2,562, 2,779)	**1.64**	**(1.46, 1.83)**

Source: NMDS, Ministry of Health.
Note: Age-standardised to the 2001 Māori Census Population. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Ngā āpitihanga
Appendices

Appendix 1 – Technical notes

1. Explanation of statistical terms used in this report

95% confidence interval

Technical definition

A 95% confidence interval represents a range from a lower to an upper value that is likely to include the true average figure for the entire population. It suggests that if a similar sample of the total population was taken 100 times, the true value would be found within this range 95 times. This confidence interval can vary in size: a larger number of survey responses or participants, typically results in a narrower range, indicating more precise estimates, while a smaller number of responses may result in a broader range, indicating less certainty about the exact figure.

Plain English definition

When a health study gives a number, like how many people feel healthy, it's often not just one number but a range. This range is what's called a 95% confidence interval. It's like a safety net that says, 'We think the real number is in here.' And if we did the study over and over, 95 times out of 100, we'd get a number in this range. The more people we include in our sample, the smaller and more accurate this net becomes. So, if we ask only a few people, the net is wide, and we're less sure. If we ask a lot of people, the net gets tighter, and we're more sure we've got the right number.

Example from the report

In a survey assessing health status among residents of Te Moana a Toi[10] (see table below), 13.0% of the sampled Māori population considered their health to be 'Excellent'. However, this percentage is an estimate from a sample of people in Te Moana a Toi, not the entire population. The 95% confidence interval, shown in brackets as “(9.8,16.2)”, indicates that there is a 95% probability that the actual percentage of all Māori residents who would rate their health as 'Excellent' falls within this range. If this survey were to be conducted 100 times with different sample groups, it is expected that 95 of those surveys would yield a true percentage that falls between 9.8% and 16.2%.

Table 6 - Health status reported by Māori aged 15 years and over, Te Moana a Toi, 2018

Health Status	Te Moana a Toi			Aotearoa		
	%	(95% CI)		%	(95% CI)	
Excellent	13.0	(9.8,	16.2)	15.1	(14.0,	16.2)
Very Good	40.2	(35.6,	44.9)	36.9	(35.4,	38.3)
Good	30.1	(25.3,	35.0)	30.3	(29.0,	31.7)
Fair/poor	16.6	(12.9,	20.3)	17.7	(16.6,	18.8)

[10] The example tables in this technical appendix are all taken from the Te Moana a Toi IMPB profile Volume One and are presented purely as an example to facilitate understanding across all IMPB data profiles.

Age standardisation

Technical definition

Age-standardisation is a statistical method used to compare rates of events across different populations by adjusting for age differences in the two groups. This method is particularly useful when comparing health outcomes between groups like Māori and non-Māori, where there are significant differences in age distribution; for example only 8% of Māori are aged 65 and over in Te Moana a Toi compared with 26% of non-Māori (see the table below).

Because of these age differences, comparing crude rates (actual observed rates) can be misleading. By applying the age-specific rates from the populations being compared to a standard population, age-standardised rates provide a clearer comparison as if the populations had the same age distribution. Almost all data in this report has been age-standardised to the 2001 Māori population. Where crude rates are presented instead, this is noted beneath the table.

Table 2 – Population estimate by age group, Te Moana a Toi, 2023

Age group (years)	Māori			non-Māori		Total IMPB number
	Number	Age distribution	% of IMPB	Number	Age distribution	
0–14	20,255	30%		30,670	15%	50,925
15–24	12,285	18%		16,810	8%	29,095
25–44	16,465	24%		50,870	25%	67,335
45–64	13,030	19%		52,935	26%	65,965
65+	5,575	8%		51,760	26%	57,335
Total	**68,000**	**100%**	**25%**	**202,740**	**100%**	**270,740**

Plain English definition

Age-standardisation is a method used to compare health between two groups fairly. It adjusts the numbers to consider how young or old the people in each group are. This way, when looking at health data, it is more likely that any differences between the groups are not just because one has more young people or more old people. It helps give a more accurate picture of health when comparing two groups with a different spread of ages.

Example from the report

The table below shows an age-standardised rate of 28.4 per 100,000 per year ischaemic heart disease events among Bay of Plenty DHB Māori women between 2014 and 2018. Without age standardisation calculations, crude rates would be lower than 28.4 among Māori women. The lower rate would be simply because a larger proportion of the Māori population is younger and ischaemic heart disease is more frequent in older people.

Table 6 - Leading causes of death for Māori, all ages, Bay of Plenty DHB, 2014 to 2018

Cause	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female								
Ischaemic heart disease	19	28.4	(16.2, 45.5)	98	8.3	(6.2, 10.9)	**3.40**	**(1.95, 5.93)**

Rate ratios

Technical definition

Rate ratios, often referred to as relative risks, are a measure of the relationship between the occurrence of a certain event in two different groups, typically standardised for age (see section on age standardisation above) to allow fair comparison. It is the result of the rate of the event in the first group (for example, Māori) divided by the rate in the second group (non-Māori), which serves as the reference group. A rate ratio of 1 indicates parity between groups, above 1 indicates a higher rate in the first group, and below 1 indicates a lower rate. In general, the data presented in this report uses Māori as the first group and compares it with non-Māori as the second group.

Plain English definition

A rate ratio compares how common something, like a disease, is between two different groups of people, like Māori and non-Māori. If the ratio is exactly 1, both groups are equally affected. If it's higher than 1, it means that the first group, in this case Māori, has the event happen more often. If it's lower, Māori have it happen less often. It tells us the relative disparity between two groups.

Example from the report

In the table below, the rate ratio for ischemic heart disease is 3.40. This tells us that Māori females are more than three times as likely to suffer from this condition compared to non-Māori females after considering the age distribution in each group.

The 95% confidence interval (see section on confidence intervals above) of 1.95 to 5.93 for this rate ratio indicates that we are very sure that the true rate ratio is significantly different from 1, indicating a genuine disparity in risk between the two populations. In this report, a statistically significant difference between groups is evident when the confidence interval for the rate ratio does not cross 1. These results are shown in **bold** type.

Table 6 - Leading causes of death for Māori, all ages, Bay of Plenty DHB, 2014 to 2018

Cause	Māori			non-Māori			Māori/non-Māori rate ratio (95% CI)	
	Av. no. per year	Age-standardised rate per 100,000 (95% CI)		Av. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female								
Ischaemic heart disease	19	28.4	(16.2, 45.5)	98	8.3	(6.2, 10.9)	**3.40**	**(1.95, 5.93)**

2. Key methods and quality limitations of key data sources

This section describes in more detail the specific methods used, and key limitations of, each of the main data sources used in this report.

Methods

Numerators

Data in this second volume of IMPB profiles are sourced from Te Whatu Ora, Manatū Hauora (the Ministry of Health), and Statistics New Zealand (StatsNZ). Where administrative data (e.g. national mortality data) are used, the most recent year range with complete, verified data has been chosen. Different data sources go through different processes of verification and for some data (e.g. deaths) there is a longer delay to make sure that all deaths have been accurately recorded with the correct cause. For events that are not common (such as deaths or hospitalisations for specific causes), three to five-years' worth of data have been analysed together, to provide a better chance of detecting statistically significant differences between groups. Census data were taken from the 2018 Census, which is the most recent Census with data released for use.

Denominators

StatsNZ mid-year (at 30 June) estimated resident population was used as denominator data in the calculation of population rates for deaths, hospitalisations, immunisation, screening, and most health service utilisation. For smoking, the denominator is the people for whom there is a response from the census dataset for the question asked ('people stated'). In the NZHS data, the denominator is the number of respondents from whom data is available for the particular question.

Ethnicity data

Ethnicity data quality

Although high quality ethnicity data are critical for Māori health improvement, ethnicity data quality in the health sector remains poor (Harris, Paine et al. 2022). It is the responsibility of the entire health system to collect, record and report ethnicity data in the ways set out in the HISO 10001:2017 Ethnicity Data Protocols (Ministry of Health 2017). Despite the protocols being in existence for nearly 20 years, there is evidence that they are not being adhered to and Māori have continued to be systematically undercounted (Cormack D and McLeod M 2010, Harris, Paine et al. 2022). Self-identified ethnicity recorded on the Census is considered to be the "gold-standard" for ethnicity data, so this is used as the denominator for most variables in this report.

To understand what impact the ethnicity data quality is likely to have, on the accuracy of the results presented in this report, we need to consider the ethnicity data quality in both the numerator and the denominator. For some measures, it may underestimate the true number of, or rate of, a particular outcome for Māori. The potential impact of ethnicity data weaknesses is discussed for each data source later in this Appendix.

Ethnicity classification

When analysing data, there are different ways to classify people who report multiple ethnicities. The two main ways are *total response (overlapping) output* and *prioritised output.* In total response output, each respondent is counted in each of the ethnic groups they reported. So, individuals who indicate more than one ethnic group are counted more than once, and the sum of the ethnic group populations will exceed the total population of NZ. For example, using total response classification, a death from lung cancer in an individual who identifies as Māori and New Zealand European, will be reported as a lung cancer death for both ethnicities.

In prioritised output, each respondent is allocated to a single ethnic group using a prioritisation order, with Māori first, to ensure that ethnic groups of policy importance or of small size, are not swamped by the New Zealand European ethnic group. Under this method, a person is classified as Māori if any one of their recorded ethnicities are Māori. For example, using prioritised classification, a death from lung cancer in a person recorded as both Māori and New Zealand European, would be counted as a lung cancer death for Māori, and not in non-Māori.

In this report wherever possible, prioritised ethnicity classification was used when people identified with more than one ethnic group.

Comparison group

Indicators compare Māori with non-Māori. Non-Māori includes all people who do not identify as Māori and represent a comparative or reference group. This is a common approach to measuring Māori health equity. Paine et al. (Paine, Cormack et al. 2020) note that, “the use of Māori/non-Māori analyses acknowledged the fundamental nature of our relationship with the Crown affirmed in Te Tiriti o Waitangi“ (p193). Additionally, a Māori/non-Māori analysis is often the more straightforward practically in the context of data quality and statistical power limitations and provides a non-overlapping comparison group. The limitations of this approach relate to difficulty in conceptualising non-Māori as a group which includes a number of different ethnic groups. Also, Māori/non-Māori comparisons will often underestimate inequities between Māori and NZ European in part because of the inclusion of Pacific in the non-Māori group (who more often have similar health and socioeconomic experiences to Māori).

Age-standardised and crude rates

This report uses direct age-standardisation; most rates (unless noted otherwise) are standardised to the 2001 Census Māori population. Where data were not available with sufficient age group breakdown to allow age standardisation, or data for a specific age were presented, crude rates were calculated. In this case, caution should be taken when comparing Māori with non-Māori results. Crude rates accurately portray a situation in each population, but make comparisons difficult, because they do not consider the different age distributions in each of the populations (e.g. the Māori population is much younger than the non-Māori population). Rates were not calculated for counts fewer than five in data from national collections.

Confidence intervals

This report has endeavoured where possible to provide local data specific to IMPBs and their relevant DHB areas. Some of these areas have small populations. As the size of the group becomes smaller, the confidence interval (CI) becomes wider, and there is less certainty about the rate. This means the degree of confidence and certainty about the numbers diminishes for rohe (regions) with smaller populations. Thinking of the data as 'indicative' rather than precise is important in these rohe, as well as considering Māori-specific regional and national data, which will have greater certainty around rates, because of the larger sample size.

When the CIs of two groups do not overlap, the difference in rates between the groups is considered statistically significant. Sometimes, even when there are overlapping CIs, the difference between the groups may be statistically significant. Determining that would require further statistical testing which has not been undertaken for this report.

Rate ratios

Age-standardised rate ratios are used in this report to compare age-standardised rates between Māori and non-Māori. The rate ratio (RR) is equal to the age-standardised Māori rate divided by the age-standardised non-Māori rate. The non-Māori population is used as the reference population. For example, an age-standardised RR of 1.5 means that the rate is 50 percent higher (or 1.5 times as high) in Māori than in non-Māori, after taking into account the different age structures of these two populations. This report gives rate ratios and their 95 percent CIs. In this profile, if the CI of the rate ratio does not include the number 1, the ratio is said to be statistically significant. Differences presented in this profile in **bold** are statistically significant.

Geographical alignment between IMPB and DHB areas

This report has endeavoured to report data specific to each IMPB health planning area and has used several slightly different methods to do this in different chapters of the report.

Since Volume One of the IMPB profiles was published in late 2023, we have refined the method for estimating IMPB population estimates. Volume Two of the IMPB profiles uses more recent population estimates for IMPB health areas (undertaken by Manatū Hauora in February 2024). There will be some differences in the new IMPB population estimates from those presented in Volume One of the profiles, related to the different allocation of SA2 geographies (including how "emerging" IMPB health areas are assigned), different population download dates, and more recent year of source data for SA2 identification.

For most measures, the IMPB population has been calculated using the sum of the main DHBs it contains. So, for example IMPB mortality data for Te Taumata Hauora o Te Kahu o Taonui will include all of Northland, Auckland and Waitematā DHBs, even though that includes communities such as Ōtāhuhu which are not part of the IMPB.

For data on missed First Specialist Appointments and diabetes complications, the population for an IMPB has been calculated using geographies (SA2 areas or Territorial Authority/Local Boards) that are smaller than the previous DHB districts, to be able to better align with the IMPB health planning areas. This means the Te Taura Ora o Waiariki and Tūwharetoa IMPBs have been able to be split out separately, and Ōtāhuhu has been included as part of Ngaa Pou Hauora oo Taamaki Makaurau, rather than Te Taumata Hauora o Te Kahu o Taonui (historically Ōtāhuhu was part of Auckland DHB rather than Counties Manukau DHB, so the Auckland Council Local Board Māngere-Ōtāhuhu spanned the boundary between the DHBs)[11]. In some cases, for example at the Nelson-Marlborough/Te Tauraki border, the IMPB health planning area did not align completely with SA2 areas.

[11] Ōtāhuhu has a population of approximately 16,000 people, the majority of whom identify as Pacific and Asian (Indian). The area is classified as NZDep2018 deciles 9&10 – the most socio-economically challenged areas.

Additionally, births data for Te Taura Ora o Waiariki and Tūwharetoa IMPBs is presented using both approaches – the DHB level data (from the Ministry of Health source which is more accurate for Māori, but unable to be reported by smaller areas) and Territorial Authority level data for Rotorua and Taupo separately (using the births registration database, which undercounts Māori babies more than the Ministry of Health data).

Data sources

Births, maternity care, breastfeeding and newborn primary care enrolment

Data on births, maternity care, breastfeeding and newborn primary care enrolment come from the National Maternity Collection. This is collated by the Ministry of Health from data supplied by districts, Lead Maternity Carers and other claimants from the Primary Maternity Services Notice. In addition, the Well Child Tamariki Ora (WCTO) programme collects data on the delivery of universal health services to children under five years old and their whānau in New Zealand, including from WCTO service providers, who enter data into their information systems. The quality of these data were poor and inconsistent, and not considered safe or reliable to present for these IMPB profiles.

Additionally, for Te Taura Ora o Waiariki and Tūwharetoa IMPBs the number of births is also presented from the birth registration data collected by the Department of Internal Affairs, under the provisions of the Births, Deaths, Marriages, and Relationships Registration Act 1995. These data were not presented for other IMPBs as it has been found to undercount Māori births more than the National Maternity Collection (Te Whatu Ora - Health New Zealand 2024). It was however the only database which could be disaggregated to geographical areas smaller than a DHB, so it is presented alongside DHB level data for Te Taura Ora o Waiariki and Tūwharetoa.

Immunisation

Immunisation data comes from the National Immunisation Register (NIR), which collected immunisation details of New Zealand children born since 2005. It was replaced by the Aotearoa Immunisation Register in December 2023. The NIR was updated weekly, but the reliability of the data depended on timely and accurate data entry from providers. The NIR might have undercounted immunisation coverage for Māori children due to factors like lower primary care enrolment rates or higher use of outreach, meaning Māori children's immunisations were less likely to be captured consistently, with potential gaps in data linking between different immunisation providers. Despite these limitations, a 2021 study found that the sensitivity of the NIR was 92% and its specificity was 81% when compared with parent-held health-record books (Howe, Chisholm et al. 2021).

Oral health service data

As part of their contract with Te Whatu Ora, community oral health services are required to report information on patient demographics, oral health status, and treatments provided, using ethnicity as recorded in the NHI.

Hospitalisations

Hospitalisations come from the National Minimum Dataset (NMDS), a national collection that stores information on hospital discharges from public and some private hospitals in New Zealand. It includes data on inpatients and day patients, and some data on publicly funded events from private hospitals. For most hospitalisations data presented in this report, emergency department stays of longer than 3 hours are included as a hospitalisation. This needs to be taken into account when comparing rates with sources that exclude these types of admissions. In this report, data were suppressed when there were fewer than an average of one event per year during the time period analysed.

The accuracy of ethnicity data in the NMDS has improved over time, however multiple analyses have found that hospitalisations for Māori continue to be undercounted in the NMDS, with the magnitude of the undercount in the range of 5-15%, varying by age (Cormack 2010, Scott, Clark et al. 2018). The undercounting of Māori hospital discharges has implications for accurately monitoring Māori health status, service utilisation, and health inequities. Undercounting events in the Māori population leads to underestimation of the actual frequency of events in this group while overestimating their frequency in other populations.

Smoking

Smoking data comes from the 2018 Census of Population and Dwellings. Due to changes in the 2018 Census methodology and lower than anticipated response rates, as described further below, time series data for census variables should be interpreted with care. The 2018 Census was the first 'digital-first' census undertaken in Aotearoa, as a part of modernising and streamlining the census process. Unfortunately, the 2018 Census had a very low response rate overall, and especially for Māori and Pacific peoples - approximately 68% for Māori and 65% for Pacific peoples. Adjustments were made to improve the quality of the data (for example, using data from previous censuses and other administrative datasets), and the overall quality of the 2018 Census data is now considered moderate/good. However, the adjustments do not affect the Māori and non-Māori population in the same way. For example, in the 2018 Census, 29% or more of the ethnicity data for Māori came from other sources. This means that the ethnicity data in the 2018 Census for Māori is not of the same quality as the data for the NZ European ethnic population, for example, which had only 11.5% of their responses from these other sources.

In terms of the data presented in Volume Two of the IMPB profiles, cigarette smoking self-response data from the 2018 Census was used in a statistical model combined with data from the 2013 Census to predict what the missing data would have been (called imputation). StatsNZ has provided quality ratings for the 2018 Census data to help users determine how to interpret the data for each variable. Along with StatsNZ's own quality ratings, they also engaged an External Data Quality Panel which included Māori population experts, who provided their assessment of the census data quality. The cigarette smoking status results for Māori were particularly impacted by the 2018 Census. Further details on the adjustment methods used in the 2018 Census can be found online via StatsNZ[12]. The External Data Quality Panel noted that smoking among Māori may be overestimated by 1.0% in the 2018 Census. In addition, small geographic area results may be unreliable. Kawerau and Wairoa Districts were highlighted as examples of biased results in regions and territorial authorities due to high non-response rates in 2018. The overall message from the ratings is that the data can provide insights into the situation for Māori whānau, but it should be seen as indicative rather than precise.

StatsNZ apply confidentiality rules to census data to protect the confidentiality of individuals, families, households, dwellings, and undertakings in 2018 Census data. Counts are calculated using a method called fixed random rounding to base 3, and suppression of 'sensitive' counts less than six, where tables report multiple geographic variables and/or small populations. This means individual figures may not

[12] https://www.stats.govt.nz/assets/Uploads/Reports/Final-report-of-the-2018-Census-External-Data-Quality-Panel/Downloads/Final-report-of-the-2018-Census-External-Data-Quality-Panel-corrected.pdf

always sum to stated totals[13].

New Zealand Health Survey

Data on vaping, body size, mental health problems and alcohol and cannabis use come from the New Zealand Health Survey (NZHS). The NZHS is a nationally representative survey conducted and reported annually by the Ministry of Health. It provides valuable information on the health and well-being of the population and collects data on a wide range of health topics, such as health status, health behaviours, healthcare utilisation, and sociodemographic factors. Using a representative sample of approximately 14,000 adults (15 and older) and 5,000 children (14 and younger), the survey involves face-to-face interviews with participants from all regions of the country, with oversampling of Māori, Pacific, and Asian populations to ensure adequate representation (Ministry of Health 2023).

The NZHS sample is sufficiently large to provide national estimates for the Māori population. To provide Māori estimates for smaller geographic areas, multiple years of NZHS survey data have been combined. The NZHS relies mostly (except for body size which is measured) on self-reported data; this can be subject to recall bias or social desirability bias.

Mortality data

Information on deaths come from the National Mortality Collection. This classifies the underlying cause of death for all deaths registered in NZ. NZ is currently using the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) classification and the World Health Organization (WHO) ICD Rules and Guidelines for Mortality Coding. Mortality data are presented for Māori and non-Māori. In each data set, a person was classified as Māori if any one of their recorded ethnicities was Māori. The year range of 2016 to 2020 was used for cancer deaths, and 2014 to 2018 for deaths from other causes, as verified mortality data records were not available for later years at the time of writing. Deaths referred to the coroner for example can take more than two years to be fully investigated. In this report, data were suppressed when there were fewer than an average of one event per year during the time period analysed.

The DHB of residence was determined from the domicile code attached to the death registration (so even if a person passed away at a tertiary hospital outside their home region, their death would be recorded as one in their home DHB). In tables presenting data on causes of death, data is not presented where there were fewer than five Māori events during the period represented by the data. There are several different methods of classifying causes of death as “potentially avoidable”, “preventable” or “amenable”. The ICD-10-AM codes used for potentially avoidable death tables in this report are listed in the next Appendix.

[13] More info on Census confidentiality rules: Applying confidentiality rules to 2018 Census data and summary of changes since 2013 | Stats NZ

Virtual Diabetes Register

Diabetes data comes from the Virtual Diabetes Register (VDR), a national database that estimates the prevalence of diabetes in NZ. It uses data from various sources, including:

1. National Health Index (NHI) numbers
2. Hospital admissions data for diabetes-related conditions, based on ICD-10-AM diagnosis codes
3. Outpatient attendance data for diabetes education, management, and retinal screening
4. Pharmaceutical claims data for specific diabetes medications
5. Laboratory test claims data for HbA1c and albumin/creatinine ratio tests

The VDR algorithm identifies individuals as having diabetes if they meet specified criteria within a calendar year and were enrolled in a PHO at 31 December of the reported year (Te Whatu Ora - Health New Zealand 2023).

The VDR may underestimate the true prevalence of diabetes, especially for Māori, as it only captures individuals who have been diagnosed and have interacted with the healthcare system. People with undiagnosed diabetes or those who do not regularly access healthcare services may not be included in the VDR. In the quarter ending December 2023, the PHO enrolment rate for the Māori population was only 85%, significantly lower than the total population enrolment rate of 97% (Te Whatu Ora - Health New Zealand 2023). This lower PHO enrolment rate for Māori is likely to lead the VDR to underestimate the prevalence of diabetes in the Māori population. Furthermore, even when enrolled in a PHO, Māori are less likely to access services due to barriers such as cost and transport, adding another likely cause of underestimating the true prevalence of diabetes among Māori. PHO enrolment data has also been noted to undercount Māori enrolled due to inaccuracies in ethnicity data.

National Non-Admitted Patient Collection (NNPAC)

Data on outpatient care comes from the National Non-Admitted Patient Collection (NNPAC), a national dataset that collects information on outpatient and emergency department events in New Zealand. The ethnicity data in NNPAC is sourced from the NHI database, rather than being collected directly during healthcare events. As stated previously, misclassification of those with Māori ethnicity has been noted in the NHI database. This has led to undercounting of the actual number of health events for Māori.

New Zealand Cancer Registry Data

Cancer diagnoses come from the New Zealand Cancer Registry (NZCR), a national collection of data on all primary cancers diagnosed in New Zealand, excluding squamous and basal cell skin cancers. The NZCR primarily relies on pathology reports to identify new cancer cases. In this report, data were suppressed when there were fewer than an average of one event per year during the time period analysed.

Ethnicity data in the NZCR is sourced from various datasets, including the NHI, NMDS and National Mortality Collection. The reliability of ethnicity data in the NZCR has improved over time, but some limitations persist. Some cancer registrations have missing ethnicity data or staging data (Seneviratne, Campbell et al. 2014), Māori are more likely to be misclassified as non-Māori in the NZCR compared to other ethnic groups. Analyses using data linkage have demonstrated that Māori cancer registrations have been undercounted in the NZCR, with the extent of undercounting varying over time and by age group. The NZCR has implemented a new ethnicity data protocol to address these issues since 2009. The protocol uses an algorithm that assigns ethnicity based on information from multiple data sources, including the NHI, NMDS, and Mortality Collection. This approach aims to improve the accuracy of

ethnicity data for Māori and other ethnic groups, although some limitations may still exist.

Cancer Screening Data

Cancer screening data comes from data collected directly by the screening programmes, managed by the National Screening Unit in Te Whatu Ora. Ethnicity comes from the NHI. Population denominator data is sourced from Statistics New Zealand 2018 Census Population Projections 2023 update. The denominator is the projected population for the mid-point of the monitoring period. For example, this means that for the two-year period ending Dec 2023, the denominator is the projected population for Dec 2022.

PRIMHD

Data on wait times for specialist mental health appointments is drawn from the Programme for the Integration of Mental Health Data (PRIMHD) system, a national database that integrates mental health and addiction service activity and outcome data from multiple sources, including the former DHBs and Non-Governmental Organisations (NGOs) that provide publicly funded services. It does not collect mental health data from the private sector. PRIMHD collects ethnicity data from DHBs, gathered during interactions between service users and healthcare providers. The reliability of PRIMHD data for Māori is affected by inconsistencies in ethnicity data collection practices across the health sector. This is likely to result in the undercounting and misclassification of Māori individuals.

Appendix 2 – ICD-10-AM Codes

The International Classification of Diseases (ICD-10-AM) codes used for calculation of ambulatory care sensitive hospitalisations are presented below.

Table 246 – Ambulatory care sensitive hospitalisation ICD-10-AM codes

Condition	ICD-10-AM Code
Angina and chest pain*	I20, R072-74
Congestive heart failure*	I50, J81
Hypertensive disease*	I10-13, I15, I674
Myocardial infarction*	I21-23, I241
Other ischaemic heart disease*	I25, I240, I248-49
Rheumatic fever/heart disease	I00-02, I05-09
Dental conditions	K02, K04-05
Cellulitis	H000, H010, J340, L01-04, L08, L980
Dermatitis and eczema	L20-30
Constipation	K590
Gastroenteritis/dehydration	A02-09, K529, R11
Gastro-oesophageal reflux disease (GORD)	K21
Nutrition deficiency and anaemia	D50-D53, E40-46, E50-56, E58-61, E63, M833*
Peptic ulcer*	K25-28
Asthma	J45-46, R062§
Bronchiectasis*	J47
Chronic obstructive pulmonary disease (COPD)*	J44
Lower respiratory infections§	J22
Pneumonia	J13-16, J18
Upper and ENT respiratory infections	H65-67, J00-04, J06
Vaccine preventable MMR†	B05-06, B26, P350
Other vaccine preventable disease‡	A33-37, A80, A403, B16, B18
Cervical cancer*	C53
Diabetes*	E10-11, E13-14, E162
Epilepsy*	G40-41, O15, R560, R568
Kidney/urinary infection¶	N10, N12, N136, N309, N390
Sexually transmitted infections*	A50-60, A63, A64, M023, N341
Stroke*	I61, I63-66

Source: Ministry of Health
Notes: An inpatient hospital event is identified as an ASH event if the hospital admission is acute, the patient is aged 0 to 4 or 45 to 64 years, and the event primary diagnosis is included in the list of ASH conditions (ICD-10-AM Eighth Edition and DRG version 7). Elective events for dental conditions are included.
§ Aged 0 to 4 years. ‡ Aged 6 months to 14 years. †Aged 15 months to 14 years. * Aged 15 years and over.

The International Classification of Diseases (ICD-10-AM) codes used for calculation of potentially avoidable hospitalisations are presented below.

Table 247 – Potentially avoidable hospitalisation ICD-10-AM codes

Group	Condition	ICD-10-AM Code
Cardiovascular diseases	Acute rheumatic fever	I00, I02
	Chronic rheumatic heart diseases	I05-09
Dental conditions	Dental caries	K02
	Diseases of pulp and periapical tissues	K04
Dermatological conditions	Dermatitis and eczema	L20-21, L22‡, L23-30
	Skin infections	H000, H010, J340, L00-05, L08, L980
Diabetes complications	Diabetes complications	E10-11, E13-14, E162
Epilepsy	Epilepsy	G40-41, O15, R568
Gastrointestinal diseases	Constipation	K590
	Gastroenteritis/dehydration	A00-09, R11, K529
	Gastro-oesophageal reflux disease	K21
	Peptic ulcer*	K25-28*
Kidney, urinary tract infection	Kidney, urinary tract infection†	N10, N12, N136, N300, N309, N390
Meningococcal infection	Meningococcal infection	A390-95, A398-99
Nutrition deficiency and anaemia	Anaemia	D50-53
	Nutritional deficiency	E40-46, E50-56, E58-61, E63-64, M833‡
Other non-injury conditions	Other non-injury conditions	A87, A403, B34 G01-03, M86
Otitis media	Otitis media	H65-67
Respiratory conditions	Asthma, Wheezing	J45-46, R062
	Bronchitis, Bronchiolitis and Bronchiectasis	J20, J21‡, J47
	Lower respiratory tract infection (LRTI)	J22
	Pneumonia	J12, J15-16, J18, J69, J851
	Upper respiratory and ENT infections	J00-04, J06, J050
Sexually transmitted infections (STIs)	Sexually transmitted infections (STIs)	A50-60, A63-64, M023, N341
Vaccine-preventable diseases	Chronic viral hepatitis	B180-82
	Diphtheria	A36
	Hepatitis A	B150, B159
	Hepatitis B	B160-62, B169
	Hepatitis C	B171

	Influenza and related pneumonia, meningitis	G000, J09-11, J13-14
	Measles	B050-54, B058-59
	Mumps	B260-63, B268-69
	Poliomyelitis	A80
	Rubella	B06, M014, P350
	Tetanus	A33‡, A34-35
	Tuberculosis	A15-19
	Varicella	B010-12, B018-19
	Whooping cough	A370-71, A378-79

Source: Ministry of Health.
Notes: ICD-10-AM Eighth Edition.
† 5 years old and over.
‡ 0 to 14 years.
* 0 to 15 years.

Appendix 3 – Māori 2001 Population

The table below shows the 2001 Māori population standard used for age-standardisation in this report, including the weightings applied to each age group.

Table 248 – 2001 Census total Māori population

Age group (years)	2001 Census total Māori population	Weighting
0–4	67,404	12.81
5–9	66,186	12.58
10–14	62,838	11.94
15–19	49,587	9.42
20–24	42,153	8.01
25–29	40,218	7.64
30–34	39,231	7.46
35–39	38,412	7.30
40–44	32,832	6.24
45–49	25,101	4.77
50–54	19,335	3.67
55–59	13,740	2.61
60–64	11,424	2.17
65–69	8043	1.53
70–74	5046	0.96
75–79	2736	0.52
80–84	1251	0.24
85+	699	0.13

Te rārangi tohutoro
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