

# Determining our Future

Social, Cultural, Economic and Commercial  
Determinants of Wellbeing in Aotearoa New Zealand:  
Actions to improve our health and wellbeing

**2025**





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# Foreword

Tēnā koutou

It is now 27 years since the National Health Committee (NHC) published its landmark report on 'The Social, Cultural and Economic Determinants of Health in New Zealand'. That report set out how most of health status is the result of factors outside health care. The 'building blocks' or determinants of good health sit across many of the silos we have established for Government policy and action. Nearly all are unevenly distributed, but the pattern of uneven distribution is consistent across them all, resulting in some population groups being consistently advantaged and others consistently disadvantaged, with resulting profound inequalities of health status.

I joined the NHC, and its sub-committee the Public Health Advisory Committee, shortly after the report was published. It was clear that the report had struck a chord. It was widely read and referenced, and our two committees were able to continue our investigation into the upstream factors driving patterns of health and illness.

Both of those committees are now long gone, but the Pae Ora Act 2022 created a new Public Health Advisory Committee, which I have had the honour and pleasure of chairing. It seemed timely to revisit these building blocks: are the factors identified by the NHC still driving health status? Are there new factors for us to take into account? How good a job have we collectively done of using the knowledge and tools developed a quarter of a century ago to improve health outcomes - and equity of outcomes? Above all: how can we do better?

This report should be a sobering one. It paints a mixed picture: there have been some improvements and glimpses of what is possible, though these have mostly been isolated and not translated into systemic improvement. The building blocks identified in 1998 remain the same, though some new factors are emerging that will likely have profound impacts on health status in the future. Despite what we know about what drives health status (and wellbeing outcomes in other sectors too), our responses have been too weak and fragmented to overcome institutional inertia and enable an effective response.

Yet against this gloomy picture positive options still exist. We can build on areas that have been making progress, and we can learn from those that have failed to make a difference. For me three critical lessons emerge. First, we need to understand that while our concern has been the building blocks of health status, these are the same factors that are the upstream drivers of every other aspect of wellbeing; addressing them will achieve positive outcomes across the whole range.

Secondly, creating effective government actions that are not hostage to sectoral silos will require clear and enduring commitment and direction from Ministers and chief executives, or else 'business as usual' will reassert itself. Thirdly, while it is the Government's job to create the environment for success through good policy settings and funding, successful programmes of action will be designed and implemented by iwi and hapū and by communities themselves. We need to trust and resource that process.

Ngā mihi

**Kevin Hague**  
**Chair**

#### **Public Health Advisory Committee Members**

- Kevin Hague (Chair)
- Beverly Te Huia
- Professor Jason Gurney
- Associate Professor Ruth Cunningham
- Professor Peter Crampton
- Dr Caroline McElnay
- Faumuina Professor Fa'afetai Sopoaga

# He mihi

Tēnā anō rā tātou katoa.

Tēnā anō hoki tātou i a rātou kua ngaro nei i te tirohanga kanohi, rātou i para i te ara e takahia nei e ngā uri whakaheke o te wā nei.

E mihi ana rā ki tā rātou i waiho mai ai, tā rātou tautoko mai i te kaupapa me te mana, te pūahoaho, te tauwhiro me te tohutohu me aha āhea. Nā ō rātou reo i āwhina te mahi raranga i te mahi kia kotahi.

Ko te pūrongo nei he whakaatatanga i te mahi tahi a rau ringa, a rau ngākau, a rau hinengaro kia tutuki ai te kaupapa. E mihi atu ana ki ngā kaipupuri i te mātauranga, ki ngā kaiarataki, ki ngā kairangahau, ki ngā kaitātari, ki ngā whānau i homai whakaaro kia taea ai te whakatutuki tā te pūrongo e kī nei.

Tēnā kia whakaingoatia ake i konei te hunga nei, ko Ian Lambie, ko Anna Stevenson, ko Huhana Hickey, ko Elana Curtis, ko Tristram Ingham me Jacinta Fa'alili Fidow.

Nā ō koutou whakaaro, tō koutou tūpato, tō koutou whakapau wā, i hōhonu ake ai, i kitea ai te ahunga o te mahi nei. E mihi ana ki tō koutou āta whakaaro me tō koutou ū ki te whakaaro kia kaha ake, kia tōkeke ake te wā kei mua i te aroaro.

Ehara te pūrongo nei i te takotoranga kōrero mō ngā mahi i tutuki engari he kokenga whakamua. E tono ana kia haere tonu ngā kōrero, kia pai ake ngā whakatau, kia mahi tahi.

Tēnā rā koutou i takahi nei i te ara o te panoni i ō mātou taha.

# Acknowledgements

We begin by acknowledging the unseen forces that guide and steady us – those who have come before and whose legacy continues to shape our journey.

We recognise those who have contributed to this kaupapa with insight, integrity, and care. Whether through leadership, research, lived experience, or advocacy – your voices have helped weave this work together.

This report stands as a reflection of many hands, hearts, and minds working together with purpose. We acknowledge the knowledge holders, leaders, researchers, analysts, and whānau who contributed their insight and experience to shape what lies within these pages.

We especially thank our external reviewers: Ian Lambie, Anna Stevenson, Huhana Hickey, Elana Curtis, Tristram Ingham and Jacinta Fa'alili Fidow. Your whakaaro, your care, and your time have added depth and direction to this work. We are grateful for your openness, your clarity, and your commitment to building a stronger, more equitable future.

This report is not just a record – it is a stepping stone. It invites further conversation, better decisions, and collective action. We thank you for walking with us in this journey toward change.



# Executive summary

## Determining our future health and wellbeing

Being healthy and well is much more than the absence of illness. Good health allows us to fulfil our potential and ‘live awesome lives’.<sup>1</sup> This report by the Public Health Advisory Committee (PHAC) looks forward to 2040 and examines how we can best improve health and wellbeing outcomes for everyone in Aotearoa New Zealand.

We are facing significant new challenges to our wellbeing, at a time when our health system is already over-stretched. Our population is more diverse, growing and ageing. The global political situation is changing and uncertain. There are increasing impacts of the climate crisis and environmental degradation, and potentially major effects on employment and society with increasing use of artificial intelligence (AI) and other digital technologies.

Twenty-five years on from the last major report on social, cultural, and economic determinants of health in Aotearoa New Zealand, this report brings together evidence on the health and wellbeing of our country, and what influences it. We use a wide range of sources, including findings from international and local research, evaluations of implementation experience, population data, and case studies. We draw on the experience and perspectives of community, iwi and public service leaders, and of young people, in understanding what is working and in proposing new approaches. These views have greatly enriched this report and the recommendations for action that PHAC offers.

### What are the main influences on our health?

Many people think that individual behaviours and access to health care have the greatest effects on health, but this is not the case. Rather, health starts in our homes, schools and communities. Strong connections with our whānau and community, and where we live, work, learn and connect with the environment all have a **greater** influence on our health and wellbeing than health care. These influences are called the **determinants of health**.

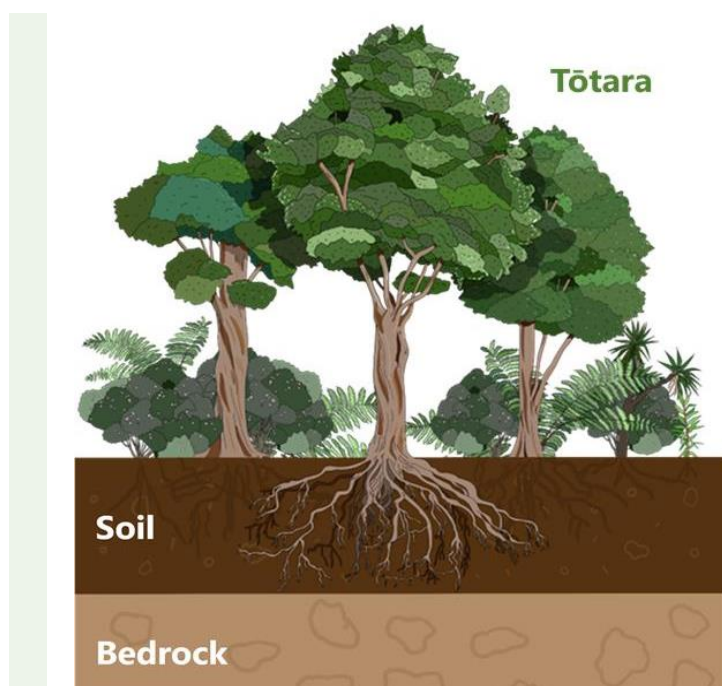
The health system is also considered a determinant of health – and importantly, can reduce the impacts of poverty and other harmful exposures, and address the disabling consequences of health conditions. However, this report focuses primarily on factors **outside** health care, as these contribute significantly more than health care to our health and wellbeing.

## Our health and wellbeing – tōtara in the forest of Tane

We use the image of tōtara trees in the forest as a metaphor to explore the influences that shape our health and wellbeing (**Figure 1**). The tōtara represents a person and their whānau. The tree's health and growth depend on having fertile soil, stable bedrock and a healthy environment. The tree's leaves and fruit are signs of growth which illustrate our health and wellbeing outcomes. These are the outward signs of what is happening under the soil and inside the tree.

**The soil** represents resources, such as having a secure home, access to healthy food and a stable income. These resources (or determinants) nourish us, so we can flourish and thrive. Trees get stability from their **roots**, which are part of a root network they share with other trees. People do best when they have strong relationships and connections, through whakapapa, shared interests or being part of a community. In this way the root networks illustrate our whānau and community connections.

Figure 1: Tōtara in the forest of Tane



**The bedrock** below the forest and soil is its foundation. In the same way, human rights, the right to health and Te Tiriti o Waitangi are fundamental to our society and wellbeing in Aotearoa New Zealand. They guarantee our freedoms, rights and obligations to each other. However, there are other elements in the bedrock and soil today which negatively influence the health and wellbeing of the forest. Discrimination, racism, the ongoing impacts of colonisation, and our current type of economic system are some of the structural issues in the bedrock of our society which create unequal access to the soil, the resources for health and wellbeing.

This means that the determinants of health are not evenly spread across our society. For example, people living in less well-off communities are often exposed to multiple health damaging factors such as poorer working conditions, low incomes, greater traffic and air pollution, and lower quality housing, than people in more advantaged communities. Disabled people face discrimination in employment, earn lower incomes, and have poorer access to suitable housing. The determinants do not operate independently but act together, often with compounding effects.

## How is Aotearoa tracking?

### Trends in determinants since 2000

Despite some progress overall, our review shows that since 2000, significant differences by socioeconomic status, ethnic group, disability and age have persisted across important determinants of health, including income, employment, and education. Indicators have gone backwards for all of us since 2000 in some critical areas, such as housing affordability, household crowding, food security, the quality of our natural environment, and levels of trust in government and within communities. (**Section 3**).

Young people told us that the cost of living and financial stressors are their greatest immediate concerns, limiting the opportunities they can take up and affecting their mental health. Many young people also feel overwhelmed, anxious, or angry about the climate crisis, pollution, the global situation, and inaction from decision-makers.

### Trends in health outcomes since 2000

The report assesses progress in the health of our communities over the last 25 years, and what we have learned. Although overall we live longer lives, and important gains have been made over the last 25 years, these benefits have not been equally shared. This is reflected in persistent, but preventable, differences in health outcomes and life expectancy between communities in our country. These inequities largely parallel the trends we see in health determinants.

Health inequities today remain striking, as illustrated by how long we can expect to live. Children growing up in our most urban areas today can expect to live four years longer than those in the most rural areas. A Pākehā (European New Zealander) baby boy born in Waikato today can expect to live eight years longer than his Māori neighbour. Pākehā children can expect to live to 84 years in the northern region, seven years longer than Pacific peoples' children – a gap that has **increased** since 2000.

In addition, complex long-term conditions such as diabetes are more prevalent, and our mental health is poorer, especially for children and young people. We are less physically active and more of us have unhealthy excess weight, contributing to diabetes, cancers, and disability. Our health system is under huge pressure – and we have a growing and ageing population which will increase these pressures.

## Why is it important to reduce inequities in health?

A healthy cohesive society and a resilient prosperous economy are key goals for government and are deeply intertwined. Inaction on health inequities has significant costs – predominantly for whānau and communities – but also for our health system and economy. Improving health and wellbeing through addressing the determinants that shape our health can reduce health system pressures. Improving health and reducing inequities in important health outcomes such as communicable diseases, youth mental health, and alcohol harm has collective benefits for all of us.

Te Tiriti o Waitangi reaffirms tino rangatiratanga for Māori and a place for non-Māori to live in Aotearoa New Zealand. In Te Tiriti, the Crown (our government) has committed to protect Māori health and deliver the best health outcomes for everyone. By 2040 it will be 200 years since our ancestors and tūpuna signed Te Tiriti o Waitangi, and we must achieve real and sustained progress in this partnership and in health outcomes for Māori.

Faced with unequal economic and social circumstances in Aotearoa New Zealand, and persistent disparities in health and wellbeing, many New Zealanders are worried about this lack of fairness. There are concerns especially for our children and young people, and the negative impacts that these inequities have on cohesion and sense of togetherness in our communities.

The good news is that these influences on our health are not fixed or inevitable. We can modify them through the social and economic policies and programmes we choose to implement. In this report we assess some of the areas of progress since 2000, such as the reduction in child poverty, and how positive change can be created. We also summarise evidence about policies and programmes that show effectiveness in improving wellbeing and reducing health inequities.

## New challenges are shaping our wellbeing

We discuss some important current and emerging challenges to our health and wellbeing. Commercial entities such as the food, alcohol and tobacco and fossil fuel industries and their practices influence our health, directly and indirectly. We consider the potential impacts of the ‘megatrends’ – the climate crisis, and AI and digital technology, which will affect all aspects of our society in the coming decades.

## So, what do we need to do?

In the face of the challenges shaping our future, PHAC's recommendations to the Minister of Health and government for improving health equity and wellbeing are grouped around three main themes. Developing agreed multi-partisan, longer term wellbeing goals is a critical step for government to achieving health equity and wellbeing. The actions we propose reflect our assessment of the evidence and what we have heard from community, iwi and public service leaders, and young people. These actions are presented in more detail in the final section of the report.

### PHAC recommends that government:

- **Invest in and empower communities, the root network of our forest.** Wellbeing, social cohesion, economic prosperity, and health start within whānau and communities. Their mana, aspirations for self-determination, capacity and strengths are fundamentals to build on. Early support for children and their families is vital to improving health equity and wellbeing across the life course.
  - The whole public service needs to work collectively across government to achieve agreed wellbeing goals with communities. This requires making changes in the way public services work together, to enable and empower communities.
- Strengthen **our bedrock, the fundamental structures of our society** so that all New Zealanders have access to the resources they need to thrive.
  - We propose initiating a discussion on Te Tiriti o Waitangi as we move towards 2040, about how we want to govern our country.
  - Human rights need to be embedded further into our laws, public policies, and practice.
  - The government needs to articulate an explicit approach to economic growth, societal wellbeing and equity. We need an economic system that is more equitable and redistributive by design. Further use of income and wealth tax levers is needed to reduce income and wealth inequities, and to support adequate investment in social and health services.
- **Invest in 'win-win' solutions that nourish the soil and which have compounding benefits for health and other social outcomes.**

Solutions for existential challenges like the climate crisis sit outside the health system, but can be 'win-win', with benefits for health equity, and for other positive social, economic, and environmental outcomes.

While the focus of this report is on the determinants of health outside the health system, we recognise the important contribution health care makes to our health and wellbeing. We propose recommendations for the health system that align with the three themes above. The health system must retain health equity as a key goal. An equitable, accessible and non-discriminatory health system is core to realising a healthy future for us all.



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# Introduction

Good health allows us to fulfil our potential and ‘live awesome lives’.<sup>1</sup> This report by the Public Health Advisory Committee (PHAC) looks forward to 2040 and examines how we can best improve health and wellbeing outcomes in Aotearoa New Zealand for everyone.

Today, our health care system is facing huge pressures. Every day the headlines tell us there is a health ‘crisis’: ‘epidemics’ of diabetes and youth mental health, long waiting lists for hospital care, problems accessing primary care, inadequate staffing and unaffordable treatments.<sup>2-4</sup> We are also facing significant new demographic, environmental, and societal challenges which will strongly influence our future health and wellbeing.

Health starts in our homes, schools and communities. Strong connections with our whānau and community, and where we live, work, learn and connect with the environment all have a **greater** influence on our health and wellbeing than health care or individual behaviours. These influences are called the ‘determinants of health’.<sup>5-7</sup> Twenty-five years on from the last major report on determinants of health in Aotearoa New Zealand,<sup>8</sup> the PHAC assesses progress in the health of our nation, what we have learned, and examines new and emerging challenges.

Evaluating the effects of big societal and policy changes on health and wellbeing is not like assessing the result of a single intervention in a randomised controlled study. Our society is complex and there can be unexpected or unintended effects. So, we bring together evidence from a wide range of sources on the health and wellbeing of our country, and what influences it. This includes research findings, evaluations of policy and programme implementation experience here and internationally, trends in population data since 2000, and case studies.

We also draw on the experience and perspectives of community, iwi and public service leaders, and of young people, to understand what is working and to propose new approaches. These views have greatly enriched this report and the actions we propose. Throughout the report we have included the voices of people we spoke with. Our methods are detailed further in **Appendix 1**.

In the final section we recommend actions to the Minister of Health, whole of government and the health sector. Many of these actions are ‘win-win’ – they address the big challenges like the climate crisis, and at the same time they can significantly improve health equity and wellbeing outcomes in all our communities.

# Challenges to our health and wellbeing

## A changing society

By 2040 the population of Aotearoa New Zealand is predicted to reach 6 million.<sup>9</sup> More of us will live in urban areas, with Auckland growing faster than other cities. Our society will be very diverse and have large populations of young Māori (>1 million), young Pacific peoples (>650,000) and young Asian peoples (>1 million).<sup>9</sup> One-third of children will identify as Māori, and one in five as Pacific peoples. At the same time, in each ethnic group, the number and proportion of people over 65 years will increase.<sup>9</sup>



The demand on our health system is expected to significantly increase as our population grows and ages, and more people experience chronic conditions such as diabetes, cancer, and mental health conditions.<sup>2,10</sup> Given current trajectories, many more of us will experience impairments (disabilities) associated with these conditions and with ageing. Demand will also increase as we continue developing new, and often expensive, treatments.<sup>11,12</sup>

## Entrenched and unfair differences in health

Aotearoa New Zealand has entrenched but preventable differences in the health of different populations, with poorer outcomes disproportionately experienced by Māori and Pacific peoples.<sup>i, 13,14</sup> Children growing up in our most urban areas can expect to live four years longer than those in the most rural areas.

Girls growing up in the most socio-economically advantaged areas of our country will live five years longer than girls in the least advantaged areas. Despite some reduction in the life expectancy gap between Māori and Pākehā (European New Zealanders) since 2000, a Pākehā baby boy born in Hamilton today can expect to live eight and a half years longer than his Māori neighbour.

Pākehā children can expect to live to 84 years in the northern region, seven years longer than Pacific peoples' children – a gap that has **increased** since 2000.<sup>15</sup> The loss of potential wellbeing and experience of poor health impacts most on those directly affected and their families, but these losses diminish the overall wellbeing of us all.

## New challenges shaping our future wellbeing

In the coming decades there are important global and local influences – trade, economic and geopolitical changes, digital technologies, the climate crisis and environmental degradation – that will have increasing impacts on our health and wellbeing.<sup>16,17</sup> By 2040 our environment will face extensive effects of climate change and biodiversity loss.<sup>17</sup> Our society is likely to be dramatically changed through artificial intelligence (AI) and other technologies.<sup>18,19</sup> Global geopolitics may be more confronting, and global and regional migration patterns may change.<sup>16</sup> While the impact of these challenges is still uncertain, they have the potential to threaten our wellbeing and social cohesion, and destabilise our society and governance.

<sup>i</sup> In Aotearoa New Zealand, 'Pacific peoples' is a collective term for diverse ethnic groups that trace their origins to indigenous peoples of the island nations of the Pacific, such as Tonga, Samoa, Niue, and the Cook Islands.

# Why do we need to act?

In addition to responding to these demographic, environmental and social challenges, there are further fundamental reasons for action to achieve a healthy society. A healthy, cohesive society and resilient, prosperous economy are key goals for government.<sup>20,21</sup> A productive resilient economy needs healthy people, and greater disparities in health are associated with poorer economic performance of countries.<sup>22</sup> Inaction on health inequities has significant costs – predominantly for whānau and for our society, but also for our health system and economy.<sup>23</sup> Improving health and wellbeing through addressing the determinants of health can reduce health system pressures.

Social and economic prosperity are linked and depend on each other. Ensuring this concept is at the heart of our decision-making is important for achieving sustainable wellbeing, equity and greater self-reliance.<sup>21</sup>

In Te Tiriti o Waitangi, the Crown (our government) has committed to protecting Māori health and delivering the best health outcomes for everyone. Te Tiriti o Waitangi reaffirms tino rangatiratanga (sovereignty) for Māori and a place for non-Māori to live in Aotearoa.<sup>24</sup> By 2040 it will be 200 years since our ancestors and tūpuna signed Te Tiriti o Waitangi, and we must achieve real and sustained progress in honouring this relationship, putting Crown commitments into practice, and upholding the Crown's obligations in relation to hauora Māori.

Improving health and reducing inequities in health outcomes such as communicable diseases, youth mental health and alcohol harm has benefits for all of us – as these have collective impacts, not just at an individual level.

Finally, these influences on our health are not fixed or inevitable. We can modify them through the social and economic policies and programmes we choose to implement.

We acknowledge health care is also an important determinant of health, which can reduce the impacts of poverty, toxic exposures and disability. However, this report focuses primarily on factors **outside** of health care, that contribute significantly more to our health and wellbeing.

# An alternative approach is needed

If we keep on with 'business as usual', our health system will become increasingly costly and over-burdened, and collectively we will have less optimal health outcomes. But as noted above, international and local research shows that health care does not make the biggest contribution to our wellbeing and health outcomes, or how these outcomes are distributed.<sup>7,25</sup> Where we live, our job, income, wealth and resources, our knowledge, skills, and sense of community and connectedness contribute significantly more. This is the rationale for our approach in focusing on and addressing these determinants of health.<sup>6,7</sup>

In addition, many of the factors associated with poor health in Aotearoa New Zealand are strongly patterned by socioeconomic status and ethnicity. Toxic environmental exposures such as poverty, poor housing, water and air pollution, and food insecurity are unevenly distributed in our society. These factors are often interrelated and have complex and cumulative effects throughout our life, from birth to death, and across generations.<sup>26</sup> Modifying these determinants can more effectively influence our overall health and wellbeing than provision of health care.

## Outline of this report

**Section 1** introduces PHAC's vision of health and wellbeing, how determinants affect us as individuals and whānau, and the metaphor of tōtara and trees in a forest that illustrates this. It provides the background to the development of this report.

**Section 2** synthesises evidence for relationships between the main determinants of health and their interconnections, and examines what drives these relationships. In this section, we also examine the biological mechanisms that explain how some determinants affect our mental and physical health. We consider why it is important that our society addresses entrenched and unfair health differences, particularly in the face of uncertainty and rapid societal changes.

**Section 3** looks back to trends in key determinants of health equity and health outcomes over the last 25 years, while **Section 4** looks to the future, identifying new or recently recognised influences on our health that will become increasingly important. These include AI and the digital environment, commercial interests and the climate crisis.

**Section 5** reviews progress and outcomes since 2000 in some key policy areas that influence wellbeing, through the perspectives of community, iwi and public services leaders. We identify evidence for successful policies that can improve health equity.

**Section 6** proposes actions for government. These were developed through review of implementation experience and research evidence in Aotearoa New Zealand and internationally; the learnings of community, iwi and public services leaders; and the perspectives of young people. We illustrate potential actions with two case studies (**Appendix 2**).

Good solutions can compound wellbeing benefits, including economic benefits. We propose ways to address today's health inequities and improve everyone's health, while addressing the significant challenges confronting our society.



# 1 Our vision – a healthy tōtara

Health and wellbeing are important to us all. Health encompasses our physical, mental, social, cultural and spiritual wellbeing. We experience good health and wellbeing in a personal **and** a collective sense. Our wellbeing is affected by our connections to our whānau, community and place, through whakapapa and whenua; our beliefs and sense of agency; our life experiences, and our genetic makeup.<sup>7,27-29</sup>

From decades of research, we know that these personal and collective factors, combined with other key factors in our lives (where we live, our job, wealth, earnings, resources, knowledge and skills), contribute much more to our wellbeing and health than health care alone.<sup>7,30,31</sup> At an individual and collective level, these factors together produce combined, cumulative effects across our lives. Good health itself acts as a resource for future wellbeing, like a self-reinforcing spiral. For example, children whose health needs are met are more likely to fulfil their educational potential. This has a positive impact on our society and economy, and the health and wellbeing of the next generation.

## Tōtara in the forest of Tane

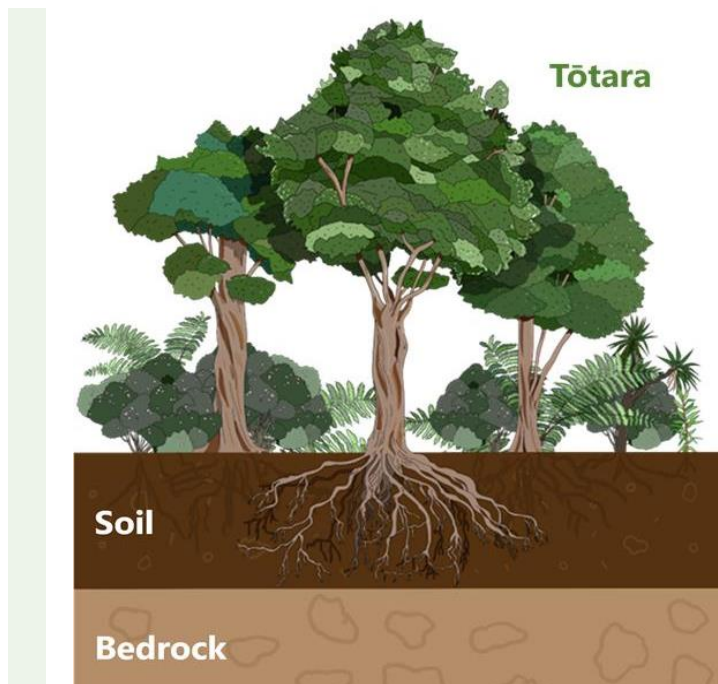
We use the image of tōtara trees in the forest as a metaphor to explore the influences that shape our health (**Figure 2**). Trees in a forest appear simple, but they are part of complex and interrelated structures, systems and processes, like those of our whānau, communities and society. The diversity in our society reflects the biodiversity we see in a healthy forest.

The **tōtara** represents a person and their whānau. The tree's health and growth depend on having strong root networks, fertile soil, a stable bedrock and healthy environment. The tree's leaves and fruit are signs of growth, illustrating our health and wellbeing outcomes. These are the outward signs of what is happening under the soil and inside the tree.

The **soil** represents resources (determinants) like having a secure home, access to healthy food and a stable income. These conditions nourish us, so we can flourish and thrive. Trees get stability from their **roots**, which are part of a root network they share with other trees. This network helps the tōtara weather storms or other adverse events. People do best when they have strong relationships and connections, through whakapapa, shared interests or being part of a community. The root networks illustrate these whānau and community connections.

The **bedrock** below the forest is its foundation. Investing in the conditions that will nurture society as a whole enriches the bedrock and soil. In this way, human rights, our rights to health, and Te Tiriti o Waitangi, are fundamental to our society, relationships and wellbeing in Aotearoa New Zealand. They guarantee our freedoms and obligations to each other. Our economic and justice systems are other important elements in the bedrock.

Figure 2. Tōtara in the forest of Tane



There are elements in the bedrock and soil today which negatively influence the health and wellbeing of the forest. Discrimination, racism and colonisation, and our current economic model are some of the structural issues in the bedrock of our society which continue to create unequal access to resources. In addition, the climate crisis, and the transformation of work and society that we expect AI to bring, are further critical challenges for the bedrock of our society. These 'megatrends' are predicted to strongly influence our future health and wellbeing.<sup>16,32</sup>

# Our vision of health and wellbeing

In many consultations, hui and talanoa led by the health system in recent years, communities across Aotearoa New Zealand have expressed what good health and wellbeing mean to them, and the importance of the relationships and resources that contribute to that (**Appendix 1**). Communities want whānau to prosper and ‘live awesome lives’,<sup>1</sup> achieving their potential in positive engagement with their community and their environment. The thriving tōtara in the forest illustrates this idea.

[Being healthy means] living a full life surrounded by whānau doing things that matter.<sup>33</sup>

PHAC’s vision of health is of intergenerational wellbeing (pae ora), where everyone’s potential is realised, and where we live collectively with a sense of belonging in a healthy, sustainable environment (te taiao). This vision of health and wellbeing is guided by two ‘touchstones’ or positive elements of our bedrock: the right to health<sup>ii</sup> and Te Tiriti o Waitangi. Te Tiriti o Waitangi affirms the right to health and underpins our vision for wellbeing in Aotearoa. It is a foundational commitment that shapes our relationships, how our society is organised and the rights and obligations we all hold.

## The right to health

Health is a fundamental human right.<sup>34,35</sup> Everyone has the right to enjoy the best physical, mental and spiritual health possible, and to access high quality health care that they need. Every family, regardless of who they are, where they live or how much they earn, should have the resources they need to ensure their children grow up healthy and have the opportunities to live their best lives.

‘Health equity’ is achieved when everyone can reach their full health and wellbeing potential.<sup>32</sup> It implies that resources are distributed and processes are designed in ways most likely to equalise the health outcomes of disadvantaged social groups with the outcomes of their more advantaged counterparts.<sup>36</sup> Health equity is a right to ‘substantive equality’, which means people having equal opportunities and outcomes across multiple dimensions. In contrast, ‘formal equality’ means treating everyone equally, based on the norms of society’s dominant group.<sup>37</sup>

<sup>ii</sup> The right to health is referred to in international treaties, including the International Covenant on Economic, Social and Cultural Rights and the United Nations Declaration on the Rights of Indigenous Peoples. It encompasses the determinants of health.

### The difference between inequality and inequity<sup>32,38</sup>

**Inequalities** are measurable differences in the health outcomes of different groups of people.

**Inequities** are differences that we know are avoidable, and which are considered unfair and unjust.

**Equity** occurs when there are no unfair, avoidable or remediable differences in the wellbeing outcomes of different groups of people, whether the groups are defined economically, socially, or by other dimensions (such as ethnicity, gender, disability or sexual orientation). Equity recognises that different people with different levels of advantage need a different approach and resources to achieve equitable outcomes.

## Te Tiriti o Waitangi

In Te Tiriti o Waitangi, the Crown–Māori relationship acknowledges the responsibility of the Crown (our government) to govern (kawanatanga, Article 1); reaffirms the sovereignty of Māori chiefs (tino rangatiratanga, Article 2); and promises equity (ōritetanga or rite tahi, Article 3). PHAC recognises the government's obligations to uphold Te Tiriti, which reaffirms Māori rights and lays a foundation for a just and equitable society for all in Aotearoa New Zealand.

We acknowledge the five principles that guide the health system, articulated by the Waitangi Tribunal in 2019.

- Tino rangatiratanga
- Equity
- Active protection
- Options
- Partnership.

The Pae Ora Act (2022) embedded the Crown's intention to give effect to Te Tiriti o Waitangi in the health system in legislation.<sup>39-42</sup> PHAC supports reparative and restorative justice processes, recognising and acting on past and current injustices.

In the tōtara tree metaphor, the soil above the bedrock that nurtures the tree's roots represents the expression of our rights and the more immediate influences this has on whānau wellbeing (such as adequate incomes, sustainable employment, equity in education, strong cultural identity, and safe and secure housing). When people's rights are not observed or respected, access to resources for wellbeing, or the determinants of health, is more unequal. This results in inequities in the health and wellbeing of whānau and communities.

# Whakapapa of this report

Knowledge of the importance of the relationships between good health and wellbeing and the determinants is not new. Understanding this history provides important context for where we are now. Oranga (the Māori world view of wellbeing) acknowledges that wellbeing is interconnected with whakapapa and identity, our environment, and whānau or family group.<sup>28</sup>

One could not be well if one's whakapapa was disrupted, as it was from one's whakapapa that knowledge about te ao Māori and self and group identity was sourced. One could not be well if one's connection to the whenua was lost, as it was from the whenua that one's self- and group identity, belonging, and nourishment was activated and practiced. One could not be well without whānau, the most intimate social unit within which one learned about and practiced the reciprocity of caregiving, nurturing, and the giving of security.<sup>28</sup>

## Contemporary public health practice and determinants of health

Contemporary public health practice developed in the 19th century in parallel with the Industrial Revolution in Europe and the USA, and as a key tool of the European colonial project.<sup>43,44</sup> The Industrial Revolution was accompanied by extreme poverty and atrocious working conditions, which had highly detrimental social and health impacts. Workplace injuries and death were common, and severely polluted water and air caused illness, epidemics and death. This situation led to the first Public Health Act in England in 1848. The Act triggered major policy changes to improve living and working conditions. This resulted in improved life expectancy for everyone, well before modern medical treatment was available.<sup>45</sup>

In Aotearoa New Zealand, the history of public health is intimately linked with important determinants of health: colonisation, urban planning and the control of infectious diseases (through improved housing, safe water, access to health care, etc.).<sup>46,47</sup> Following the Great Depression of the 1930s, major reforms of many key determinants occurred, including employment and income support, the introduction of superannuation and public health care, and strategies to advance economic development, wellbeing and health outcomes.<sup>48,49</sup>

Over the last three decades, public health researchers and practitioners in Aotearoa New Zealand have focused on understanding how determinants such as housing, urban transport, environmental factors, and racism and discrimination influence our wellbeing. The timeline in **Appendix 3** shows some key public health research and reports that have been influential here and internationally in developing our knowledge, experience, and actions on determinants of health.

## Previous Advisory Committee reports

In 1998, the National Health Committee (NHC)<sup>iii</sup> published *The Social, Cultural and Economic Determinants of Health in New Zealand: Action to Improve Health*.<sup>8</sup> This report summarised evidence on determinants of health in Aotearoa New Zealand. It recommended strategies that the health sector could implement to reduce socioeconomic inequalities in health and noted the importance of policies and interventions outside the health sector.

The Public Health Advisory Committee of the time then published *The Effect of Environmental Factors on the Health of New Zealanders* in 2002,<sup>50</sup> and *A Way Forward: Public Policy and the Economic Determinants of Health* in 2004.<sup>51</sup>

The first publication examined environmental issues linked to ill health and health inequalities (such as air and water quality) and issues emerging at that time (such as climate change and health in urban environments). The second publication explored the relationship between socioeconomic status and health.

These reports had considerable influence on public health, health system thinking, and actions on determinants of health and health equity in Aotearoa New Zealand.<sup>52</sup> They inform how we approached this report in 2025, while contemporary evidence and perspectives have enlarged our understanding and provided new insights on present and future challenges.

<sup>iii</sup> The National Health Committee (NHC) existed in various forms from 1993-2016. The Public Health Advisory Committee was established as a sub-committee of the NHC in 2001 and formally dis-established in 2016, along with the NHC. The current PHAC was established under the Pae Ora Act in 2022 [Skegg, D. *The Health of the People* (2019). BWB Books].

# Social, health and environmental changes since 1998

Our society and health system have changed significantly since the 1998 NHC report. We summarise key changes here, with further data and analysis provided in **Section 3** and **Appendix 4**.

## Changes to our population

Since the 1990s, our population has grown to over 5 million. Migration patterns have also changed – we are now a more diverse society, particularly in urban centres. Nearly two-thirds of Pacific peoples in Aotearoa New Zealand live in Auckland, which is now the world's biggest urban centre for Pacific peoples. Two-thirds of Aotearoa New Zealand's Asian peoples also live in Auckland.<sup>53,54</sup>

## Changes to how we see ourselves

Māori understandings about identity and belonging increasingly influence the collective national identity.<sup>55,56</sup> Māori media has had a major impact on the public's understanding of issues that are important to Māori and Aotearoa New Zealand. More of us speak te reo Māori, and most of us believe Te Tiriti o Waitangi is an important partnership that must be honoured.<sup>57</sup> There has been settlement of some significant Treaty of Waitangi claims and government investment in line with Treaty commitments.<sup>58</sup>

The Māori economy, including iwi-led enterprises, has grown significantly, and now outperforms Aotearoa New Zealand's overall economic indicators.<sup>59</sup> The Māori tourism industry alone is worth more than \$1.2 billion annually. On average, Māori tourism businesses generate more employment opportunities and pay higher salaries than non-Māori tourism businesses.<sup>60</sup>

## Changes to technology and education

Relying on technology is part of my everyday life. [Rangatahi, The HIVE]

Our society and systems are now driven by digital technologies that have revolutionised the way we live, work, learn, and play. The rate at which these technologies advance sometimes outpaces our ability to adequately mitigate risks and harms. Since 2000, there has been widespread – if still uneven – uptake of internet, digital technologies and social media. This has both major benefits and some negative social impacts, particularly for younger people.

[Social media] feeds misogyny amongst young men and Instagram encourages it... Dating apps suck for body image and the gender difference, meaning you get so used to rejection and makes meeting people feel less important.  
[Rangatahi, The HIVE]

Our education system has also changed significantly. New Zealanders, especially women, are more likely to study at tertiary level, to study at older ages, and are more qualified.<sup>61</sup> The kōhanga reo movement, kura kaupapa Māori and whare wānanga have visibly contributed to Māori whānau development, educational achievement, leadership and wider success.

## Changes to our wealth

Since 2000 there have been small reductions in income inequality as a result of progressive tax and welfare transfers, but we still have large differences in wealth.<sup>62</sup> Increasing globalisation and neoliberal economic policies have been associated with more casual and precarious employment, declines in home ownership and affordability, and increased rental stress.<sup>63,64</sup> Improvements up to 2022 in child poverty rates and household food security measure have stalled or reversed since 2023.

**Figure 3. The persistent relationships between ethnicity and socioeconomic deprivation (NZDep) in Aotearoa New Zealand, 1991-2023**



Source: Crampton P. The persistent relationships between ethnicity and socioeconomic deprivation in Aotearoa (NZDep) 1991 and 2023. Personal communication; 2025<sup>65</sup>



Figure 3 shows the proportion of each ethnic grouping by NZDep, in 1991 and in 2023. NZDep measures the level of socio-economic deprivation for people in small areas, based on nine Census variables. NZDep is displayed as deciles (10%), with each decile containing about 10% of small areas in New Zealand. Decile 1 represents areas with the least deprived scores and Decile 10 represents areas with the most deprived scores.<sup>67</sup>

If socioeconomic deprivation were independent of ethnicity, each ethnic group would be equally distributed across the deprivation deciles (all the bars would be equal in height). However, the distribution is highly unequal: more than half the Māori population lives in the most deprived neighbourhoods (deciles 8–10). The Pacific population is even more skewed towards the most deprived deciles.

This negative relationship shown in Figure 3 between ethnicity and material deprivation in Aotearoa New Zealand, known as the ‘distribution gap’,<sup>66</sup> remains largely unchanged since 1991.<sup>65</sup> It reveals that the social and economic structures of opportunity and privilege in our country are profoundly patterned by colonisation and racism, and there remain significant obstacles to systemic and societal change.

## Changes to our natural environment

Our natural environment is under stress. We are experiencing more frequent severe weather events, and our environment (especially our rivers and lakes) is degrading. Over half of our rivers have moderate or severe organic pollution or nutrient enrichment, which often makes them unfit for swimming or drinking.<sup>17</sup>

Most of our indigenous marine and freshwater bird species are threatened with extinction, or are at risk of becoming threatened.<sup>17</sup> Microplastics (pieces of plastic that are less than 5mm long which are formed when larger plastics break down) are now widespread throughout our marine environment and in freshwater organisms.<sup>17</sup> Groundwater nitrates already exceed human health-based limits in parts of Canterbury, Waikato and Southland, mainly due to farm fertiliser run off.<sup>68</sup> Without any intervention, nitrate levels are projected to increase further.<sup>69</sup>

## Improvements to our health and wellbeing

Despite the ongoing challenges to achieving health equity, interventions in Aotearoa New Zealand’s health sector since 2000 have led to population health gains. Since 2000, the life expectancy gap between Māori and other ethnicities has been narrowing. It was 8.3 years in 2001–2003 and had reduced to 6.6 years by 2020–2022, a 20% decrease. Inequities in some other health outcomes have also decreased modestly, such as infant mortality.<sup>15</sup>

## Public health programmes and interventions

Public health programmes and cross-sectoral interventions have contributed to improved health outcomes and life expectancy for all population groups. Programmes and policies such as immunisation, cancer screening, Smokefree Aotearoa 2025 and Healthy Homes standards have led to significant reductions in vaccine preventable diseases, cervical cancer, and health-damaging factors, such as smoking.<sup>15,70</sup>

### Reductions in Sudden Unexpected Deaths in Infancy: the positive impact of an equity-focused programme

Sudden unexpected deaths in infancy (SUDI) – also known as cot death – contribute significantly to a high infant mortality rate in Aotearoa New Zealand. Smoking together with co-sleeping is a significant risk factor for SUDI.<sup>71</sup>

In 1991, the Ministry of Health introduced the National Cot Death Prevention programme. The programme reduced SUDI by 60%. However, Māori experienced increased inequity, as the programme's messages focused on avoiding co-sleeping (which did not align with the practices of many Māori whānau), and its 'stop smoking' messaging had a greater impact on non-Māori women.<sup>72</sup>

In 1994, a Māori-led programme began, which promoted similar strategies. During the programme's first five years, the rate of SUDI amongst Māori and non-Māori decreased, despite socioeconomic risk factors for SUDI increasing. However, a five-fold disparity between Māori and non-Māori rates persisted.<sup>73</sup>

In 2005, Māori researchers, public health doctors, expert weavers and Māori midwives incorporated the wahakura (a woven flax bassinet that supports safe shared sleeping) into antenatal wānanga, linking women and their whānau to cultural practices and tikanga. This intervention, alongside a decline in the smoking rate, led to infant mortality (primarily Māori infants) dropping by 29% between 2009 and 2015.<sup>73</sup>

Smoking among Māori mothers declined even further (from 32.2% in 2009 to 19.5% in 2021).<sup>74,75</sup> Evaluations (including a randomised control trial) of the wahakura found it was safe and acceptable to whānau, so the intervention was gradually scaled up nationwide.

Although we are now living longer, more of us live with chronic conditions and their consequences, and some risks for ill health have worsened. We are less physically active now, and one in three adults has unhealthy levels of excess body weight (nearly double the proportion in 1998).<sup>76</sup> Other measures indicate our mental wellbeing has declined, especially for young people.<sup>76</sup> We have the highest rate of suicide in young people and children in the OECD.<sup>77</sup> An overall reduction in total population mortality has not necessarily reduced differences between the mortality rates of population groups.<sup>15</sup> Even as the causes of illness and death change, these inequalities persist, showing that unequal social determinants have an ongoing impact on health outcomes.<sup>78</sup>

In **Section 3** and **Appendix 4** we explore trends in determinants of health, health status and health inequities between 2000 and 2024 in further detail.

## The COVID-19 pandemic

Notably, since 2020 we have lived through a global pandemic – which continues to have effects, particularly for people with chronic illness or disability. From 2020-2022, Aotearoa New Zealand’s evidence-based public health strategies, alongside income, business and social protection measures, contributed to lower morbidity and mortality, and less negative economic impact than that experienced in most other high-income countries.<sup>79-81</sup> While global life expectancy declined by 1.6 years between 2019 and 2021 due to the pandemic, New Zealand was among the few countries that saw an increase.<sup>15</sup>

## Diverse models of community and primary care

As a result of pro-equity policies, throughout the health system we now see more diverse models of community and primary care, and many more resilient, experienced Māori and Pacific health providers, Whānau Ora collectives<sup>iv</sup> and Asian, disability and LGBTQIA+ services.<sup>v</sup>

Multiple evaluations of these programmes demonstrate the strength of diversity in practice and the effectiveness of equitable approaches.<sup>82-84</sup> Understandings of cultural safety in the health system have developed over time.<sup>85</sup> Initial steps have been made to support the health system to better understand, react, and respond to racism in health.<sup>86</sup>

## Recognising the needs and aspirations of disabled people

‘Enabling Good Lives’<sup>87</sup> is a framework co-designed by the disabled community with government since 2011. It aims to give disabled people and their families decision-making power and autonomy, support inclusion and improve wellbeing outcomes. It is backed up by the Pae Ora (Healthy Futures) Act 2022, which committed the health system to achieving equity for disabled people. This approach and associated principles have been broadly accepted by the health and disability system, although not yet fully implemented. Achieving equity requires sustainable resourcing and a nationally consistent approach that is community-led, culturally responsive, and grounded in the principles of Te Tiriti o Waitangi.

<sup>iv</sup> Whānau Ora is a Māori-led and whānau-centred approach to whānau support that was developed jointly by Te Puni Kōkiri, the Ministry of Health and Ministry of Social Development from 2010.

<sup>v</sup> LGBTQIA+ is a term that includes people who identify as lesbian, gay, bisexual, transgender, queer, intersex or asexual, or who have more diverse sexualities, genders and sex characteristics.

## Knowledge, evidence and analytical tools

We now have more evidence and experience from implementing policies and interventions, and better analytical tools, to understand and measure which policies and interventions in and outside the health system are effective at improving health outcomes and health equity. The most effective of these include redistributive tax policies and income support, high quality social housing, early childhood intervention and access to quality health and social services.<sup>6,78,88-99</sup>

We also better understand the factors that support people to be resilient and enjoy good health and wellbeing. These factors – especially for children and young people – include whānau connection and trust, identity and community, and access to culture and language.<sup>29,100,101</sup>

No matter how old you are, feeling loved by your family is centrally important.<sup>102</sup>

There's a massive difference between walking into a room and being tolerated [...] versus being celebrated. Community for me means people who know what it's like [to be me]. Especially for people at the intersection of different identities.  
[Rangatahi, The HIVE]

The inter-relationship between the health of families, communities and our natural and built environment is now well recognised.

We understand more about how determinants of health (such as discrimination, racism, poor-quality housing, air pollution and social isolation) affect our health, through structural, social, behavioural, physiological, and epigenetic mechanisms.<sup>103-106</sup>

We have gained important knowledge about how life course and intergenerational factors influence health and wellbeing, through longitudinal studies (including local studies such as the Dunedin Multidisciplinary Health and Development Study and Growing Up in New Zealand).<sup>107,108</sup> These studies follow health and other outcomes of children from before birth to adulthood and older age. They have demonstrated the importance of interconnections between many determinants of health, which result in greater privilege or intersecting disadvantage.

In **Section 2** we explore in more depth how determinants of health are distributed, and our understanding of the mechanisms by which they affect our physical and mental health.

## 2 Nourishing the tōtara in the forest

A large volume of research has been carried out worldwide over the last three decades on the relationships between the determinants of health, health outcomes and health inequities. At the same time, there has been substantial policy development, and implementation and evaluation of strategies and programmes aimed at addressing the causes and impacts of health inequities. This has significantly increased our understanding of why and how health outcomes of different social groups are not equally distributed, and how this can be addressed.<sup>7,78,90,109</sup>

In other words, we now know a lot more about how resources, 'the soil' in our metaphor, (such as secure housing, education outcomes, social cohesion and freedom from discrimination) nourish the tōtara, while an absence of resources starves the tree. We also understand better how the 'bedrock' beneath the soil, representing fundamental rights and societal power, positively or negatively influences the distribution of those resources.<sup>104,110</sup>

In addition, through epigenetic, human developmental and biological research, we understand much more now about how the determinants can directly affect our bodies through biological mechanisms that lead to physical and mental health outcomes.<sup>66,111</sup>

## Why are determinants unevenly distributed?

Compared with 25 years ago, our society is more prosperous, we live longer, and many of our health outcomes have improved. These changes reflect improvements in critical determinants of health including education, income, and employment. However, these benefits have not been evenly distributed.<sup>15,70</sup> While our society has many strengths, we also recognise it has been heavily shaped by colonisation, racism, discrimination, Pākehā privilege and our free market economic system.<sup>28,43,112-118</sup> These influences act in opposition to the positive rights and obligations in the bedrock that would nourish a healthy forest - they systematically limit who can access the best and most fertile soil.

Williams' model, adapted by Te Kupenga Hauora Māori researchers at the University of Auckland,<sup>43</sup> depicts colonisation as the common underlying process behind these 'basic causes' of health inequity. It illustrates how resources and social status are distributed in Aotearoa New Zealand. This means our education, economic, justice and political systems work better for some groups than for others.<sup>66,111</sup> Consequently, some of us experience the relative prosperity of warm housing, rewarding jobs, and the ability to access health care services, if and when we need them. Others of us are much more exposed to drivers of ill health, such as material deprivation, unemployment, household crowding, and barriers to health care.<sup>70,119,120</sup>

We explore some of the 'bedrock' influences below, including colonisation, racism and discrimination, and our type of economic system (neoliberalism); how they operate and influence our health and wellbeing.

## Colonisation and colonialism

Colonisation (and its practices, colonialism) is based on ideologies of European superiority and empire-building.<sup>115-117</sup> Globally, colonisation has exploited Indigenous peoples and marginalised groups, enabling colonial settlers to accumulate economic benefits and wealth.<sup>27,29,43,118,121</sup>

### Effects of colonisation on Aotearoa New Zealand

Colonisation has profoundly shaped, and continues to shape, the social and economic conditions that underpin health and wellbeing outcomes in Aotearoa New Zealand.<sup>115,118,122</sup> To understand how colonisation drives ill health, we need to recognise the historical and systemic inequities that are still active today. As a negative influence, colonisation starves, rather than feeds, the soil and root structure of tōtara in the forest.

The centrality of racism to colonialism in Aotearoa New Zealand is reflected in racially structured access to social, political and economic resources that manifests as privileged social outcomes for New Zealand European/Pākehā, and in stark racialised inequities in health status between New Zealand European/Pākehā and Māori.<sup>123</sup>

From the 14th to 19th centuries, Māori developed rich cultural practices and norms, structurally underpinned by whānau, hapū and kāinga. Land was shared within and between hapū, and kai and other materials were produced communally.<sup>28</sup> Māori also shared power, and hapū made decisions collectively. These societal settings meant that access to land, rivers and oceans was considered a collective resource. Likewise, beyond inter-hapū or inter-iwi conflict, few outside influences could influence decisions about the day-to-day lives of Māori.<sup>28</sup>

Within decades of arriving in Aotearoa New Zealand, British settlers had, through colonial practices, usurped the tikanga (societal laws and norms) that Māori had established over more than 500 years. Māori lost access to land through illegal sales, confiscation, and alienation, with associated loss of access to food production and other resources.

Decisions about day-to-day living were now made by a colonial government with no Māori representation or control.<sup>28</sup> The sharp and rapid losses inflicted on Māori by colonisation reverberate today. Colonisation is not a distant historical event; it is a lived reality that continues to influence daily life and privilege Pākehā.<sup>43,115</sup> However, Māori have not been passive recipients of this process. They have survived – and often thrived – resisting colonial structures and systems, sometimes at great personal and collective cost.<sup>27,115</sup>

### **Aotearoa New Zealand's colonisation of Pacific nations**

Pacific peoples' experience in Aotearoa New Zealand is entwined with New Zealand colonial history in the Pacific, racial capitalism, Pacific migration following World War II and marginalisation.<sup>124,125</sup>

#### **Key events in Aotearoa New Zealand's colonisation in the Pacific<sup>124</sup>**

In 1901 Aotearoa New Zealand annexed Cook Islands and Niue, formally making them part of New Zealand.

In 1899 Britain signed away Samoa to Germany and the USA, but the outbreak of World War I gave Aotearoa New Zealand the opportunity to invade and occupy the German colony.

In 1920 the League of Nations recognised Samoa as a New Zealand colony.

In 1925 Tokelau became a New Zealand territory.

Large-scale migrations of Pacific peoples to Aotearoa New Zealand began in the 1950s and continued throughout the rest of the 20th century.<sup>126</sup> Migration was often motivated by aspirations for a better education and prosperity, which would also support families and villages at home. Most Pacific migrants come from Cook Islands, Fiji, Niue, Samoa, Tokelau or Tonga, but some come from other Pacific nations.<sup>124</sup>

In 1945 the population of Pacific peoples in Aotearoa New Zealand was just over 2,000; now it is nearly 443,000.<sup>127</sup> The population is diverse, young (half the population is under 25 years), growing and mostly urban (62% live in Auckland). Nearly half of Pacific peoples identify as Samoan, and nearly a third of those under 15 years also identify as Māori. Two-thirds of the population were born here.<sup>127</sup> Of those born overseas, more than 60% have lived in Aotearoa New Zealand for more than 10 years. One-third of Pacific households include extended families, and many span three or more generations.<sup>127</sup>

## Pacific peoples' experience in Aotearoa New Zealand

Government and industries in Aotearoa New Zealand saw Pacific peoples as cheap labour for a growing economy, reflecting our colonial relationship with the Pacific.

But by the early 1970s, Aotearoa New Zealand's economy was in decline, and political and public attitudes turned against Pacific migration. This led to increased hostility and overt racism towards Pacific peoples. Police and immigration authorities targeted Pacific peoples for immigration checks, despite 40% of 'overstayers' being British and American. This culminated in the infamous Dawn Raids, in which Pacific peoples' homes were invaded as police looked for overstayers to deport.<sup>124</sup>

New Zealand is a nation that exists on Pacific islands but does not, and perhaps cannot, see itself as a Pacific Island nation or its people as Pacific Islanders...Pākehā New Zealanders live on Pacific islands but many – perhaps most – still describe themselves as 'Europeans'... In these kinds of understandings and claims there can be no acknowledgement of Pacific place and Pacific histories, no claiming of a Pacific connection, let alone a Pacific-based identity....<sup>124</sup>

Pacific peoples have made significant contributions to Aotearoa New Zealand, culturally and economically. A 2018 study for the Treasury estimated Pacific peoples contributed \$3.1 billion to production GDP and \$8 billion in income GDP to the economy.<sup>128</sup>

Despite many having New Zealand citizenship, Pacific peoples migrating here faced and continue to face cultural and language barriers, personal and institutional racism, and difficulty accessing education, employment and higher incomes. This has led to material deprivation and inequities in health outcomes.<sup>70,124</sup>

Many Pacific families are struggling with the high costs of rent and poor quality of housing.<sup>129</sup>

The life expectancy of Pacific peoples living in Aotearoa New Zealand is nearly six years lower than that of European New Zealanders.<sup>129</sup> This, and other health inequities, are directly associated with discrimination and differential access to education, income, housing and employment. These differences limit Pacific peoples' opportunities to achieve the best health possible for their whānau, and to access timely, high-quality health care.<sup>129</sup>

Pacific peoples in Aotearoa New Zealand are more likely to experience material deprivation than other New Zealanders. However, Pacific peoples have maintained stronger community connections, bonds of trust and religious identity than New Zealanders as a whole. They also rate their health and life satisfaction highly, although these measures have declined recently.<sup>76</sup> The strength, resilience and innovation of Pacific communities and Pacific health workers were evident during their highly effective response to the COVID-19 pandemic.<sup>14</sup>



## Discrimination

Human, social, and economic rights, and freedom from discrimination, poverty and inequity, are fundamental to health and wellbeing. They form the bedrock of our tōtara forest.

These rights are enshrined in New Zealand legislation, including the Human Rights Act 1993 (HRA) and Bill of Rights Act 1990,<sup>130</sup> although full realisation of these rights is incomplete. The HRA makes it unlawful to discriminate on the grounds of sex (including pregnancy and childbirth), marital status, religious belief, ethical belief, colour, race, ethnic or national origin (nationality and citizenship), disability, age, political opinion, employment status, family status or sexual orientation. As with international human rights legislation, the HRA allows special measures that will advance disadvantaged groups and address historical disadvantage to achieve equality.<sup>130</sup>

Many people understand discrimination as something that happens at a personal level, between individuals, but there are collective effects. The 2021 Whakatika report, based on a survey of Māori experiences of racism, notes that 'Legal definitions of racism and discrimination, which look only at an individual without looking at the impact on whānau, hapū, iwi and Māori communities, fall short of capturing the true costs of racism as an attack on rangatiratanga.'<sup>131</sup>

Discrimination operates at structural and institutional levels. These types of discrimination shape what happens when we look for work or housing or seek health care.<sup>132</sup> Māori and Pacific peoples' experience of discrimination is reflected in their employment, housing, and health outcomes. Other groups, including disabled people and LGBTQIA+ people, also experience these types of discrimination, which are maintained and reinforced through social norms, public policy, economic systems, and organisational practices.

In this section of the report, we present evidence of how different forms of discrimination affect the health and wellbeing of individuals, whānau, and populations.

### Racism

Without racism Aotearoa would be better. [Mokopuna, aged 11-13, Rural Waikato]<sup>133</sup>

Racism can be understood as an organised and complex system, underpinned by false beliefs that people's race or ethnicity makes them inherently superior or inferior. Racism operates to give a dominant racial or ethnic group privileges, while simultaneously disadvantaging others.<sup>134</sup> Racism underlies the ideology of colonialism but is broader than that.<sup>113,123,135,136</sup> In Aotearoa New Zealand, racism underlies justifications for the dispossession of land and rights from Māori, and undermining of Māori knowledge (mātauranga Māori), spirituality and practices.<sup>28</sup>

### Definitions of racism<sup>111</sup>

**Institutionalised racism** is reflected in disadvantaged access to physical, economic, and social resources resulting in, for example, deep and persistent socio-economic inequalities.

**Interpersonal (personally mediated) racism** refers to the everyday prejudice and discrimination that Indigenous people or minority ethnic groups experience.

**Internalised racism** is the acceptance by members of Indigenous people or ethnic groups of negative messages about their own abilities and intrinsic worth.

For Māori and Pacific peoples, racism, and other forms of discrimination, are a pathway to significant health inequities.<sup>137-139</sup> Māori, Pacific peoples and Asian peoples report a much higher prevalence of racial discrimination, and experience more forms of discrimination, than Pākehā, including when they access key determinants of health such as housing, employment and education. Young Māori, Pacific peoples and Asian peoples are two to five times more likely than young Pākehā to be exposed to racism. This exposure is strongly associated with poorer mental and physical wellbeing and scoring lower on having a sense of identity and of belonging.<sup>138</sup>

Getting treated different and people think its ok cause they already decided you don't deserve anything else. [Mokopuna Māori aged 14-16]<sup>133 (p.16)</sup>

Bet you that the people in the Beehive don't know what it means to be poor and to deal with racism. [Mokopuna Māori aged 14-16]<sup>133(p.22)</sup>

In the health system, institutional and interpersonal racism have also been extensively documented. This takes the form of Māori and Pacific peoples experiencing differential access to health care, receiving different quality of care and poorer health outcomes.

There needs to be an acknowledgement of the explicit and implicit biases and racism experienced in the system, which contribute to mistrust in the system.<sup>140(p.28)</sup>

The Whakatika report found 93% of Māori surveyed felt racism affects them every day. Respondents reported experiencing racism in daily life – such as when shopping, when te reo is mispronounced and when Māori are negatively portrayed in media images.<sup>131</sup>

International evidence shows repeated exposure to racism leads to accumulating disadvantage and poorer health outcomes over the life course.<sup>141</sup> Experiences of racism and other forms of discrimination affect an individual's health directly through stress-induced biological alterations and epigenetic changes. As the number of forms of discrimination a person experiences increases, the negative impact on their health increases.<sup>123</sup>

## Ableism and disablism

In 2023, the Household Disability Survey estimated that 17% of people in Aotearoa New Zealand, or around 851,000 of us, are disabled.<sup>142</sup> Women, older people, Māori and LGBTQIA+ people are more likely to experience disability than other groups.<sup>142,143</sup>

Despite on average being younger than the total population, Māori and LGBTQIA+ people have higher rates of disability than other groups. Pacific peoples are also more likely to experience disability than Pākehā, after adjusting for age differences between those populations.<sup>144</sup>

We [disabled people] are children, young people and adults, we are parents and grandparents. We are also friends, family and whānau. What we want is no different to anyone else in New Zealand; we want to belong, contribute to our families and whānau and participate in our communities.<sup>145(p.12)</sup>

Ableism and disablism refer to types of disability discrimination. Ableism favours people who are not disabled and discriminates against those with disabilities (whether those disabilities are visible or not).<sup>146</sup> For example, ableism includes designing a building without a ramp or lift for people who need them, or having inflexible working options or workplace accommodation.

Ableism was present in our historical approaches to disability such as the segregation of disabled people into institutions, and the 'medical model' approach to disability.<sup>147</sup> Ableism reduces disabled people's opportunities and access to resources (such as housing and income), which affects their physical and mental health.

Disablism is an inherent belief that disabled people are inferior to people who are not disabled.<sup>148</sup> Disabled people can experience disablism in the form of direct, conscious discriminatory or abusive acts, such as a disability slur, being ignored or being spoken to in a patronising way. In health care, discriminatory assumptions about disabled people can lead to 'diagnostic overshadowing'. This means that new symptoms are attributed to a known disability instead of being investigated. It can also lead to 'therapeutic pessimism', where a disabled person is not offered a treatment because of their underlying disability.<sup>149</sup>

I want the [health system and mental health] system to start seeing my disability as my superpower, not my barrier.<sup>150</sup>

Aotearoa New Zealand has adopted the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) social model of disability.<sup>151</sup> The social model encompasses a whole-of-life, strengths-based approach, looking at a disabled person's strengths across their lifetime. While it recognises that individuals have impairments,<sup>vi</sup> it sees the disabling elements as being ableist systems, attitudes, and structures, rather than the impairment itself.<sup>145</sup> These ableist systems drive inequities in access to determinants of health for disabled people and also create health system barriers.

Racism, colonisation and ableism are interconnected in New Zealand.<sup>147</sup> Researchers and disability advocates have critiqued the often deficit, Western view of disability. This has failed to consider the '...disabling impacts of being disconnected from whakapapa, te reo Māori, tikanga and mātauranga Māori, and inability to access traditional lands, waters or marae.'<sup>152</sup>

### **Discrimination based on sex, gender or sexual orientation**

Despite being the first country to give women the vote in 1893, and decades after the 'second wave' of feminism in the 1970s,<sup>153</sup> women in Aotearoa New Zealand continue to face disadvantage in some employment sectors. Women face an ongoing gender pay gap, which is even greater for Māori, Pacific and disabled women.<sup>154</sup>

In Aotearoa New Zealand, attitudes towards roles at home and in parenting are generally pro-gender equality. However, in reality women still carry out the majority of household tasks.<sup>155,156</sup> The value of women's unpaid work and caring is still largely ignored and economically undervalued (as is their paid work).

Single women, disabled women and women who are solo parents experience a higher level of material deprivation and poorer mental health than other women.<sup>157</sup> Women also have much lower retirement savings than men.<sup>158</sup> Many single parent households (most are led by women) report they experience stigma and discrimination.<sup>159</sup>

Women are more likely than men to suffer abuse from a partner (this includes repeat victimisation) and sexual violence.<sup>160,161</sup> Women and girls experience disproportionate online harm, sexual harassment and economic harm. Economic harm can involve not having control over financial resources, having access to money withheld or being forbidden to attend school or work.<sup>160</sup> These discriminatory experiences can manifest in poor mental and physical health outcomes.

<sup>vi</sup> An impairment means a functional limitation that prevents a person carrying out certain tasks and functions in their daily life without support. Common impairments include deafness, blindness or an inability to walk. Disablement occurs when a person with an impairment is not supported to take part on an equal basis with others. The social model places responsibility for this exclusion on systems, attitudes and environments, and not on the person with the impairment.

Experiences of discrimination, harassment and violence based on sexual orientation are also well documented.<sup>123,162</sup> Data from the 2023 Census shows that 1 in 20 adults (4.9%) identify as LGBTQIA+. <sup>143,163</sup> The abbreviation MVPFAFF+ is also used in Aotearoa New Zealand.<sup>143</sup> It encompasses diverse gender and sexuality expressions and roles across Pacific cultures:

- mahu (Tahiti and Hawaii)
- vakasalewa (Fiji)
- palopa (Papua New Guinea)
- fa'afafine (Samoa)
- akava'ine (Cook Islands)
- fakaleiti (leiti) (Tonga)
- fakafifine (Niue).

Experiences of discrimination in employment, housing, higher rates of violence from others and feeling less safe are associated with greater substance use and poorer mental health, especially for trans and non-binary people.<sup>164</sup>

### **Intersecting discriminations**

The interaction of different forms of discrimination has increasingly been recognised as having cumulative negative impacts on wellbeing. For example, disabled, Māori or ethnic minorities who are LGBTQIA+ experience the compounding effects of intersecting discriminations.<sup>165</sup> Recent research suggests that trans and non-binary disabled people, are more likely to experience discrimination, be verbally harassed, feel unsafe at school, be treated unfairly by government agencies and have poorer mental health outcomes.<sup>162,166</sup>

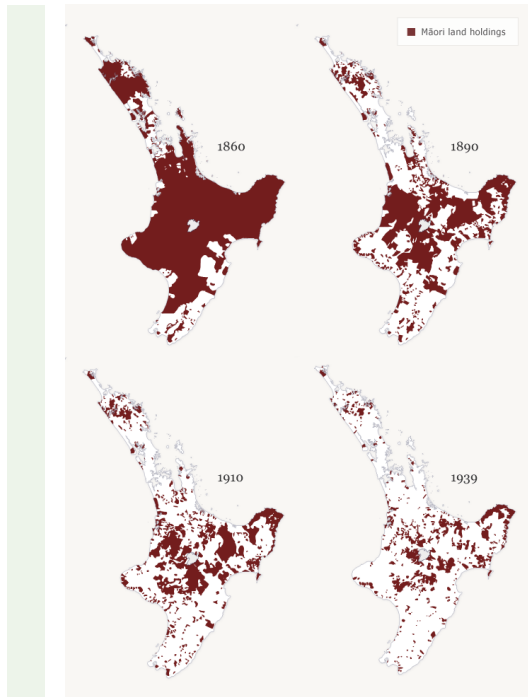
## **Our economic system**

Our economic system is part of the bedrock – an important influence on multiple determinants of health and how they are distributed in our society.

### **Land ownership**

Access to land is a key resource and source of wealth in Aotearoa New Zealand. In the 19<sup>th</sup> century, land owned by Māori substantially reduced, much through illegitimate sales, confiscation and alienation (Figure 4).<sup>28</sup> By the 20<sup>th</sup> century, most farms and forests were owned by Pākehā families. New Zealand has since developed a market economy, made up of larger corporations and small commercial entities.<sup>167</sup>

**Figure 4. Māori land loss between 1860 and 1939**



Source: Orange C. Te Tiriti o Waitangi | The Treaty of Waitangi. An Illustrated History. Wellington: Bridget William Books 2021.<sup>168</sup>

### **Changing economic models and the impact of neoliberalism**

In response to economic depression and poverty in the 1930s, the government introduced greater regulation and state ownership of key utilities (such as electricity, telecommunications and public transport), alongside a developing welfare state (state funded health care, education and social benefits). This resulted in a mixed economic model. In the 1970s and 1980s, economic neoliberalism emerged globally. Neoliberalism is characterised by prioritisation of the ‘free’ (unregulated) market, an emphasis on economic competition, individual ‘freedom’ (market choice), and reduced social service provision by the state.<sup>169,170</sup>

As a result, rapid structural economic change took place in Aotearoa New Zealand from 1984 into the 1990s. This significantly reduced social housing and social benefits, led to high unemployment for Māori and young people, increased the number of people in casual employment, reduced real incomes for Māori and Pacific households and widened income inequality.<sup>169</sup> These structural changes disproportionately impacted Māori and Pacific peoples and were associated with widening health inequities and plateauing of Māori and Pacific peoples’ life expectancy during the 1990s.<sup>171</sup>

Liberalising the economy has had ongoing effects that benefit some groups but substantially disadvantage many others. For example, one feature of neoliberalism is deregulation of the labour market, which reduces job security and work safety.

Unemployment is used as a tool to lower inflation, and this also has disproportionate impacts on young people, Māori and Pacific peoples.<sup>172,173</sup> Unemployment is associated with having a lower income, housing insecurity, and poorer health and mental health outcomes.<sup>167,172</sup> Some regions in Aotearoa New Zealand have experienced, and continue to experience, high rates of intergenerational unemployment, with different regions experiencing very different labour market cycles. For example, during labour market contractions, Northland's unemployment rate typically increases by twice as much as Wellington's.<sup>174</sup>

## Income inequality and wealth

During the 1990s, income inequality rose sharply. Although this inequality was partly moderated by progressive taxation policies, the distribution of wealth remains highly skewed.<sup>62</sup> While our taxation and transfer (social benefits) systems appear progressive and pro-equity when they are measured against taxable income, the Household Economic Surveys from 2015 to 2021 show that the wealthiest 10% of households hold around 50% of the country's household financial assets. The poorest 20% of households hold only one percent of the country's household net wealth.

| The cost of living is a constant worry for me and my family.<sup>129</sup>

Research by the Treasury and Inland Revenue (IR) shows that our current taxation system results in the wealthiest three hundred families in New Zealand paying an effective tax rate that is less than half the rate that middle-income New Zealanders (such as people who work as plumbers or nurses) pay. IR found that wealthy New Zealanders usually get their income from return on investments; around 80 percent of their economic income is capital gains (which is untaxed in Aotearoa New Zealand).<sup>62,175</sup>

The purported benefits of free-market competition (such as lower costs to consumers) have often not materialised. For example, New Zealanders continue to spend a high proportion of their income on housing and food, reflecting our housing market's failure to provide affordable homes, and the current supermarket duopoly.<sup>176,177</sup> Almost two in five people in Aotearoa New Zealand today find it hard to meet every day costs,<sup>178</sup> two-thirds of New Zealanders do not feel 'well off', and one in four sometimes do not have enough to eat.<sup>179</sup>

## Neoliberalism and healthism

Collective values underlie the rationale for social safety nets and the 'social contract' that Aotearoa New Zealand has aspired to. However, neoliberalism values individual agency and personal choice over collective action. It puts less emphasis on reciprocity and collective social obligations.<sup>169,180</sup>

Neoliberal views of health (known as 'healthism') advocate that individuals have the power and responsibility to manage their own health. Although this is partially true, healthism fails to recognise how structural factors discriminate against some groups, and affect individuals' behaviour and choices (see below **How determinants affect us**).<sup>181,182</sup>

For example, agricultural and food industries shape our environment and economy in ways that encourage us to consume more affordable but less healthy foods. By focusing on individualism, healthism also ignores evidence that social cohesion has a positive impact on population health and other social wellbeing outcomes (such as, better personal safety and less crime).<sup>183,184</sup>

## Summary

The bedrock elements which drive the maldistribution of resources in our society today are not random nor fixed. For example, discrimination and colonisation can be addressed through legislation and the social policies the government chooses to implement; our economic system can be modified. To improve our collective health and eliminate health and wellbeing inequities, positive elements in our bedrock need to be enhanced, and the negative influences addressed.

# How determinants affect us – individual and collective mechanisms

Social and environmental exposures influence health in many ways. This may be directly – for example, a higher risk of infectious diseases for children living in crowded housing – or indirectly, for example living in an area with a high density of alcohol and fast-food outlets, which influences peoples' drinking and eating patterns. In this section we summarise what we currently know about the ways in which determinants of health may affect our individual and collective health through biological and physiological mechanisms. We examine some of the mechanisms by which social and environmental exposures 'get under the skin'.

## Epigenetics

Epigenetics refers to how our environment can cause changes that affect the way our genes work. We inherit more than just DNA from our parents. Genes in the DNA sequence have epigenetic markers that switch our genes 'on' or 'off'.<sup>185</sup> We now know that gene sequences do not translate directly into our physical characteristics (phenotypes), and that changes to genes can occur because of changes in our environment such as stress, air pollution or what we eat. These environmental factors generate changes in genes that can then be transmitted across generations.

| 'Bodies express our ecology...'<sup>186</sup>

These epigenetic changes affect cellular functions, physiology and how our bodies work. Epigenetic changes are reversible – they do not cause genes to mutate (to change the DNA sequence), but they can change how the body 'reads' the DNA sequence.<sup>185</sup>



Epigenetics change as we develop and age, because we have differential exposure to environmental factors over the course of our lives.<sup>26</sup> Pregnancy and early childhood are particularly important periods, because the brain develops rapidly at those times (this is known as 'neuroplasticity').<sup>110</sup> Our epigenetics continue to change over the course of our lives in response to our changing environmental exposures.<sup>26</sup>

Today, we recognise that the human genome cannot be seen in isolation from the environmental determinants of health and the genomic implications of non-human life that surrounds and is part of "us".<sup>187</sup>

Environmental factors can cause changes in parents' epigenetic markers that can be passed on to their children. They can also alter gene expression in a foetus after fertilisation and during the infant's development in utero. Environmental exposures before and during pregnancy are particularly important for the child's health and subsequent risk of chronic diseases (such as obesity, type 2 diabetes and cardiovascular disease) in later adulthood.<sup>110,188</sup>

For example, if a pregnant woman has limited access to healthy food during pregnancy, her unborn child may also experience suboptimal nutrition and consequently have poorer metabolic health as a child.<sup>188</sup> Parental exposure to alcohol, tobacco, or other drugs at the time of conception or during pre-birth development increases the child's risk of behavioural, physical and mental health issues that may be lifelong. Conversely, ensuring good nutrition and protection from unhealthy exposures during pregnancy has lifelong benefits for children's health.<sup>110</sup>

## Toxic stressors

Developmental research and longitudinal studies, including studies in Aotearoa New Zealand,<sup>107,108</sup> have demonstrated the effects of 'toxic stress' on health. Toxic stress describes what happens when our physiological stress-response system is activated excessively or for a prolonged period. Toxic stress is a response to an experience of severe stress, such as witnessing or experiencing neglect or violence (often called an adverse childhood experience (ACE)). This stress reaction can affect many aspects of physiology, including brain development, and the immune, nervous and endocrine (hormone) systems. It is also associated with an increased risk of many chronic diseases in later life.<sup>189,190</sup>

We know also that parent or caregiver attachment and bonding, play and interactive reading are important for children to develop 'executive functions' – including the ability to learn, exert self-control and show empathy.<sup>191</sup> These functions influence children's subsequent educational achievement, interpersonal relationships, and mental health.

Research has also examined the impact that stressors such as discrimination and racism have on health. While structural discrimination can affect access to health determinants like employment (see **Discrimination**), an individual's experience of discrimination is itself a potent biological stressor.<sup>43,66</sup> The links between self-reported racial discrimination and mental and physical health outcomes have been well documented. Research indicates that reported exposure to discrimination is associated with poor mental health, adverse cardiovascular outcomes, excess body weight and high blood pressure.

The evidence about how epigenetics and stressors contribute to health and wellbeing shows that even health issues that we tend to think are due to our DNA or family traits are influenced by wider determinants of health. But toxic stressors can be prevented or removed. And just as epigenetics are changed by negative environmental factors (such as experiencing racism, poverty, pollution or poor diet), they can also respond to positive changes in the environment. Human and animal studies show that epigenetic changes can persist across multiple generations.<sup>103</sup> Therefore, distributing these positive factors more fairly across society gives us the potential to interrupt multigenerational cycles of ill health.

## Socioeconomic patterning

Another way that determinants of health affect the health of communities is through socioeconomic 'patterning' of health-damaging factors. For example, in Aotearoa New Zealand, material poverty, ethnic segregation, poor-quality housing and homelessness are often concentrated in the same spaces.<sup>124,192</sup> Communities that experience material deprivation also encounter layers of other health-damaging factors. Compared to wealthier areas, communities experiencing material deprivation have above average numbers of fast-food outlets, alcohol off-licences, and gambling and vaping outlets.<sup>193-197</sup> They also tend to have higher rates of air pollution, poorer public transport and lower access to green space.<sup>194,198,199</sup> This illustrates the cumulative, complex relationships between our environment and our health.<sup>200</sup> [See the '**Healthy Location Index Story Map**' in **section 3**].

## The collective experience

The effect of a negative economic environment on population health outcomes and health equity (the 'collective' experience) is also well documented. For example, the collapse of the USSR had an adverse effect on total population mortality and health inequalities in Russia and some East European countries in the 1990s.<sup>201,202</sup> More recently, life expectancy for the least privileged 20% of men in the UK has significantly declined since 2011,<sup>96</sup> while life expectancy in most European countries has also flattened. These trends are associated with economic austerity, unemployment, rising obesity rates and the COVID-19 pandemic.<sup>96,203</sup> These negative factors have disproportionately affected people who live in Europe's most socioeconomically deprived communities.<sup>204</sup>

The continued improvements in life expectancy in five countries [Norway, Iceland, Belgium, Denmark, and Sweden] during 2019–21 indicate that these countries were better prepared to withstand the COVID-19 pandemic. By contrast, countries with the greatest slowdown in life expectancy improvements after 2011 went on to have some of the largest decreases in life expectancy in 2019–21. These findings suggest that government policies that improve population health also build resilience to future shocks. Such policies include reducing population exposure to major upstream risks for cardiovascular diseases and neoplasms, such as harmful diets and low physical activity, tackling the commercial determinants of poor health, and ensuring access to affordable health services.<sup>204</sup>

Aotearoa New Zealand's collective experience has also been researched. As noted above, the 1980–1990s was a period of rapid structural economic change, when social housing declined, unemployment amongst Māori and young people increased, casual employment increased, the real income of Māori households fell, and income inequality rose.<sup>205</sup> Despite life expectancy of the total population increasing between 1980 and 1999, inequities in mortality **increased**. The gap between Māori and Pacific peoples, and non-Māori, non-Pacific peoples progressively widened.<sup>171,205</sup> For example, the gap between life expectancy at birth for Māori men and that of non-Māori, non-Pacific men increased from 6.3 years in 1980 to 9.9 years by 1999.

During the following decade (2000–2010) incomes and employment improved, and the life expectancy gap reduced. However, large absolute and relative disparities between the health and mortality of Māori and Pacific peoples, and that of non-Māori, non-Pacific peoples, have persisted, particularly related to some cancers and diabetes.<sup>206</sup>

# 3 How is Aotearoa tracking?

## Trends in determinants of health and in health outcomes

In this section we look in more depth at trends in some critical determinants of health and in health status, where possible looking back to the year 2000. The aim of our analysis is to assess progress in these areas, and as importantly, to understand any changes in the absolute or relative differences between population groups for these indicators over the period.<sup>vii</sup>

We identified relevant indicators of determinants from wellbeing and health equity monitoring frameworks developed here and internationally.<sup>207-209</sup> We assess differential progress in a selection of these indicators (by ethnic group, age, disability, gender and/or socioeconomic deprivation, where applicable). We then describe trends in inequities in selected health and wellbeing outcomes over the same period.

We acknowledge that these data have important limitations and represent only a part of the rich and complex daily experiences of life for people in Aotearoa New Zealand. It is also important to note the limitation of univariate analysis (that is, analysis of one indicator at a time). As we increasingly understand the interconnectedness and intersectionality of determinants and health outcomes, this likely underestimates the compounding disadvantage experienced by those most affected by inequities.

Data that we have sourced on determinants of health are publicly available from many sources (**Appendix 4**). The main sources of data are the Census and national surveys. These data have many limitations, including the quality of ethnicity data collection. Over time there have been changes in questions that are asked and the extent of coverage. The various data collections may also define groups differently (e.g. for disability, by total or prioritised ethnicity). These limitations are further discussed in **Appendix 4**.

<sup>vii</sup> Absolute inequality reflects the magnitude of difference in an indicator between two subgroups (and retains the same unit of measure as the indicator). Relative inequality measures show the proportional differences for an indicator among subgroups.

# Trends in key determinants of health 2000-2024

## Income

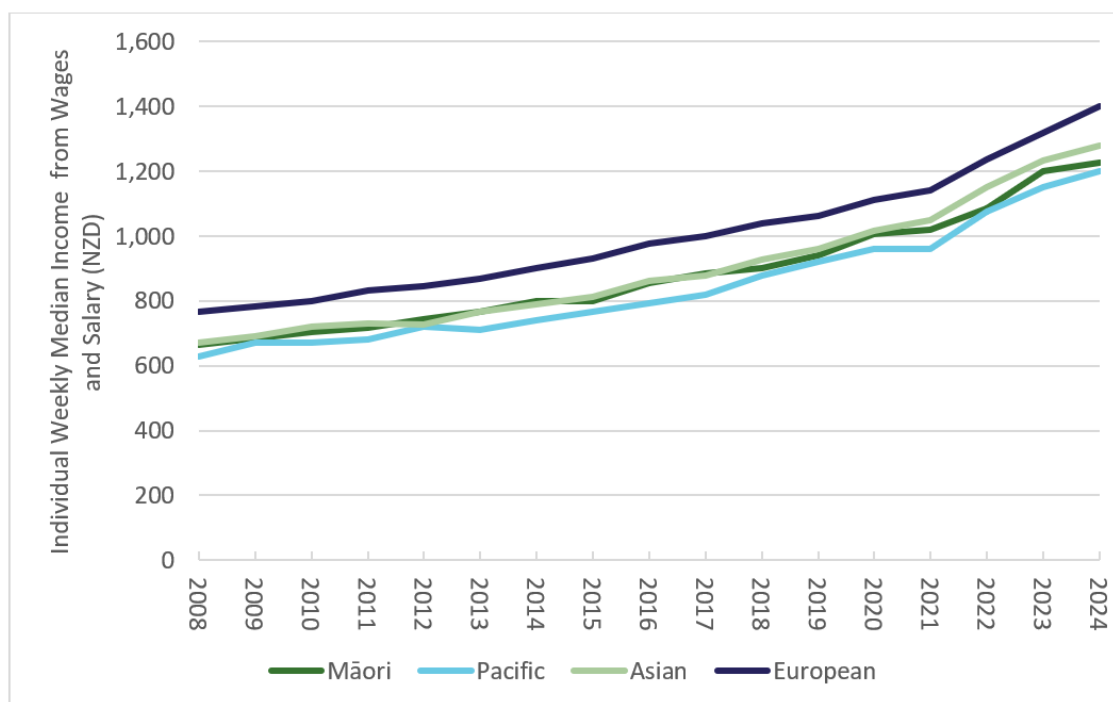
There is a strong association between income and health status.<sup>210,211</sup> Income provides access to resources like adequate housing and healthy food to support wellbeing.

The stress that can result from a lack of financial security for households is harmful to health. Material poverty in childhood is associated with poorer cognitive, behavioural and health outcomes, and negatively influences opportunities for education, adult income and employment, and health outcomes through the life course.<sup>212,213</sup>

In Aotearoa New Zealand, the median individual weekly income increased between 2008 and 2024 for people of all ethnic groups. There was a persistent gap between ethnic groups, with median weekly income from wages and salaries for Europeans \$200 higher than for Pacific peoples and \$173 higher than for Māori in 2024 (unadjusted for inflation), with no change in this absolute difference between 2008 and 2024 (Figure 5).

Women have lower median hourly earnings than men. The gender pay gap decreased from 16.2% in 1998 to 8.2% in 2024 but varies for different groups of women.<sup>214</sup> In 2024 the gender pay gap (compared with all men) for wāhine Māori (15%), Pacific peoples (17%), and disabled women (14.2%) was significantly higher than for European women (3.6%).<sup>154,215,216</sup>

**Figure 5. Individual weekly median income from wages and salary by total response ethnicity, 2008 to 2024**



Note this data is not inflation-adjusted.

Source: Stats NZ Aotearoa Data Explorer; Household Labour Force Survey

Household incomes also increased from 2007-2021, after accounting for inflation. Real incomes increased more in absolute terms for higher income households than low-income ones, but there was a slightly bigger relative increase for low-income households.<sup>217</sup> This may be explained by increases in hours worked by low-income families, increases in Working for Families Tax credits and the indexation of Superannuation for older people.

For households with low income, housing costs take up a large proportion of income, so it is important to examine income after housing costs (AHC) have been considered. Low-income households with children saw smaller income increases than other low-income households after housing costs were included.<sup>217</sup>

Data on household income by ethnicity is only publicly available from 2020. This recent data available mirrors inequities in individual income data by ethnicity. The annual household incomes for Māori and Pacific peoples remained around 20% lower than for Europeans from 2020 to 2024.<sup>218</sup> Median income after housing costs for Māori, Pacific, Asian and European households with children showed an approximately 35% real (CPI-adjusted) gain between 2007 and 2023, but with persistent inequities between ethnic groups.<sup>219</sup>

The Household Disability Survey (2023) found higher levels of income inadequacy for disabled people. Just under half (47%) of disabled people lived in households that reported enough or more than enough household income, in contrast to 67% of non-disabled people.<sup>142</sup>

## Income inequality

Greater income inequality at a national level is associated with poorer health and wellbeing outcomes and larger health inequities, although the mechanisms for this are debated.<sup>119,220,221</sup> Life expectancy, infant death rates, child maltreatment, obesity and mental health outcomes have been shown to be poorer in societies with greater income inequality.<sup>221</sup> Conversely, reducing income inequality has potential benefits for society as a whole, as well as for those whose material circumstances are improved.<sup>222,223</sup>

Aotearoa New Zealand experienced large increases in income inequality in the late 1980s and 1990s, and this inequality has largely persisted.<sup>224,225</sup> The Gini co-efficient is a measure of income inequality (from zero reflecting perfect equality to 1, where all the income would belong to the top income group). Income inequality peaked in 2015, with a Gini co-efficient of 0.41 (after housing costs), then decreased slightly to 0.37 in 2024. However, income inequality remains high compared with the 1980s.

Income inequality is greater when income after housing costs is considered, compared with income before housing costs (Figure 6). As noted above, this is because housing costs generally make up a greater proportion of household income for lower-income households than for higher-income households.

Figure 6. Gini coefficient before and after housing costs for Aotearoa New Zealand, 1982 to 2024



Source: Table D.9 in Perry, B (2019), Household Incomes in New Zealand, Ministry of Social Development, Wellington, with updates provided for 2019-2024.<sup>224</sup>

\*The Ministry of Social Development's updates include data for 2021 and 2022 but advise that in forthcoming reports this information will not be used as part of a time series because of the many behavioural and other changes brought about by COVID-19 lockdowns, special government support during the pandemic period and data collection challenges faced by Stats NZ.

## Child poverty

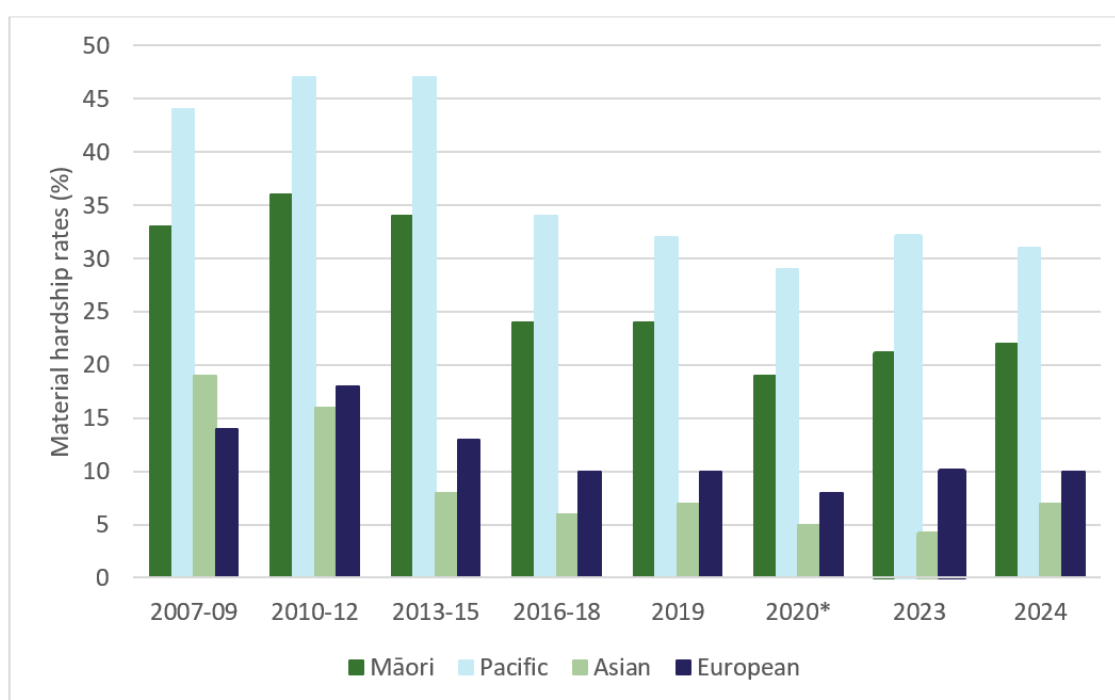
Child poverty in Aotearoa New Zealand is understood as 'exclusion from the minimum acceptable way of life (standard of living) in one's own society because of inadequate resources'.<sup>219</sup> The Child Poverty Reduction Act (2018) established a framework for measuring and reporting child poverty, which includes a variety of measures. The Ministry of Social Development produces comprehensive reports on child poverty and Stats NZ summarises data with analysis related to the Act's targets.<sup>219,226</sup>



Material hardship represents the proportion of children living in households who report that they cannot afford 6 or more of 17 basic essential items, such as not having adequate clothing or having to go without fresh fruit or vegetables to keep costs down. Material hardship rates were high in the years after the 2008 Global Financial Crisis, with marked inequities. 47% of Pacific peoples' children and 36% of tamariki Māori experienced material hardship in 2010-2012, well over double the rates for Asian (16%) and European (18%) children (Figure 7).<sup>219</sup>

Following this, rates of material hardship fell quickly for European and Asian children but more slowly for other ethnic groups. Between 2013 and 2024, rates of material hardship were 2 to 3 times higher for tamariki Māori and 3 to 4 times higher for Pacific children than European children. Thus, although the proportion of children in material hardship has decreased since 2010-2012, and there have been important reductions in absolute inequities, the increase in relative inequity suggests that child poverty initiatives did not have as much impact for tamariki Māori and Pacific children as European children.

**Figure 7. Material hardship rates for children by total response ethnicity, for year ended June 2007 to June 2024, in three-year groupings to 2018.**



\*2021 and 2022 rates are not reported as there were much higher uncertainties in those surveys as a result of COVID-related behavioural changes, collection challenges and a much smaller sample.

Source: Ministry of Social Development (MSD) - updated analysis provided by MSD for Table 3 from Child Poverty in New Zealand.<sup>219</sup>

In the year ended June 2024, 156,600 children (13.4% of all children) were living in households experiencing material hardship.<sup>226</sup> Although numerically the largest number of children experiencing material hardship are European children, Pacific peoples and Māori children are disproportionately affected. Nearly one in three Pacific children and one in four tamariki Māori experience material hardship, compared to one in ten European children.

One consequence of poverty with clear health impacts is when household food runs out. In the New Zealand Health Survey, this measure of food insecurity for children is assessed by asking households with children if they run out of basics (such as bread, potatoes, etc.) due to insufficient money. Rates of food insecurity have increased in the last two years to very high levels, with data from 2023/24 finding that it impacts over a half of Pacific children, over one third of tamariki Māori and about one in five Asian and European children.<sup>227</sup>

## Work

Satisfying work provides adequate income, provides for opportunities and skills, and supports whānau and households. Work influences health in other ways, for example through social status, participation in society and workplace safety.<sup>228</sup> Unemployment is strongly associated with poorer mental health, including low self-esteem, anxiety and depression, but also with stress-related conditions like heart disease.<sup>172,229</sup>

In the year to December 2024, 71.3% of the working age population were in the labour force. The labour force comprises both employed and unemployed people. Those not in the labour force may be involved in other activities such as studying, caring for children or other adults, household work, voluntary work, sickness/injury/disability and free-time activities.<sup>230</sup> The definition of 'unemployed' by Stats NZ is quite narrow: a person does not have a paid job, has been available in the previous week to start work and has been actively seeking work in the last four weeks, or be due to start a new job in the next four weeks.<sup>231</sup>

## Unemployment rate

The unemployment rate is the proportion of unemployed people (as defined above) in the labour force. In the year to December 2024, the unemployment rate was 4.7% (that is, 144,900 people).<sup>231</sup> Stats NZ also report an underutilisation rate (11.7%, or 370,500 people in the year to December 2024), which includes people who are unemployed, those who would like to work more hours than they do and people who are potentially available to work but not actively seeking employment.<sup>232</sup> This partly reflects the development of precarious employment in Aotearoa New Zealand over the last decades – work which is temporary, insecure and/or poorly paid.<sup>233</sup>

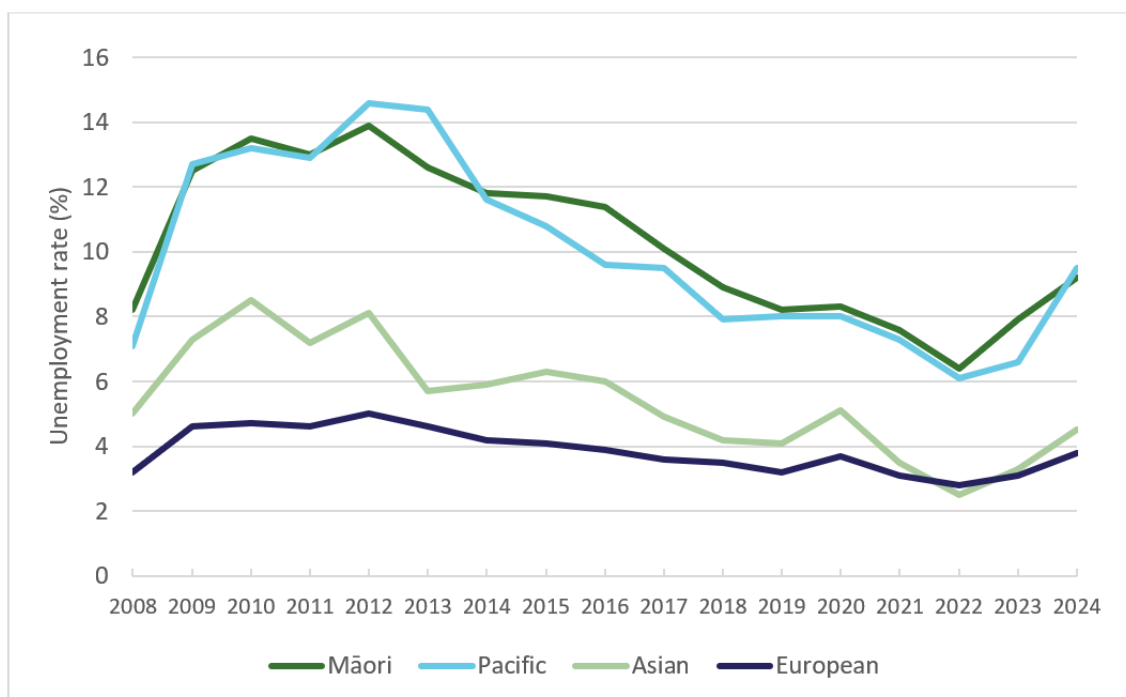
Peaks of unemployment occurred in the early 1990s associated with the neoliberal economic reforms, and from 2008 following the Global Financial Crisis. Unemployment rates increased slightly with the effect of the COVID-19 pandemic, then fell to their lowest point in several years in 2022, before rising sharply in 2023 – 2024.<sup>234</sup>

The unemployment rate varies by age, disability, ethnicity, gender and region. For over three decades, young people have consistently had high unemployment rates, up to six times the rate of other age groups. For people aged 15 to 24 years, the annual unemployment rate to December 2024 was 14.1% (61,700), while it was 2.8% (15,900) for people aged 45 to 54 years.<sup>231</sup>

Annual unemployment rates to December 2024 for Māori (9.2%) and Pacific peoples (9.6%) were over double those of Asian (4.5%) and European (3.8%). Particularly high rates of unemployment are seen for young Māori and Pacific peoples. Annual unemployment rates to December 2024 for Pacific peoples and Māori aged 15–24 years were 22.5% (10,100) and 19.1% (19,800) respectively.<sup>231</sup>

Between 2008 and 2024 annual unemployment rates for Māori and Pacific peoples have been approximately two to three times that of European New Zealanders, although there was a slight narrowing of absolute inequities (Figure 8).

**Figure 8. Annual unemployment rate by total response ethnicity, 2008 to 2024**



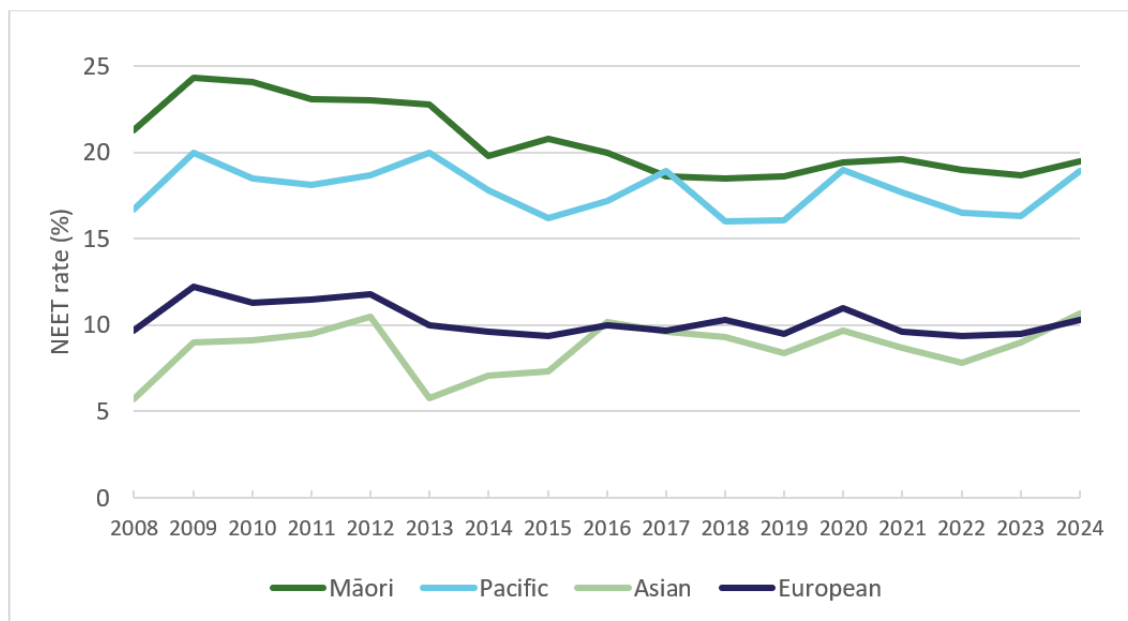
Source: Stats NZ Household Labour Force Survey

The unemployment rate and the underutilisation rate of disabled people is more than double that of non-disabled people. In the quarter to June 2024, over one in 4 disabled people (26.3%) were either unemployed, wanted to work more hours or were potentially available to work but not actively seeking employment (i.e. the underutilisation rate) compared with 11.3% of non-disabled people.<sup>235</sup>

### Not in Employment, Education or Training (NEET)

As the unemployment rate considers only those in the labour force, there is a broader measure for young people (15-24 years) who are not in employment, education or training (NEET).<sup>236</sup> In the year to December 2024, 85,500 young people (12.8% of 15-24 year olds) were considered NEET, with Māori (19.5%) and Pacific peoples (18.9%) having higher NEET rates than Asian (10.7%) and Europeans (10.3%). There has been no improvement in the NEET rate in the last 10 years, with an increase seen in the last year (Figure 9). An analysis of NEET in Auckland in 2018 showed rates were highest for those aged 20 to 24 years and slightly higher for females than males.<sup>237</sup>

**Figure 9. Young people aged 15-24 years who are not in employment, education or training (NEET) by total response ethnicity, 2008 to 2024**



Source: Stats NZ Infoshare

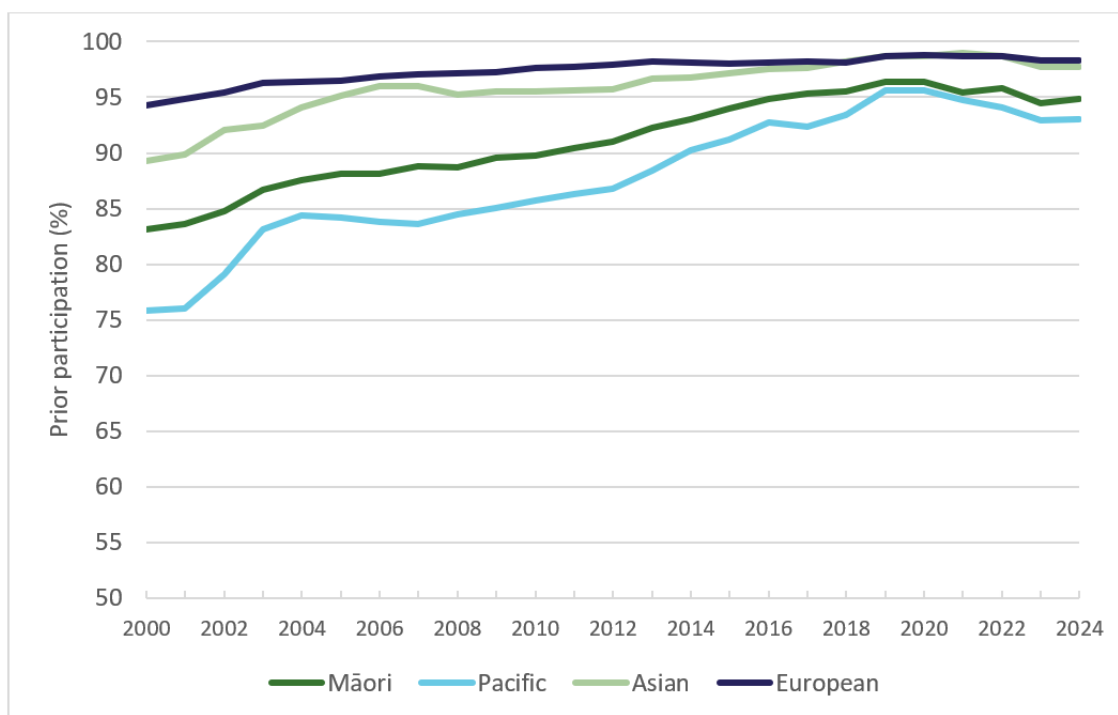
## Education

Educational attainment is a key determinant of future employment and income, and of health status.<sup>238</sup> Trends in education outcomes since 2000 show persistent differences in educational experience for students of different socioeconomic and ethnic groups. Historically the education system has reflected our colonised society and been a tool for cultural suppression rather than meeting Māori aspirations for education.<sup>239</sup> Attendance and qualification trends for New Zealand students are presented below. More in depth reports, such as those on engagement with school, reasons behind low attendance and experiences of racism, offer further insights into the education system.<sup>133,240,241</sup> The data highlight concerning trends in attendance that have become apparent in the last decade, and particularly in the last four years.

### Early Childhood Education (ECE) participation

Prior participation in Early Childhood Education (ECE) measures the proportion of children starting primary school who have regularly attended early learning in the previous six months. There has been significant investment in ECE since 2000. Figure 10 shows an increase in attendance from 2000 to 2019 with a narrowing of the difference between ethnic groups. However, since that time, attendance has fallen, with widening of the gap between ethnic groups.

**Figure 10. Proportion of children attending Early Childhood Education for the 6 months prior to starting school by total response ethnicity, 2000 to 2024**



Source: Ministry of Education

Similarly, participation in ECE for younger children aged 3 and 4 years peaked in 2019 and then fell considerably in 2020-2021. It has remained at lower levels since, with 67% of all children, 56% of Māori, and 53% of Pacific peoples' children aged 3 participating in ECE for 10 or more hours a week in 2023.<sup>242</sup>

### **School attendance**

School attendance is linked to student attainment and wellbeing.<sup>243,244</sup> Regular participation in primary and secondary schools (students who have attended more than 90% of the term) has declined in recent years.<sup>245</sup> However, unlike in ECE, where the decreased participation seems to be associated with the COVID-19 pandemic, the decline in regular school attendance started in 2015, with another steeper drop in 2021-2022.<sup>245</sup> Regular attendance improved in 2023 and 2024 but is still not at pre-pandemic levels, with 39% of Māori, 41% of Pacific peoples, 66% of Asian and 55% of European students attending school regularly in term 2 of 2024 (Figure 11a).

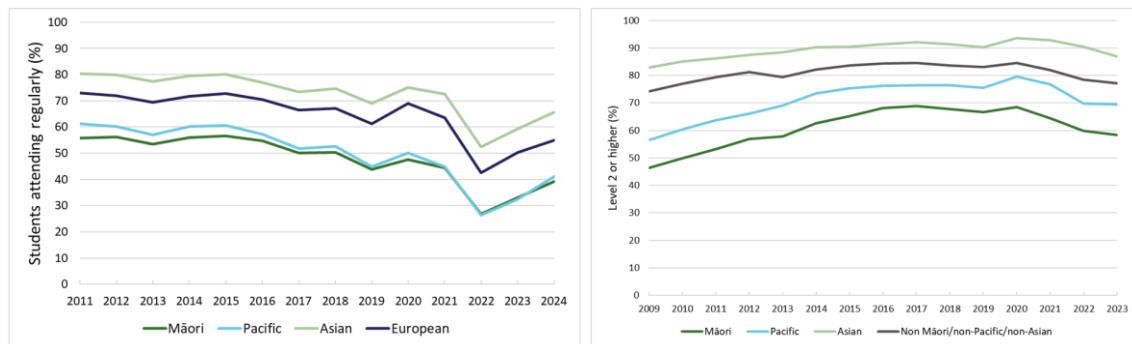
There are differences in school attendance between students who have few, moderate and more socioeconomic barriers to achievement, as measured by the School Equity Index (EQI).<sup>246</sup> Only 42% students from schools with more barriers to achievement and 68% of students with fewer barriers attended school regularly in 2024. This mirrors trends in attendance seen in previous years using school decile as the variable of analysis.<sup>247</sup>

### **Attainment of NCEA**

Attainment of Level 2 NCEA or above increased between 2009 and 2020 and then fell for all ethnicities. The latest available data from 2023 shows 58% of Māori and 70% of Pacific school leavers gained at least NCEA Level 2 qualification or equivalent (Figure 11b). For the total population of school leavers, 74% of school leavers gained at least NCEA Level 2 in 2023, which is the lowest it has been since 2013. This reduction in attainment since 2020 is likely to be related to the significant fall in attendance since the COVID-19 pandemic.<sup>248</sup>

Attainment of a secondary school qualification is associated with future labour force status and income. For example, just under 70% of those with no school qualification, 50% of those with level 1 NCEA and 33% of those with Level 2 NCEA were classified as NEET in their first year after leaving school.<sup>249</sup>

**Figure 11. a) Proportion of students attending school 90% or more of the time by total response ethnicity in term 2, 2011 to 2024. b) School leavers with Level 2 NCEA or higher by total response ethnicity, 2009 to 2023**



Source: Ministry of Education

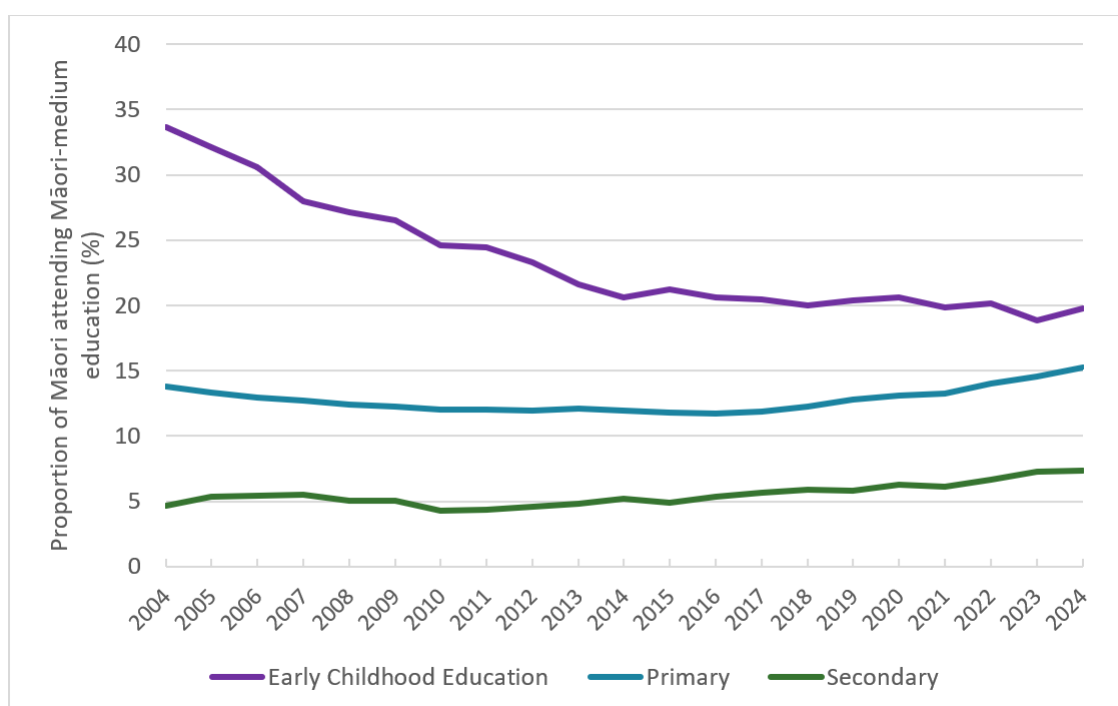
On average, school leavers who are male, who are from schools with more barriers to achievement, or who identify as Māori or Pacific peoples, are more likely to leave school without NCEA Level 2 or above. However, Māori students who attend Māori-medium education have similar levels of NCEA Level 2 attainment to non-Māori at English-medium schools and a higher proportion of these students remain at school until at least aged 17 years.<sup>250</sup>

### Kaupapa Māori education

The proportion of Māori students attending Māori-medium education (defined as when the curriculum is taught in te reo for more than 50% of the time) has declined since 2004 for ECE but increased for primary and secondary schools (Figure 12).

The proportion of tamariki Māori attending Māori-medium ECE (out of all tamariki Māori that attend ECE) has been steady at around 20% for the last decade, having fallen from 33% in 2004. The proportion of tamariki Māori attending Māori-medium schools is lower than in ECE. However, it increased between 2014 and 2024 from 12% to 15% for primary and 5% to 7% for secondary schools. This corresponded to 25,895 Māori learners in Māori-medium schools in 2024.<sup>251</sup>

**Figure 12. Māori attending Māori-medium education out of all Māori attending education, 2004 to 2024**



Source: Ministry of Education

## Homes

Research in Aotearoa New Zealand shows strong evidence for the health and wellbeing benefits of housing security, a warm, dry and safe home, and the importance of appropriate design to meet the intergenerational and cultural needs of whānau.<sup>192,252-256</sup>

Insulated, well-designed housing reduces energy costs and household crowding, but also related illnesses from damp and mouldy housing, such as asthma, respiratory infections, rheumatic fever and chronic conditions.<sup>257-259</sup> In this way, the marked inequities in housing measures below correlate strongly with inequities observed in these and other health outcomes.

### Home ownership

In Aotearoa New Zealand, home ownership is associated with security of tenure, income and wealth, and affordability. Deposit affordability and mortgage serviceability indicators have decreased markedly since 2004 (by -30% and -15% respectively), with small improvements in 2024.<sup>260</sup> Historically, home ownership in Aotearoa peaked in 1991, with 73.8% of households owning their own home, but there were large differences by ethnic group. Home ownership declined to 64.5% in 2018, the lowest level since 1951.<sup>261</sup>



There was a marginal increase in home ownership from 2018 to 2023, with 66% of households owning their own home by 2023, but this gain was not evenly distributed. Housing tenure for Pacific peoples' households **declined** from 35.1% in 2018, to 34.2% in 2023. For all other ethnic groups there were small increases in housing tenure in 2023 with 72.2% of European, 60.7% of Asian and 48.6% of Māori households owning their home.<sup>262</sup>

**Household crowding**

Crowding can affect physical and mental health and is a risk factor for many infectious diseases.<sup>257,259</sup> Household crowding is determined by comparing the number of bedrooms a household needs (based on the occupants' age, gender and relationship status) and the number of available bedrooms.<sup>263</sup> The number of people living in crowded houses in Aotearoa New Zealand increased from 389,600 (10.0%) in 2006 to 560,637 (12.1%) in 2023, with increases across all ethnic groups (Figure 13).

Since 2006, household crowding rates for Pacific peoples have reduced slightly but they continue to experience the highest rates of crowding. Thirty-eight percent of Pacific peoples lived in crowded households in 2023, over six times the rate for Europeans. Rates of crowding for Māori increased from 20% in 2013 to 23% in 2023, which was 3.7 times that of Europeans (a fall from 4.7 times the rate in 2013). Between 2013 and 2023 rates of crowding increased for Europeans from 4% to 6% and decreased for Asians from 18% to 16%. There is also significant regional variation in household crowding.<sup>264</sup>

**Figure 13. Number of people living in crowded households, by total response ethnicity, 2006 to 2023**



Source: Census, Aotearoa Data Explorer; Stats NZ

## Identity and Indigeneity

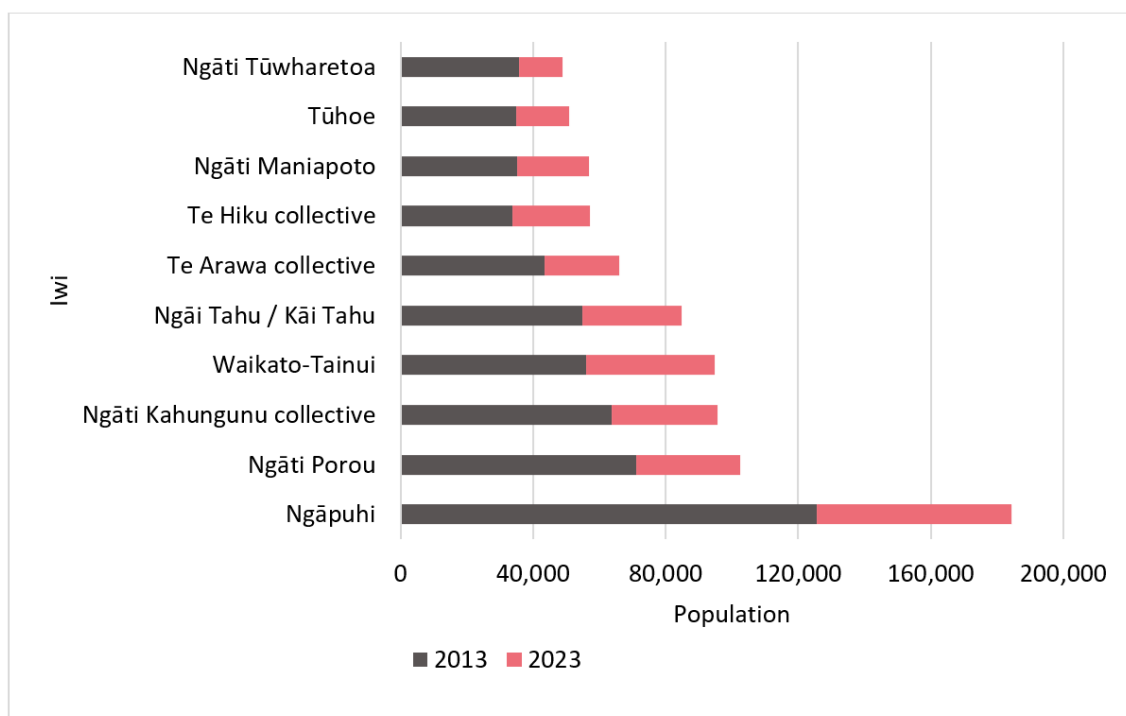
Indigeneity is increasingly conceptualised as a determinant of health, encompassing determinants of health that are specific to indigenous peoples.<sup>265</sup> Strong cultural connections are key contributors to a sense of identity and to wellbeing. Shared collective experiences, values and strengths of Indigenous communities, including cultural connectedness, participation, traditional ceremony, and language preservation, can promote health and are protective against some of the negative outcomes of the social determinants of health.<sup>29,265</sup> There is a strong positive relationship between individual mental wellbeing and whānau wellbeing for Māori.<sup>266</sup>

Here we have chosen capacity to speak te reo and recognition of iwi affiliation as relevant indicators that are currently available. We recognise these inadequately represent Māori experience, and that broader and more meaningful indicators, and the quality of data collection, need further development.

### Iwi affiliation

The number of Māori recorded as being affiliated to at least one iwi increased by 46% between 2013 and 2023 (Figure 14). In addition to population increases, the redesign of the iwi affiliation question in the 2023 Census enabled whānau Māori to reflect their whakapapa more accurately and appropriately.

Figure 14. Number of Māori affiliated to the ten largest iwi, 2013 and 2023



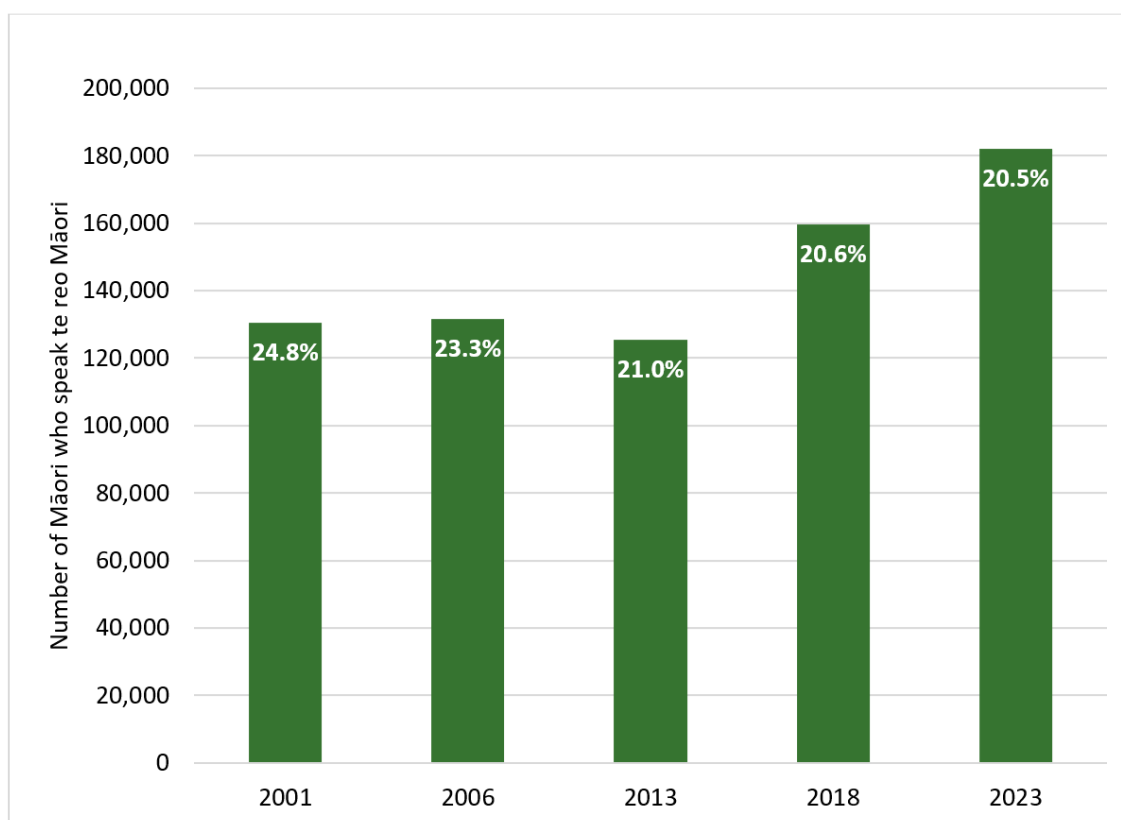
Source: Te Whata / Census 2023

## Te reo Māori

Census data indicate an increase in the number of Māori speaking te reo. In 2023, 182,001 Māori said they could have a conversation about everyday things in te reo, an increase of 45% from 2013.<sup>144</sup> This reflects the substantial increase in Māori population between 2013 and 2023, so although the number of Māori who could have a conversation in te reo increased, the proportion decreased slightly, from 21.0% to 20.5% (Figure 15).

Opportunities to learn te reo have become more widely available in Aotearoa New Zealand in recent years. For example, the number of school students in Māori-medium schools and those learning Māori language in English-medium schools increased from 2019 to 2024, while the number of students with no Māori language education decreased over the same time period.<sup>251</sup>

Figure 15. Number and proportion of Māori who speak te reo Māori, 2001 to 2023



Source: Census, Aotearoa Data Explorer

## Social connections and trust in institutions

There is increasing evidence that high-quality social connections are essential to mental and physical wellbeing, with poor social connection associated with increased risk of cardiovascular disease, hypertension, diabetes, infectious diseases, impaired cognitive function, depression, and anxiety.<sup>267</sup> Surveys generally measure self-reported rates of loneliness or connectedness. Likewise, trust in public institutions is an important indicator of social cohesion.

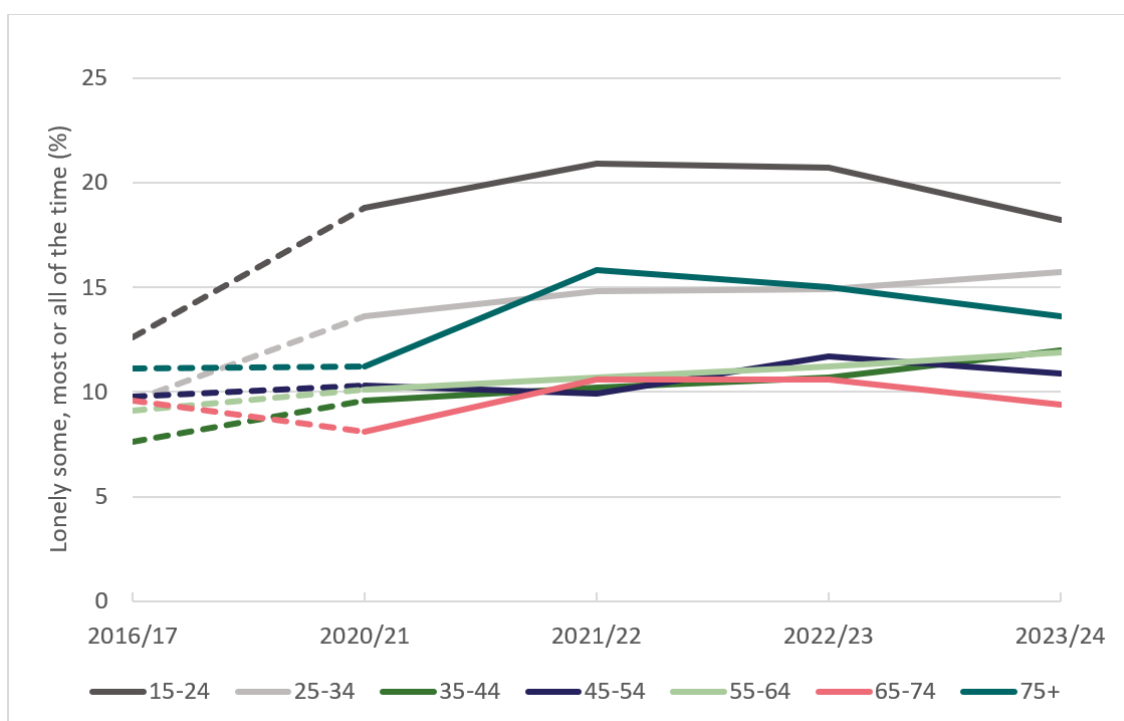
## Loneliness

Loneliness was first assessed in the New Zealand Health Survey in 2016/17 and then annually from 2020/21. Loneliness (self-reported feeling of loneliness some, most, or all of the time in the past four weeks) is higher for females than males, for disabled than non-disabled people and for young adults compared with older adults.

There are high rates of loneliness among disabled people, with the New Zealand Health Survey of 2023/24 finding that one in three disabled people experienced loneliness some, most, or all of the time in the previous four weeks.<sup>76</sup> This was three times the rate of non-disabled people. The rate of experiencing loneliness some, most, or all of the time in the 2023/24 New Zealand Health Survey was also 1.4 times higher for Māori and for Pacific peoples than for non-Māori, after adjusting for age and gender.

Loneliness varies by age, with young people aged 15 to 24 years having the highest rates. For most age groups, there was a marked increase in loneliness from 2016/17 to 2021/22 (Figure 16). One of the contributing factors to loneliness is likely to be the COVID-19 lockdowns, the subsequent decrease in social interactions and increase in online education and remote working. Other reasons for increased loneliness could be related to changes in community and family structures, with more people living alone, and increased use of technology that may provide less meaningful social interactions.

**Figure 16. Lonely some, most, or all of the time by age group, 2016/17 and 2020/21 to 2023/24**

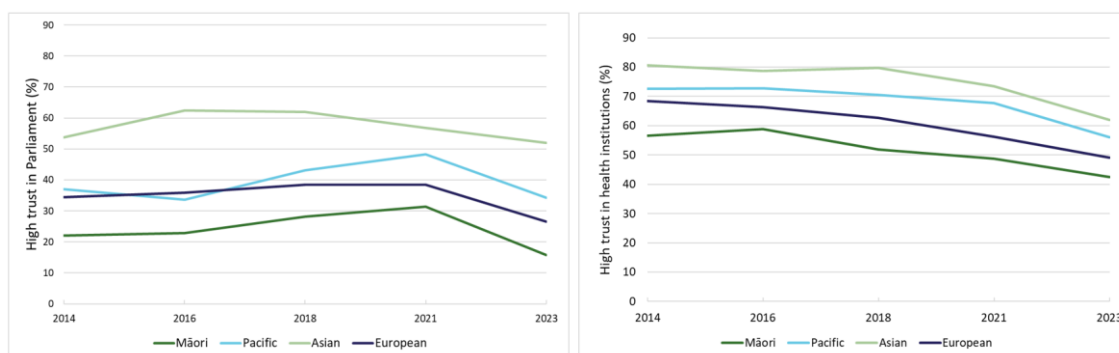


Source: New Zealand Health Survey

## Trust in institutions

Levels of trust in Parliament, as measured by the General Social Survey, have been low over the last decade. They fell further between 2021 and 2023, with only 16% of Māori, 27% of Europeans and 34% of Pacific peoples saying that they had high levels of trust in Parliament (scoring 7 to 10 out of 10) in 2023 (Figure 17a).

**Figure 17. Proportion of people with high (7 to 10 out of 10) levels of trust in a) Parliament and b) Health institutions, by total response ethnicity, 2014 to 2023**



Source: General Social Survey

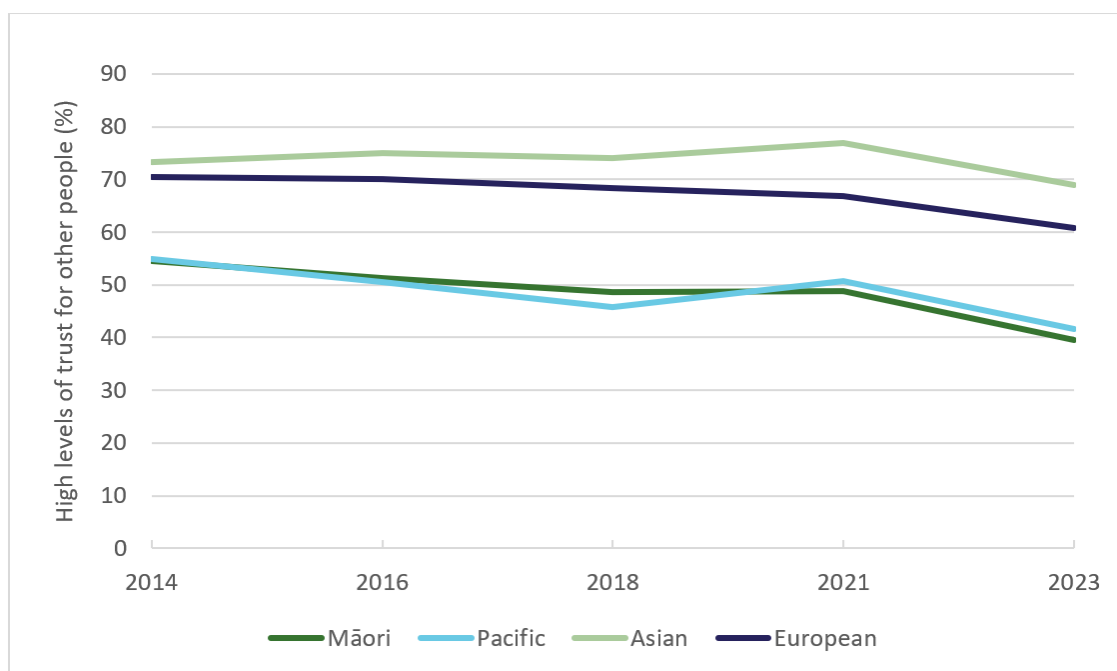
Levels of trust in health institutions are high compared with trust in Parliament, but there has been a gradual decline in trust in health institutions for people of all ethnic groups from 2014 to 2023 (Figure 17b). Less than half of Māori (43%) and Europeans (49%) rated their trust in health institutions as high in 2023, falling from 57% and 68% respectively in 2014.

The Kiwis Count Survey measures trust in public services each year.<sup>268</sup> This covers any public service provided by central government, such as health, education, transport, and social assistance. In 2025 this survey found levels of trust related to the most recent experience of contact with a public service were high (80%), but lower for young people <25 years and disabled people. Levels of trust in public services in general increased significantly for all ethnic groups between 2019 and 2020, fell quite sharply in 2021 and have plateaued at about 50% for Māori and Pacific peoples, 60% for Europeans and 70% for Asian peoples. These levels remain higher than those reported before the COVID-19 pandemic.<sup>268</sup>

## Trust within communities

People need to feel a sense of belonging and worth, to participate and be accepted: these things hold communities and societies together and are critical to health and wellbeing. The General Social Survey results indicate a decline in the trust held for other people since 2014, particularly between 2021 and 2023. In 2014, 55% of Māori and Pacific peoples held high levels of trust (scoring 7 to 10 out of 10) for other people, but this dropped to 40% of Māori and 42% of Pacific peoples by 2023 (Figure 18). The declining levels of trust in recent years are consistent with the findings of a recent report that social cohesion in New Zealand in 2024 was lower than in Australia on every measure.<sup>179</sup>

**Figure 18. Proportion of the population with high (7 to 10 out of 10) levels of trust for other people by total response ethnicity, 2014 to 2023**



Source: General Social Survey

## Environment and climate

Our health and wellbeing are intertwined with our physical environment and our sense of connection to place. As well as providing us with a place to live, the taiao shapes our cultural values, practices and sense of identity. While Aotearoa New Zealand has areas of extraordinary beauty and richness, our land, water and air quality are at risk from a range of activities, including intensive farming of dairy cattle, urban developments, high car ownership, and invasive plants and animals.<sup>17</sup> Higher global temperatures are linked to increased frequency and intensity of extreme weather events, putting the environment under further strain. These trends highlight significant risks to the health and wellbeing of our communities.

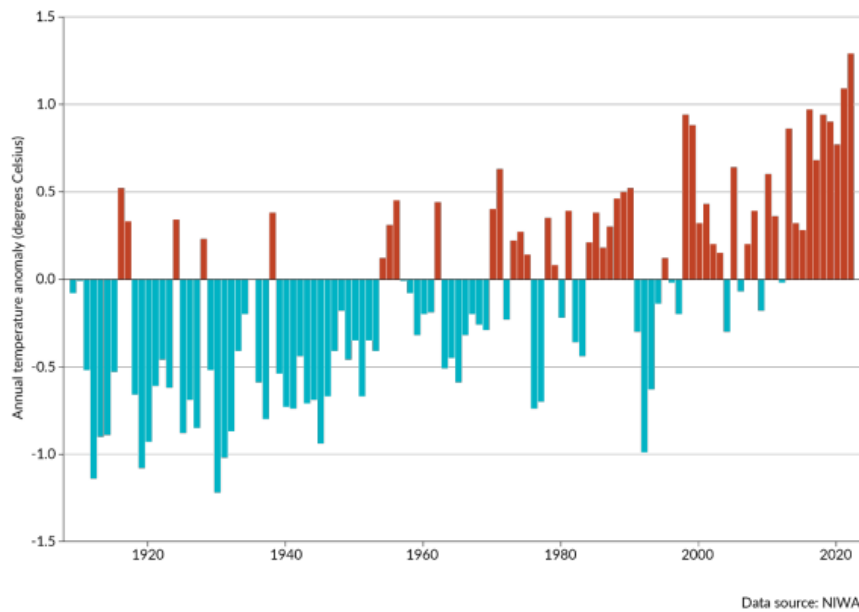
### Climate change

Human-induced changes in Earth's ecosphere have important implications for environmental and human health. Changes in temperatures, rising sea levels and increased extreme weather events have impacts on a broad range of health determinants including physical environments, housing, food security, water security and mental health and wellbeing.<sup>269</sup>

### Temperature

Temperatures in Aotearoa New Zealand are expected to increase in line with global warming, with implications for weather patterns, local ecology, agriculture and other human-environmental interactions.

Figure 19. Aotearoa New Zealand's annual average temperature anomaly, 1909 to 2022



Note: The baseline for temperature anomalies is the average annual temperature for the 30 years from 1961 to 1990.

Source: Ministry for the Environment & Stats NZ 2023, page 24.<sup>270</sup>

The 2023 report from the Intergovernmental Panel on Climate Change (IPCC) confirms that greenhouse gas (GHG) emissions are causing global warming, with the global surface temperature now 1.1°C higher than it was in 1850-1900.<sup>271</sup> Projected GHG emissions to 2030 make it very likely that warming will exceed 1.5°C at some point in the 21st century.<sup>271</sup> Figure 19 shows the increase in annual temperatures in Aotearoa New Zealand in the last century.

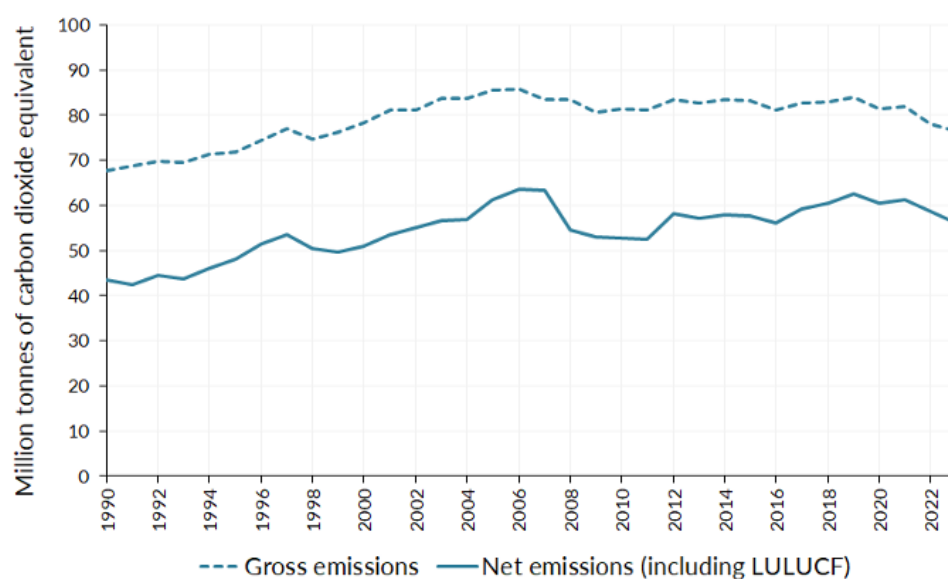
## Glaciers

Fluctuations in annual glacier ice volumes are sensitive indicators of climate change. Between 2005 and 2023, the decrease in total volume of glacial ice in New Zealand accelerated, with a 42% reduction (from 52.3 km<sup>3</sup> to 30.3 km<sup>3</sup>).<sup>272</sup>

## Greenhouse Gas Emissions (GHGs)

As part of the Paris Agreement and the United Nations Framework Convention on Climate Change, the Ministry for the Environment reports on New Zealand's greenhouse gas emissions (GHGs) annually.<sup>273</sup> Aotearoa New Zealand's gross GHG emissions peaked in 2006, stayed relatively stable until 2019 and declined over the subsequent four years (Figure 20). While heading in the right direction, the gross emissions in 2023 were still 13% higher than in 1990.<sup>273</sup>

Figure 20. New Zealand's gross and net emissions from 1990 to 2023



LULUCF - Land Use, Land-Use Change and Forestry

Source: Ministry for the Environment 2025 page 7.<sup>273</sup>

The key sources of Aotearoa New Zealand's GHG emissions are our dairy industry, power generation, and road transport. In 2023 almost half (48%) of our GHG emissions were made up of methane, which comes primarily from large populations of livestock. There has been a significant increase in dairy cattle herds in the last 20 years.<sup>17</sup> Farming is also associated with use of synthetic fertiliser which is a major source of nitrous oxide, comprising almost 10% of our GHG emissions.

Power generation and road transport are the main sources of carbon dioxide, which represents over 40% of GHG emissions. Road transport contributes the largest share of carbon dioxide emissions, which also contribute to urban air pollution, and thus directly affect health. Carbon dioxide emissions from road transport increased by 84.5% between 1990 and 2023, peaking in 2008.<sup>273</sup> We have a relatively high rate of vehicle ownership compared with other OECD countries,<sup>274</sup> and a relatively old vehicle fleet (the average age of light vehicles was 14.9 years in 2022)<sup>275</sup> Electric and petrol hybrid vehicle numbers have increased since 2016 but still made up only 1.6% and 3.8% of the light vehicle fleet respectively in 2022.<sup>274</sup>



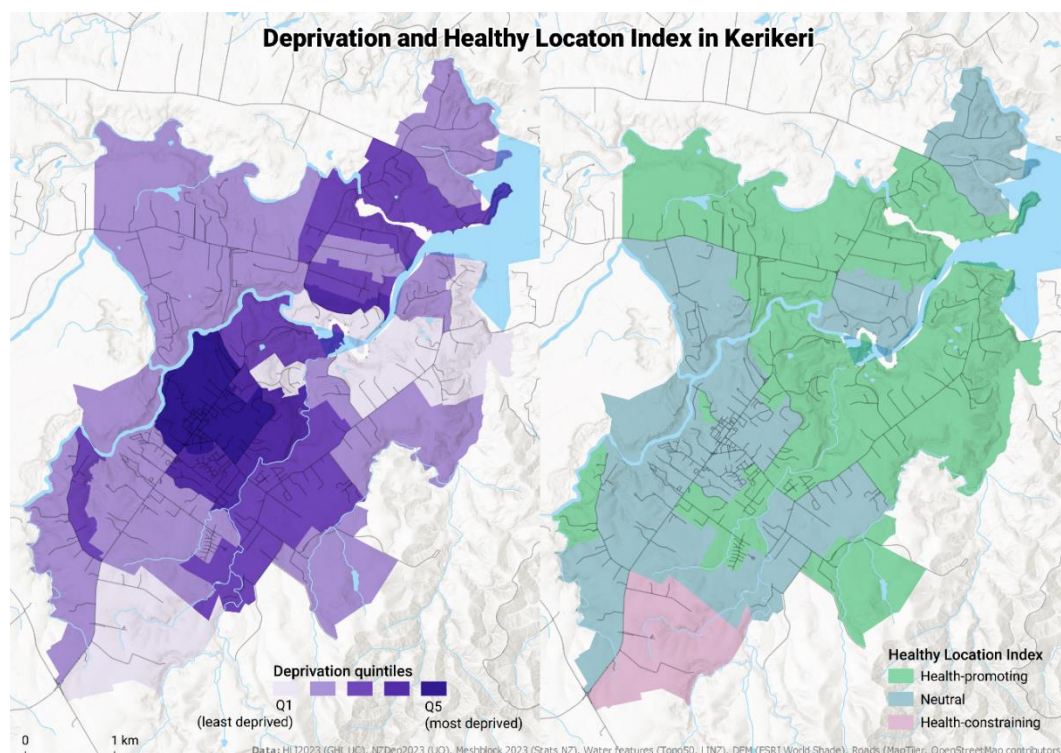
## Interconnections in place

Although in this section we have presented trends in individual determinants, we know that within the same community, in the same place, there are important intersections and connections between determinants. This results in multiplying effects on health and wellbeing.

**The StoryMap** - which brings together and maps indicators of socio-economic deprivation (NZDep23) and health-promoting or health-constraining determinants (the Healthy Location Index), explores these relationships between place, built and natural features and material privilege or deprivation.

Developed with GeoLab at the University of Canterbury, we illustrate these relationships with case studies of communities that are close geographically but quite different in many ways. An example of the geospatial relationships between small areas of socioeconomic deprivation (as assigned by NZDep) and health promoting or health constraining factors in a community, such as distance to greenspace or conversely, easy access to fast food outlets, is shown below (Figure 21). Please explore further: click on **Environmental and Social Determinants of Health** (<https://arcg.is/044u8e>)

Figure 21. Socioeconomic deprivation and Healthy Location Index map, Kerikeri



## Summary

Several key themes emerge from these data and the trends seen since 2000. Despite absolute gains across many determinants such as income and education, and reductions in some absolute inequalities, there have been limited or no change in the **relative** differences (privilege or disadvantage) between ethnic and socioeconomic groups for many socioeconomic indicators.

Of concern, housing measures are showing increasing inequities for Pacific peoples, and housing affordability and household crowding measures are not significantly improving for any population group. Although the overall reduction in child poverty and in absolute inequalities up to 2023 is good news, there has been an increase in relative inequities for Māori and Pacific children compared with European children. In some areas, for example school attendance and attainment, social connection and trust in government, climate and environmental measures, the indicators are heading in the wrong direction for all population groups. What we also see are inter-dependencies and intersections between determinants, with some groups of people experiencing multiple disadvantage, and subsequently significantly poorer health outcomes.

## Trends in health indicators 2000-2024

The health of the tōtara branches and fruit, like our health and wellbeing, depends on nourishment from the soil and bedrock. The following section illustrates trends in selected health status indicators since 2000, examining these by ethnic group, and by socio-economic status, disability and gender where available. We look at changes in relative and absolute differences in varied health outcomes between population groups, reflecting the differential access each group has to the resources that support us to flourish.

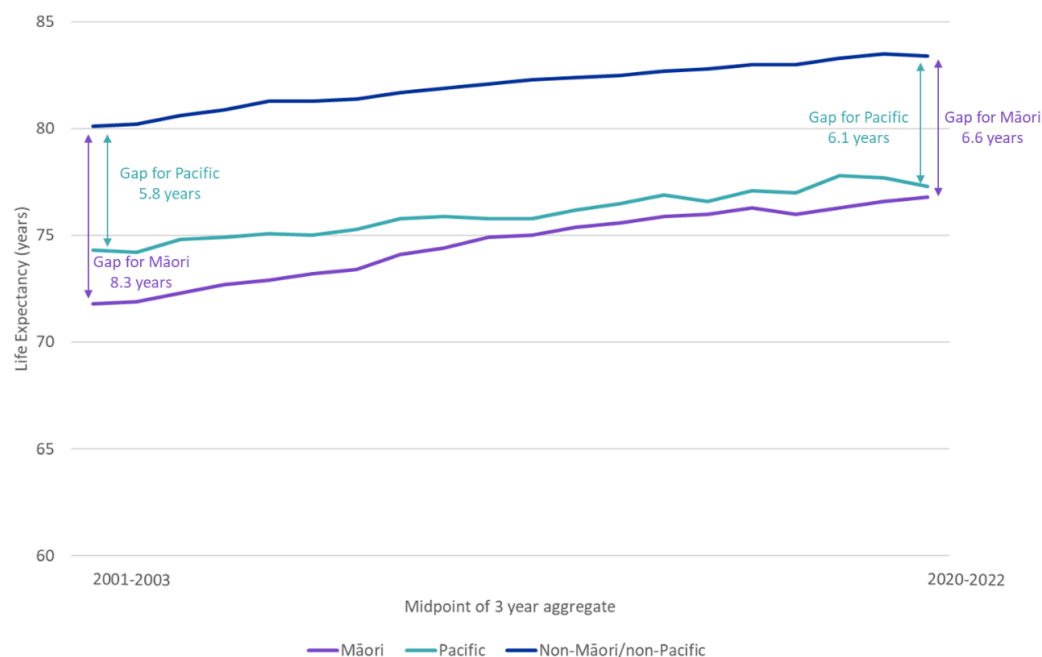
### Life expectancy and life expectancy gap

Life expectancy is the average number of years a baby born today in a particular population is expected to live, assuming they experience the current age-specific death rates of that population during their life.<sup>15</sup> Life expectancy in Aotearoa New Zealand increased for the whole population between 2001 and 2022, from 81.2 to 84 years for females and 76.7 to 80.5 years for males. Increases were seen for all population groups (defined by sex, geography, ethnicity and socioeconomic status). At the same time, disparities between these groups persisted (Figure 22).<sup>15</sup>

Between 2001-2003 and 2020-2022, life expectancy increased faster for Māori than for Pacific peoples and non-Māori/non-Pacific people, with a 20% reduction in the 8.3 years gap seen in 2001-2003 between Māori and non-Māori/non-Pacific people. However, in 2020-2022 there remained a significant absolute gap in life expectancy of 6.6 years between Māori and non-Māori/non-Pacific people.

Life expectancy for Pacific peoples increased to 77.8 years in 2018-2020 but then dropped slightly to 77.3 years in 2020-2022 (Figure 22). This meant that the life expectancy difference **increased** between Pacific peoples and non-Māori/non-Pacific people over the period, from the 5.8 years gap in 2001-2003 to 6.1 years in 2020-2022.

**Figure 22. Longitudinal trends in life expectancy by prioritised ethnicity, 2001 to 2022, three-year aggregated estimate**

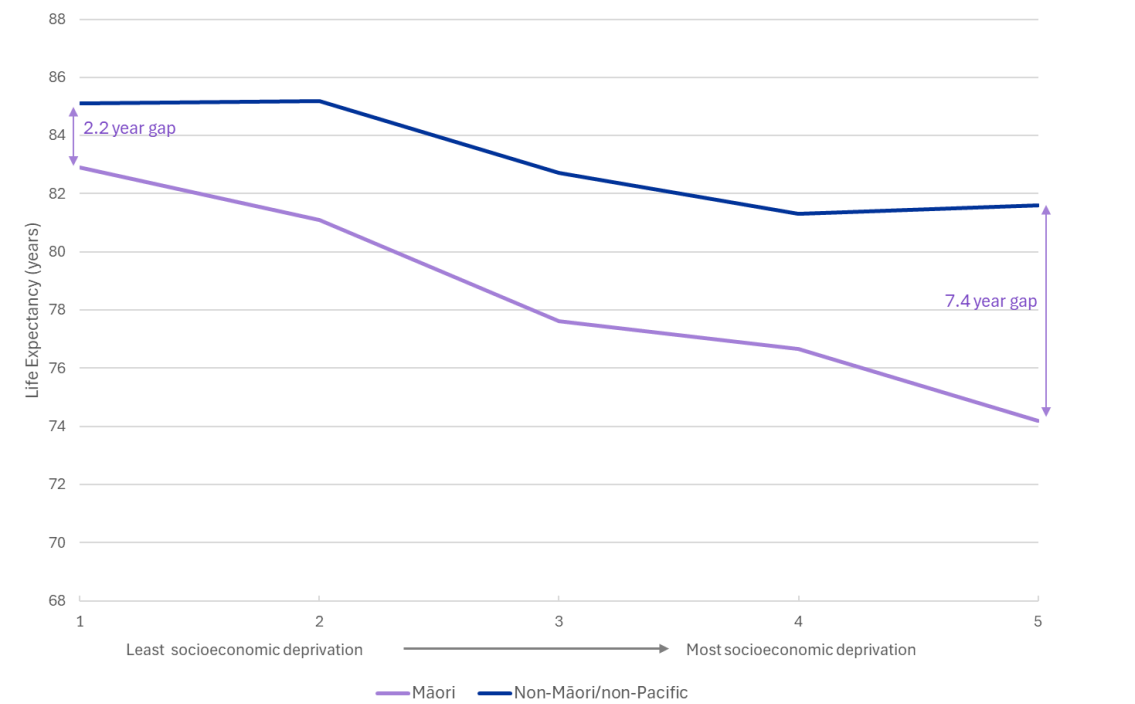


Source: Health New Zealand Te Whatu Ora, 2024, Life Expectancy in Aotearoa, page 8.<sup>15</sup>

Life expectancy for people with intellectual disability is considerably lower than for people without intellectual disability. Estimates for 2017-2019 show a gap of 15 years for males and an 18-year gap for females.<sup>276</sup> Māori with intellectual disability have the lowest life expectancy across ethnic groups, with a life expectancy of 61.9 years.<sup>276</sup>

The New Zealand Index of Deprivation (NZDep) is an area-based measure of socioeconomic deprivation.<sup>viii</sup> Life expectancy is lower for people living in the most socioeconomically deprived neighbourhoods, compared with more advantaged neighbourhoods, with a gradient effect. Over half of Māori and Pacific peoples live in the most socioeconomically deprived areas (NZDep deciles 8-10). In addition, at any given level of socioeconomic deprivation, Māori and Pacific peoples have a lower life expectancy than non-Māori/non-Pacific people (Figure 23).<sup>15</sup>

**Figure 23. Life expectancy by New Zealand Index of Deprivation (NZDep) quintile, by prioritised ethnicity Māori and non-Māori/non-Pacific, 2018-2022**



Source: Health New Zealand Te Whatu Ora, 2024, Life Expectancy in Aotearoa New Zealand, page 32.<sup>15</sup>

<sup>viii</sup> The New Zealand Index of Deprivation (NZDep) combines Census data across 8 variables (communication, income, employment, qualifications, home ownership, support, living space and dwelling condition) to give a measure of the socioeconomic deprivation level of an area. A socioeconomic deprivation decile or quintile is calculated for each small area; it does not apply to individuals or households. Each decile contains about 10% of small areas and each quintile contains about 20% of small areas in Aotearoa New Zealand. Decile 1 (and quintile 1) represent the 10 and 20% of areas respectively with the least deprived scores. Decile 10 (and quintile 5) represent the 10 and 20% of areas with the most deprived scores.

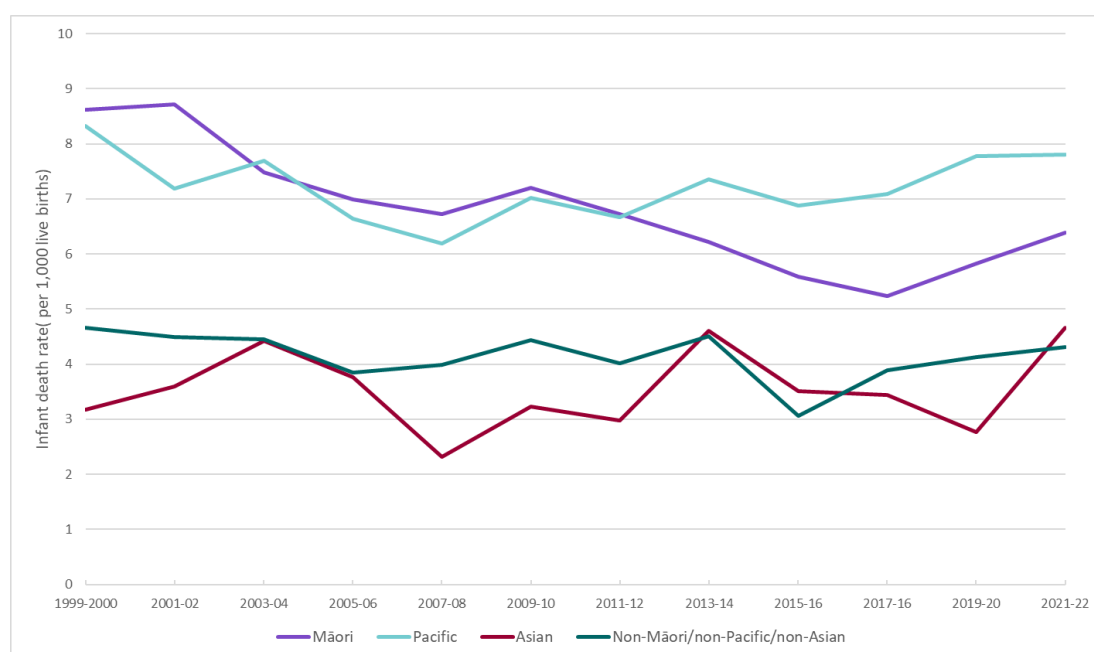
This difference increases as socioeconomic deprivation increases. In 2018-2022, Māori living in the most socioeconomically deprived areas had a life expectancy of 74.2 years, whereas non-Māori/non-Pacific people living in areas with the same level of deprivation had a life expectancy of 81.6 years, a gap of 7.4 years (Figure 23). This relationship is also seen for Pacific peoples, with a 4- to 5-year difference in life expectancy compared with non-Māori/non-Pacific people across all deprivation quintiles. The greater negative relationship of socioeconomic deprivation and life expectancy for Māori and Pacific peoples may be explained by the relationship operating between coloniality, racism and socio-economic deprivation.<sup>52,115</sup>

## Infant and child mortality

Aotearoa New Zealand has relatively high rates of children who die in the first five years of life compared with other OECD countries.<sup>277</sup> Infant mortality (defined as the death of a baby between birth and one year of age) decreased in Aotearoa New Zealand in the 1990s, followed by a slowing of that reduction from around 2000.<sup>278</sup>

There were 300 infant deaths registered in Aotearoa New Zealand in 2022, a rate of 5 deaths per 1,000 live births. These deaths were not evenly distributed. Noting that numbers are small, infant mortality rates have remained higher for Pacific and Māori infants than Asian and non-Māori/non-Pacific/non-Asian (nMnPnA) infants since 1999-2000, as shown in Figure 24.

**Figure 24. Infant mortality rates by prioritised ethnicity, 1999-2022**



Data from 2020-2022 are provisional.

Source: Mortality Collection.

The infant mortality rate for Pacific peoples' infants decreased from 1999-2000 but only until 2011-12, when it started to rise again. In 2021-22, Pacific peoples had the highest infant death rate at 7.8 per 1,000 births, followed by Māori (6.3 per 1,000 births), Asian (4.7 per 1,000 births) and nMnPnA (4.3 per 1,000 births).

Between 1999-2000 and 2021-2022, the inequity in infant mortality for Māori infants reduced both in absolute and relative terms. In 2021-2022 it was 1.5 times higher than rates for infants of nMnPnA ethnicity, compared with 1.9 times higher in 1999-2000.

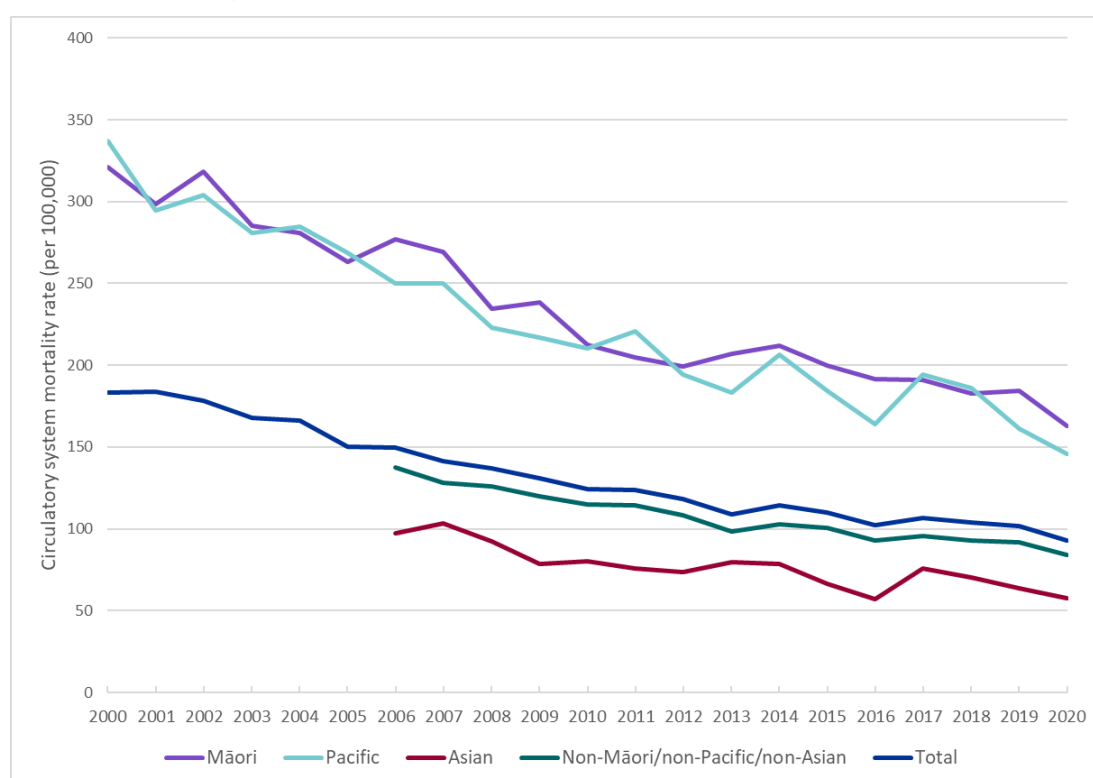
In the period 2014-2018, infant mortality rates of infants living in the most deprived areas were over double the rate of those in the least deprived areas.<sup>278</sup> The Perinatal and Maternal Mortality Review Committee in 2024 identified considerable preventable mortality, particularly for groups experiencing the most disadvantage. The Committee recommended that different approaches to care are required for different population groups in order to improve infant survival.<sup>279</sup>

There have also been persistent differences in mortality rates by ethnicity and socio-economic deprivation level for children aged 1 to 14 years. Since 1990-91, death rates in children aged 1 to 14 years have declined for all socio-economic groups, but have consistently been 2 to 4 times higher for those living in the most socioeconomically deprived areas, compared with the least deprived areas.<sup>278</sup>

## Deaths from heart disease, stroke and the circulatory system

Mortality rates from heart disease, stroke and diseases of the circulatory system halved from 2000 to 2020. There have been important improvements in absolute inequities, especially between Māori and non-Māori/non-Pacific/non-Asian peoples (nMnPnA). However, relative inequities persist. Māori and Pacific mortality rates have remained about double those of nMnPnA ethnic groups and are similar to the nMnPnA rates of 25 years ago (Figure 25).

**Figure 25. Mortality rates related to diseases of the circulatory system\* by prioritised ethnicity, WHO age standardised, 2000-2020**



\* ICD-9 codes 390-459; ICD-10 codes I00-I99

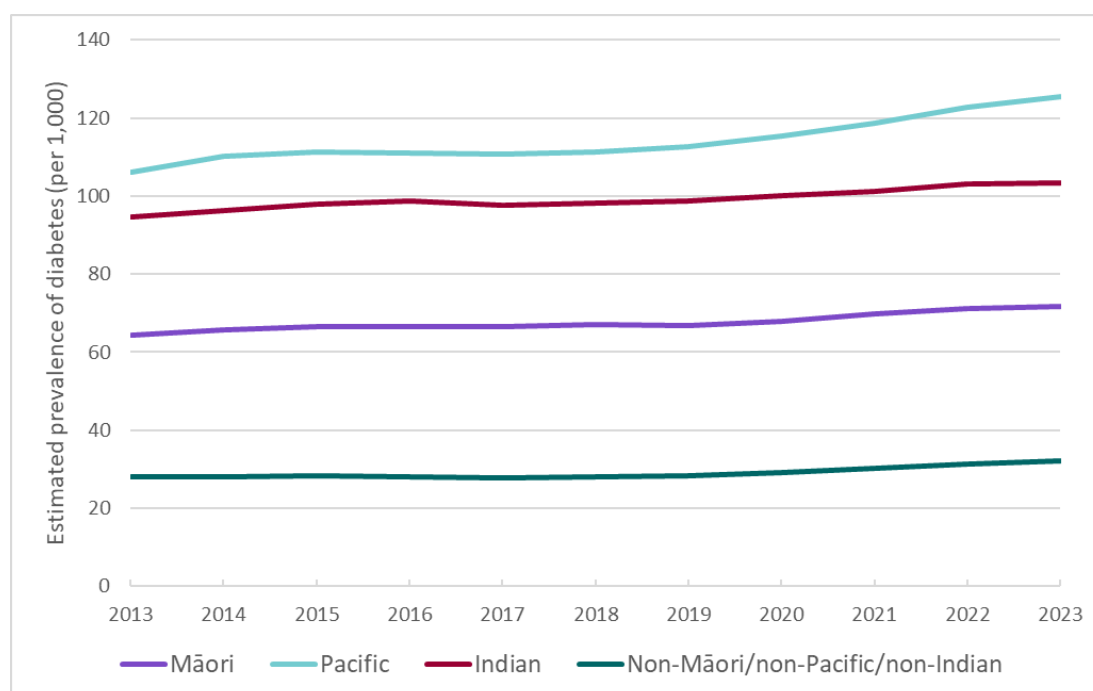
Source: Mortality Collection. Data from 2020 are provisional. Disaggregated data not available for Asian and non-Māori/non-Pacific/non-Asian for 2000-2005.

Much of the improvement in cardiovascular mortality is related to reduced smoking rates, monitoring and control of cholesterol and blood pressure, and improved interventions for diagnosis and treatment (such as angioplasty and thrombolysis).<sup>280</sup> The reductions in cardiovascular mortality rates have occurred despite rises in the prevalence of excess body weight and diabetes.

## Estimated prevalence of type 1 and type 2 diabetes

The Virtual Diabetes Register estimates the number and proportion of people with type 1 and type 2 diabetes in the Aotearoa New Zealand population at any point in time (prevalence).<sup>281</sup> We do not currently have a measure of the number of people with type 2 diabetes, but it is a large proportion of the total (international figures suggest around 90%). Onset is usually at an older age than type 1 diabetes.<sup>282</sup>

**Figure 26. Estimated prevalence of diabetes (type 1 and type 2) by prioritised ethnicity, WHO age standardised, 2013 to 2023**



The Virtual Diabetes Register modifies the Ethnicity Data Protocol for prioritised ethnicity output. The Indian ethnic group is illustrated due to known high rates of diabetes. Other people of Asian ethnicity are included in the non-Māori/non-Pacific/non-Indian grouping.

Source: Virtual Diabetes Register, Health New Zealand

There has been an increase in age-standardised diabetes prevalence from 36.6 per 1,000 people in 2013 to 44.3 per 1,000 people in 2023. However, diabetes is much more common in some populations: 126 per 1,000 for Pacific peoples, 103 per 1,000 for Indian and 72 per 1,000 for Māori (Figure 26). Diabetes is also more common in populations living in the most deprived neighbourhoods (74 per 1,000 people in 2023) compared with the least deprived (28 per 1,000 people in 2023).<sup>281</sup>

The rising incidence (new cases) and prevalence of diabetes parallels increases in excess body weight (EBW). Aotearoa New Zealand has worrying rates of EBW, with the third highest rate of countries in the OECD.<sup>283</sup> While we acknowledge the limitations of body mass index (BMI) measurement, it provides a pragmatic tool to assess changes in population EBW.<sup>284</sup> In 2023/24 one in three (33.8%) adults had a BMI of 30 or over, compared with 17% in 1997.<sup>285</sup> In 2023/24, two thirds (66.9%) of adults were considered to have EBW (BMI 25 or more), with this disproportionately affecting those living in the most deprived neighbourhoods (where 78.5% had a BMI  $\geq$  25).<sup>227</sup>

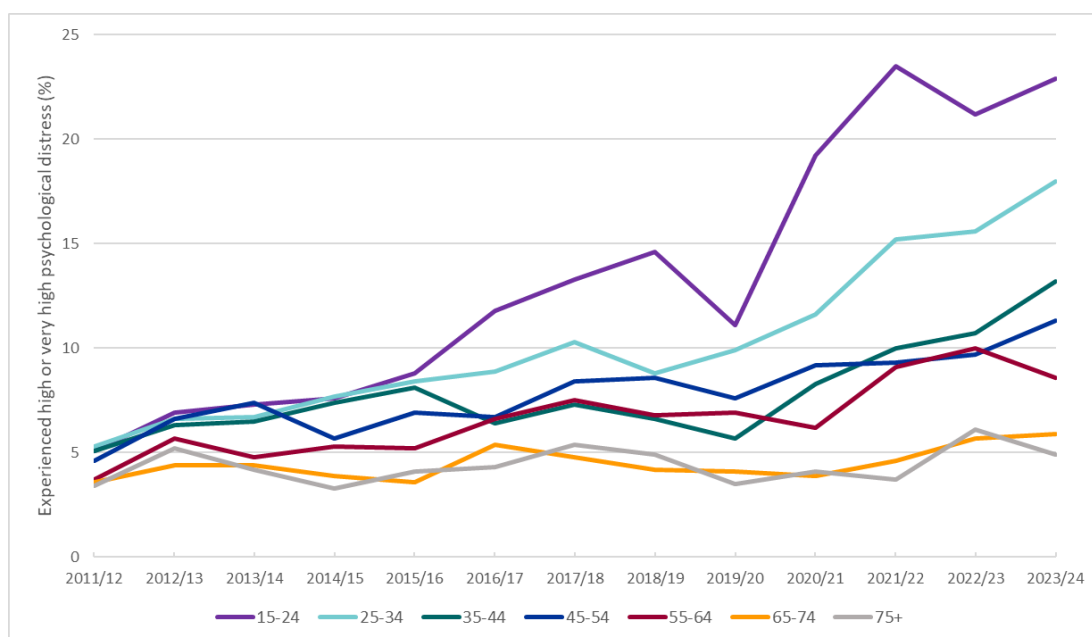


## Psychological distress

Psychological distress has risen in the last 10 years, with a particularly marked increase for young adults. The New Zealand Health Survey reports that the proportion of 15- to 24-year-olds experiencing high or very high psychological distress in the previous four weeks increased more than fourfold between 2011/12 and 2023/24, from one in twenty (5.1%) to more than one in five (22.9%) young people (Figure 27).<sup>227</sup>

Rates of psychological distress are higher in women than men (Figure 28) and show an inverse relationship with age (Figure 27). Nearly one third (30%) of women aged 15 to 24 years reported experiencing high or very high psychological distress in the previous four weeks in the 2023/4 New Zealand Health Survey.<sup>227</sup> When people experience high levels of psychological distress, it affects the whole whānau and can have intergenerational impacts.<sup>286</sup>

**Figure 27. Experienced high or very high psychological distress\* in the past 4 weeks by age group, 2011/12-2023/24**

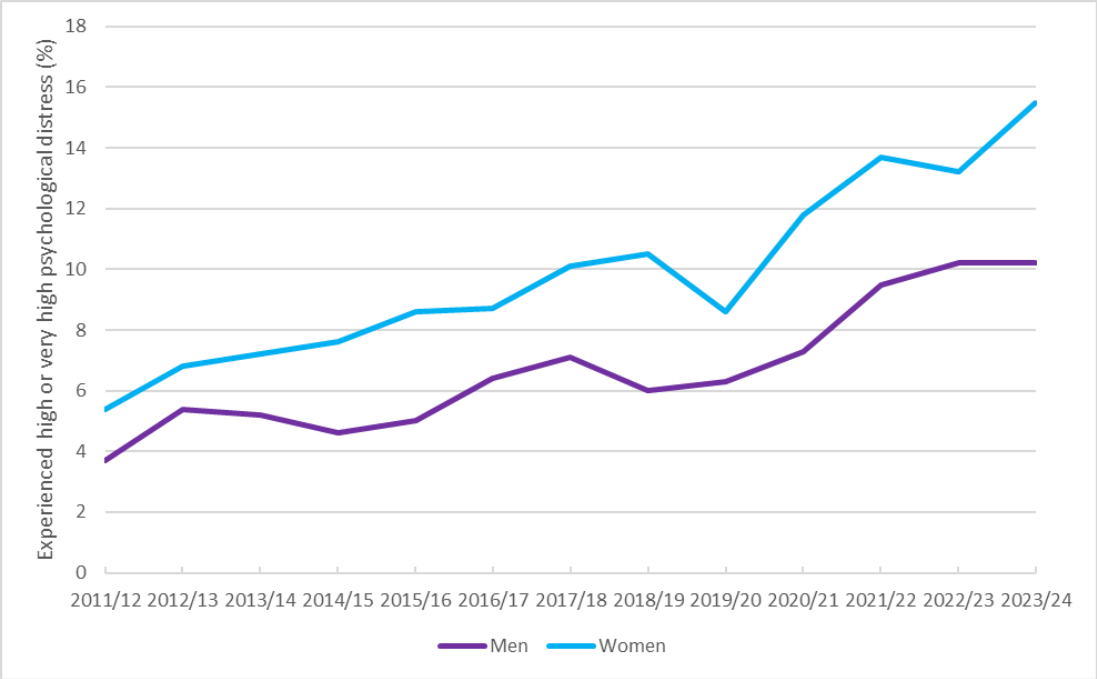


\* Score of 12 or more on the Kessler Psychological Distress Scale

Source: New Zealand Health Survey

Reported psychological distress has risen for all ethnic groups since 2019. Approximately 1 in 5 Māori and Pacific peoples, 1 in 11 Asian and 1 in 8 nMnPNā people experienced high or very high psychological distress in the previous four weeks in 2023/24. These data are not standardised for age, so the very high prevalence of psychological distress in Māori and Pacific peoples at least partially reflects the higher proportion of younger people in those populations. Rates of psychological distress are also higher for people living in areas of high socioeconomic deprivation (16.9%), compared with the least deprived areas (10%).

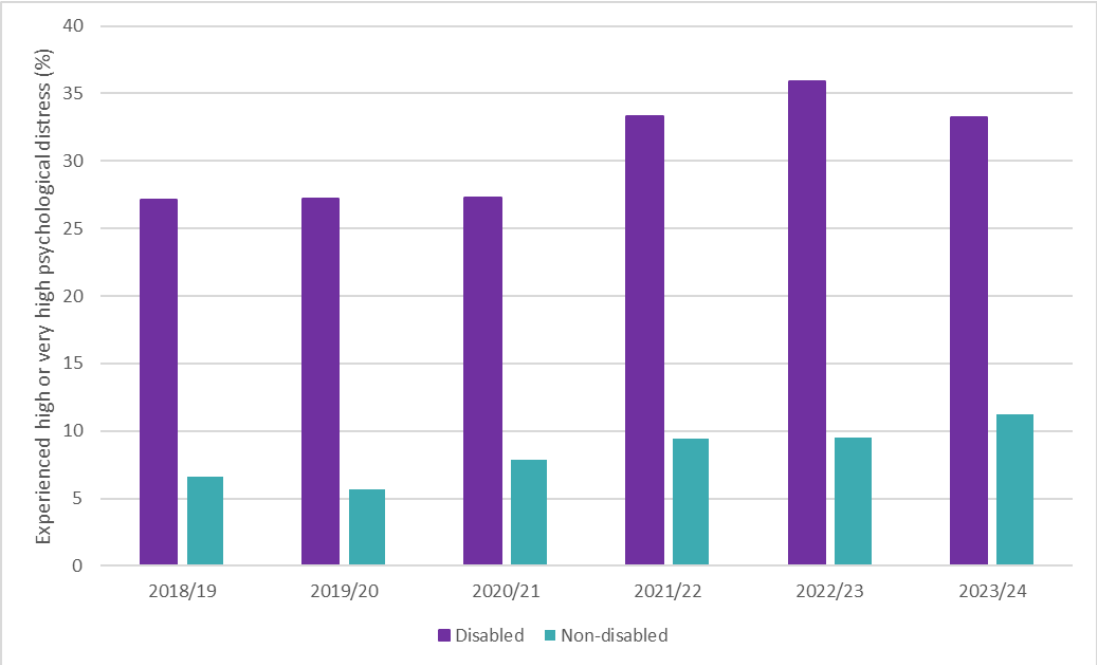
**Figure 28. Adults experiencing high or very high psychological distress\* in the past 4 weeks by gender 2011/12-2023/24**



\* Score of 12 or more on the Kessler Psychological Distress Scale

Source: New Zealand Health Survey

**Figure 29. Experienced high or very high psychological distress\* in the past 4 weeks by disability, 2018/19-2023/24**



Score of 12 or more on the Kessler Psychological Distress Scale (K10)) (Not age standardised).

Source New Zealand Health Survey

Disabled people have higher rates of psychological distress than non-disabled people, with increasing prevalence in both groups over time (Figure 29). In 2022/23 over a third of disabled people reported experiencing high or very high psychological distress in the previous four weeks. Levels were slightly lower in the most recent survey (2023/24).

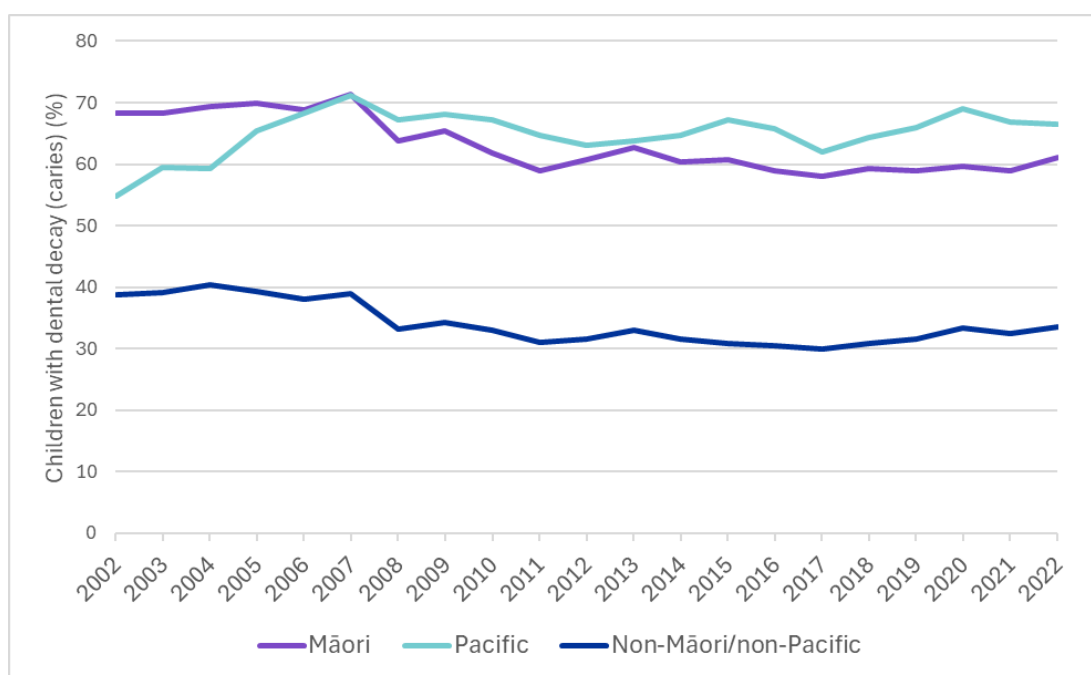
Psychological distress is also higher in disabled children with one in three disabled girls (34%) and nearly one in four disabled boys (23%) consulting their GP or nurse about mental health in 2023/24, a much higher rate than non-disabled children (girls 4%, boys 5%).<sup>227</sup>

## Child oral health

Oral health is important for overall health and wellbeing. Poor oral health is associated with many health conditions such as diabetes, stroke and mental health.<sup>287</sup> In this section we focus on child oral health but note that oral disease in Aotearoa New Zealand is also common in adults. There are higher rates in people living in rural and socioeconomically deprived areas, and for Māori and Pacific peoples, with ensuing high social and economic costs.<sup>288,289</sup> A review of potentially preventable hospital admissions for treatment of dental disease notes persistent disparities between Māori and Pacific peoples, and nMnPNā ethnic groups over time.<sup>288</sup>

In Aotearoa New Zealand, the Community Oral Health Service (COHS) provides free dental care from birth until the end of Year 8 (aged 12-13 years) but service coverage has been declining since 2000. By 2022, COHS coverage was 55% for 5-year-olds and 74% for Year 8 students and varied by geographic location and ethnicity.<sup>290</sup> This low coverage limits our analysis of the situation. However, post COVID lockdowns, COHS focused on children at highest risk of dental caries. We do not know the oral health status of those children missing out, and those missing out may disproportionately be from least advantaged populations.

**Figure 30. Children aged 5 years with dental decay (caries) at examination with the Community Oral Health Service, by prioritised ethnicity, 2002–2022**



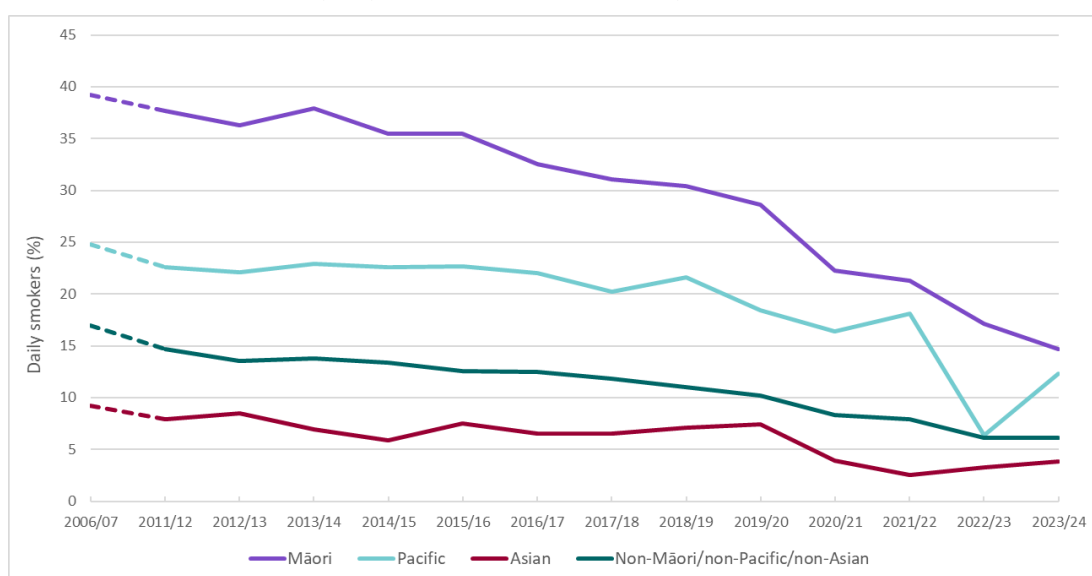
Source: New Zealand Child and Youth Epidemiology Service. Tustin et al 2024, Fig 5.6, page 23<sup>290</sup>

For the 5-year-old children seen by COHS between 2000 and 2022 there was a small decrease in rates of dental decay for Māori and non-Māori/non-Pacific and an increase for Pacific peoples' children (Figure 30). However, rates of dental decay in these populations remain high, affecting nearly two thirds of Māori (61%) and Pacific peoples (66%) children and one third (34%) of non-Māori/non-Pacific children at the COHS 5-year check. For all children aged 5 to 9 years the rates of hospitalisations for dental decay more than doubled between 2000 and 2022, suggesting oral disease is being inadequately prevented and addressed in a timely way in our communities.<sup>290</sup> Fluoridation of water supplies is an evidence-based intervention that can help reduce the persistently high and inequitable rates of tooth decay in Aotearoa New Zealand.<sup>291</sup>

## Health risk factor: smoking

Smoking increases the risk of many conditions including cardiovascular disease, lung cancer and respiratory conditions. Reductions in death and illness from these conditions are linked to reduced smoking rates.<sup>280</sup> The proportion of adults who smoke daily (and have smoked more than 100 cigarettes in their life), as estimated by the New Zealand Health Survey, decreased steadily over the last decade. Rates more than halved in all ethnic groups and there was a large 24.5 percentage point drop for Māori. However, the rate in the last two years has plateaued at 6.9% (2022–24), and there are still inequities in smoking rates (Figure 31). Daily smoking prevalence rates remain well above the 5% goal for Māori (14.7%), Pacific (12.3%), those living in the most socioeconomically deprived areas (13.9%) and for disabled people (10.2%).<sup>292</sup>

**Figure 31. Daily smokers (have smoked more than 100 cigarettes in lifetime and currently smoke at least once a day) by total response ethnicity, 2006/07 and 2011/12–2023/24**



Source: New Zealand Health Survey

New Zealand introduced world-leading legislation in 2022 to support reducing daily smoking prevalence in all population groups to under 5%. The legislation included initiatives for a generational smoking ban, reducing the nicotine levels in cigarettes and reducing the number of retail outlets. These initiatives were repealed in 2024, despite concerns that their removal would have impacts on the effectiveness and equity in smoking reduction.<sup>293,294</sup> There is concern that Aotearoa New Zealand's revised smoking plan lacks measures that make it easier for populations to reach the 5% goal.<sup>292,295</sup> For example, the current plan does not include adequate regulations around retail access and product content (e.g. reduced nicotine levels).<sup>296</sup>

## Health risk factor: vaping

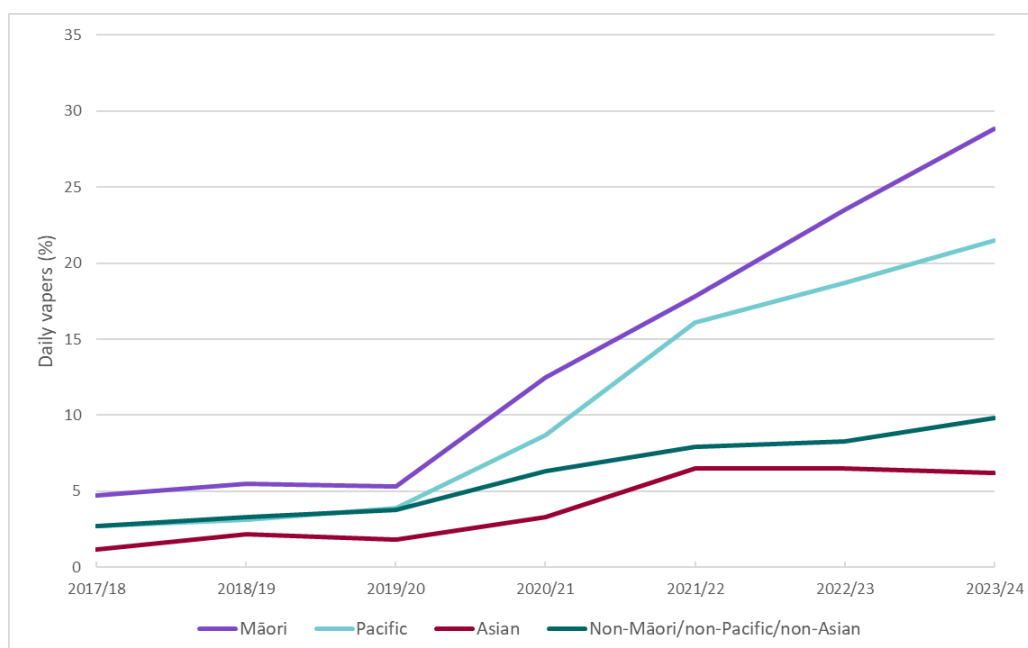
Intended by policymakers as an aid to support smoking cessation, easy access to vaping has had some undesired effects. Although declines in smoking have been positive, there has been an even greater and more rapid increase in vaping, particularly by young people. Over a three-year period (2019/20 to 2022/23), the proportion of adults aged 15-24 years who vaped daily increased from 4.3% to 22.1%.<sup>40,297</sup>

The widespread use of vaping is a new phenomenon, and the full extent of the health risks are not yet known. However recent studies have confirmed the association between vaping and significantly increased risk of respiratory problems, with doubling of chronic obstructive pulmonary disease (COPD) and increased rates of high blood pressure in people who vape aged over 30 years.<sup>298</sup>

Figure 32 shows the proportion of adults who vape by ethnicity (note that the data are not age-standardised so the higher proportion in Māori and Pacific peoples at least partially reflects the higher proportion of younger people in those populations). There was a steep increase in vaping rates from 2019/20, and the rates increased faster for Māori and Pacific people than for Europeans. In 2023/24, the daily vaping rates for adults over 15 years were particularly high for Māori (28.8%), Pacific peoples (21.5%), disabled people (12.5%) and those living in the most socioeconomically deprived areas (19%).

The ASH Year 10 Survey in 2024 of students aged 14-15 years similarly found very low rates of daily smoking but a dramatic increase in daily vaping between 2019 and 2021, when it reached approximately 10%. Daily vaping rates in this age group dropped slightly to 8.7% in 2024.<sup>297</sup>

**Figure 32. Adults who vape daily by total response ethnicity, 2017/18-2023/24**



Not age-standardised

Source: New Zealand Health Survey

## Conclusion

Overall, many health outcomes have improved since 2000 – but more for some people than for others. We live longer, and there have been important reductions in some causes of early death and disability, such as cardiovascular disease and some cancers, along with reductions in absolute inequities. The positive impact of the large reductions in smoking rates and decrease in inequities in smoking across all ethnic groups, are to be celebrated. These reductions have contributed significantly to the reduction in cardiovascular disease, stroke, chronic lung disease, lung cancer and other conditions over the last three decades.

However, relative inequities in many other health indicators are entrenched. Infant and child mortality in Pacific peoples and in more socio-economically deprived communities is very concerning, with no reduction apparent in Pacific infant mortality in the last two decades. Rates of excess body weight have flat-lined or increased. The population prevalence of diabetes is rising, with very unequal impact. There have been increases in absolute inequity for Pacific peoples, and no real change in inequities for Māori and Indian people, compared with all other ethnic groups.

Our mental health is significantly poorer, especially for young people. While there have been some improvements in health-damaging behaviours like smoking and harmful drinking, vaping is at high levels in young people, with marked ethnic inequities.

Overall, there are significant persistent differences in health between population groups, many of which are preventable.<sup>15,70</sup> While there has been improvement on some measures, Māori continue to disproportionately experience poorer health outcomes. And for Pacific peoples, many indicators show no change or even worsening of absolute and relative inequities. These inequities have a huge cost, not just in terms of illness and disability for children and whānau, but also for our future prosperity and wellbeing as a nation.<sup>23</sup>

For additional indicators and our overall 'score card', see **Appendix 4** and online **Appendix 7**.

## 4 Looking forward: A threatened forest

Since the NHC published its report on determinants of health in 1998,<sup>8</sup> the relationships between health and income, employment, education and housing have been further researched and documented, both in Aotearoa New Zealand and overseas. This work has confirmed that these factors – alongside social cohesion, cultural identity and Indigeneity – are vital to our health and wellbeing.<sup>5-7,29,93</sup> In this section, we consider some new and emerging influences that are increasingly shaping our access to resources for health.

The significant influence of commercial actors and processes on health – the ‘commercial determinants’ – has been more widely acknowledged and studied in recent years, with a particular focus on those industries whose activities negatively affect health (for example, alcohol, tobacco products, fossil fuels and ultra-processed foods (UPF)).<sup>170,299</sup>

Two ‘megatrends’<sup>16,300</sup> are increasingly recognised as critical to our future health and wellbeing: the climate crisis, and the digital environment, particularly the rapid development of artificial intelligence (AI). These megatrends will increasingly influence patterns of access to other resources for health, such as employment and income, as well as more directly impacting on our health and wellbeing. We briefly examine below the commercial determinants of health and impacts of the climate crisis on health and equity.<sup>301-303</sup> We then explore some of the potential benefits and challenges for population health of AI and changes in the digital environment.

### Commercial determinants of health

A commercial entity is generally defined as one that buys and sells goods or services for profit or a return on investment.<sup>304</sup> Our economy includes a range of commercial entities, from small private-sector businesses and NGOs, through to state-owned enterprises and transnational organisations. The ownership, control, purpose and functions of these commercial entities varies widely.



Commercial entities can contribute positively and negatively to human health and equity. The ways that commercial actors influence health and equity are known as the 'commercial determinants of health'.<sup>304</sup> As an example of 'pro-health' business, nearly 200 leading financial institutions globally (managing more than US\$16 trillion of assets) have pledged to support tobacco-free policies across their lending, investment and insurance portfolios.<sup>305</sup> Many businesses in Aotearoa New Zealand, including those in primary industries, also have a strong focus on sustainability, wellbeing of employees and protecting the environment.<sup>306</sup>

Commercial systems strongly influence other determinants of health such as employment, transport, food systems, and increasingly, health care. The interconnections between our current economic system, some of the more damaging commercial determinants, and negative impacts on the environment (environmental degradation, biodiversity loss, and climate change) have also become very clear.<sup>307</sup>

## Products and practices that directly affect health

There is increasing evidence that some commercial entities – particularly large transnational corporations – use practices and promote consumption patterns that are escalating the rate of non-communicable diseases, climate change, and social and health inequity on a global level. The scale of the problem is large. In 2019, the Global Burden of Disease study estimated that four industry sectors (tobacco, ultra-processed foods, fossil fuel and alcohol) account for at least one-third of global deaths.<sup>170</sup>

Factors such as occupational exposures (for example, to pesticides, asbestos or dust), shift work and other employment practices are also important components of the impacts commercial determinants have on health. For example, some manufacturing industries have lobbied for less stringent regulatory and enforcement standards, which has contributed to weaker labour and employment practices, environmental damage, and poorer workplace safety both in Aotearoa New Zealand and internationally. Ultimately this has led to workers dying and had health consequences for nearby communities.<sup>170,308</sup>

Protecting intellectual property (IP) is another way that commercial interests affect health. For example, while the pharmaceutical industry has made a huge contribution to health by producing lifesaving medicines, it has also restricted access to essential drugs and vaccines to secure high prices, despite massive public investment in developing those products.<sup>170</sup>

Compared with other businesses, extractive industries such as mining disproportionately consume or harm natural resources (a form of 'negative externality') for the value they generate to shareholders and investors.<sup>309</sup> This imbalance has social and geographical dimensions, since extractive activities often occur in less affluent areas while business owners and investors are more likely to live in wealthy and urban areas.<sup>310</sup> Turning natural resources into commodities often degrades the environment, for example by affecting water and soil quality.<sup>299</sup>

Commercial entities – especially in the food, alcohol, tobacco and mining industries – influence policy and political decisions, through lobbying, political donations and misinformation.<sup>304,311</sup> In Aotearoa New Zealand, the tobacco industry successfully lobbied for the repeal of the Smokefree Environments Regulated Products (Smoked Tobacco) Amendment Act 2022 in early 2024. This Act had introduced three evidence-based measures: decreasing tobacco supply, denicotinising tobacco and introducing a smokefree generation policy by progressively increasing the age at which tobacco could be legally sold to someone.<sup>294,312-314</sup>

In addition to having the Act repealed, the industry also successfully lobbied for sales of snus, oral nicotine pouches and snuff to be legalised, arguing for customer ‘choice’.<sup>294</sup>

### **The harmful effects of the alcohol industry in Aotearoa New Zealand**

Our alcohol industry significantly harms individuals, whānau and communities. Alcohol misuse contributes to poor health through cancers, social and family violence (including violence against children), injuries and road deaths. The estimated cost of this harm is \$9.1 billion each year.<sup>315</sup> The harm caused by alcohol is not evenly distributed. Māori are twice as likely to die from alcohol-related causes as non-Māori.<sup>316</sup>

In Aotearoa New Zealand, 720,000 adults drink at a rate considered hazardous;<sup>ix</sup> 1 in 12 adults say they have at least six drinks on one occasion at least once a week. Men are twice as likely as women to be hazardous drinkers. The prevalence of hazardous drinking is high across all age groups.<sup>317</sup> Although hazardous drinking has dropped significantly from a decade ago, the number of underage drinkers (15 to 17 years) and female drinkers has increased.<sup>40</sup>

Alcohol is readily available. In 2020, more than 11,000 businesses were selling it. People in the most deprived areas are three times more exposed to off-premises outlets. Areas with a high Māori population have nearly 50% more outlets than other areas.<sup>315</sup> Since 2020, online sales of alcohol have expanded rapidly.<sup>318</sup> International evidence suggests that online on-demand services may increase alcohol-related harm (such as underage and binge drinking) as they increase access to alcohol, may not require age verification, and reduce vendors’ liability. Many children have seen and engaged with alcohol marketing on social media, and there is evidence that those who engage are more likely to buy alcohol online and binge drink.<sup>319</sup>

Policies that regulate the availability of alcohol in Aotearoa New Zealand have not kept pace with this evolving digital market. This has created a legal and policy ‘grey zone’ in which on-demand services can circumvent regulations. Recent studies have shown it is easy to buy alcohol without age verification, outside normal retail hours, and have it delivered rapidly in urban centres.<sup>320</sup>

<sup>ix</sup> ‘Hazardous drinking’ is as an established pattern of drinking that carries a high risk of damage to physical or mental health, or harmful social effects on the drinker or others. It is determined by using the World Health Organization’s AUDIT checklist – a score of 8 or more indicates hazardous drinking.

Efforts to increase community control of alcohol retailing have met with mixed success. The Sale and Supply of Alcohol Act 2012 gave Councils the option of developing a Local Alcohol Policy (LAP) for their district that could limit the number, location and trading hours of alcohol outlets.<sup>315</sup> However early examples of LAPs were hampered by insufficient support for community engagement and the actions of alcohol suppliers who challenged efforts to restrict alcohol availability.<sup>321</sup>

For example, implementation of Auckland's LAP was delayed by nine years due to New Zealand's two major supermarket chains taking a legal challenge as far as the Supreme Court. While the appeal was ultimately dismissed, the legal process took considerable time and resources on the Council's part and delayed by nine years the implementation of alcohol sale restrictions that were supported by the local community.<sup>315</sup>

## The climate crisis

Climate change is one of two 'megatrends' increasingly recognised as critical to our future health and wellbeing.<sup>300</sup> The climate crisis will have significant negative effects on Aotearoa New Zealand in the next 15 years. These effects include increased temperatures, changing rainfall patterns, and increasingly frequent and severe extreme weather events. These effects will cut across most determinants of health, including housing, income, employment, education, transport, infrastructure, food security and water quality.<sup>270,322</sup>

We expect the effects of the climate crisis will compound existing inequities, as they will disproportionately affect communities that are already vulnerable. For Māori, this includes potential interruptions to whakapapa and connection to whenua.<sup>303,323-325</sup>

### Direct effects of the climate crisis on health

The effects of climate change are already bringing new and increasing hazards to Aotearoa New Zealand in the form of flooding, extreme weather events, extreme heat and heatwaves, drought, fire danger, sea-level rise and coastal inundation.<sup>270,303,326</sup>

These hazards carry risks that directly affect our health (Figure 33):<sup>303</sup>

- Floodwater increases the risk of drowning, injuries, gastrointestinal diseases and illness.
- Flooding and severe weather events damage homes, which can cause multiple health problems (such as mental health issues, respiratory problems from mould, infectious diseases from overcrowding).
- Flooding and severe weather events affect facilities and services that people rely on for their health and wellbeing (such as schools and ECE, primary health care, aged care, marae and urupā).
- Sea-level rise and severe weather events damage infrastructure that people rely on for their health and wellbeing (such as roads, communications, and water, electricity and gas).

- These hazards significantly affect mental health, particularly after repeated adverse events.<sup>327,328</sup> Mental health impacts are disproportionately felt by the most affected communities (for example, Pacific communities in south Auckland, and rural communities in Tairāwhiti and Hawkes Bay affected by Cyclone Gabrielle and severe weather events in 2023).<sup>328</sup>

**Figure 33. The impact of climate change on health**



Source: Health National Adaptation Plan 2024-2027, Ministry of Health (2024)

## Indirect effects of climate change on health

Increasingly other effects of climate change will indirectly affect our health. These effects include poorer air and water quality; drought; introduction of vector-borne diseases, more pollens and allergens; and greater ultraviolet light (UV) exposure. Poorer air quality increases premature mortality from respiratory and cardiovascular diseases; and poorer water quality and reduced availability increases the risk of contracting water-borne diseases (such as giardiasis, cryptosporidiosis and campylobacteriosis) and food-borne diseases (such as salmonellosis).<sup>329</sup> These diseases can cause economic disruption, large outbreaks of illness and even deaths (such as was seen in outbreaks of campylobacter in Havelock North in 2016<sup>330</sup> and of cryptosporidium in Queenstown in 2023).<sup>331</sup>

Climate change is already disrupting our social and economic systems. Severe weather events are costly – the Treasury estimates Cyclone Gabrielle and the Auckland floods of 2023 together cost between \$9.5 and \$15.3 billion.<sup>332,333</sup> These events will increasingly impact on our primary industry (what and where we can produce food), our employment and incomes, and our housing and communities (including reactive or managed relocation from areas that will no longer be habitable).<sup>334</sup>

Climate change will disproportionately impact communities who live near rivers and the coast – which is most of us. Mean sea level in Aotearoa New Zealand is projected to rise by at least 10 cm by 2040 from 2020.<sup>335</sup> Currently 750,000 people live in areas of Aotearoa New Zealand that are already exposed to extreme flooding.<sup>322,329,334</sup> These areas include major urban centres and 500,000 buildings that collectively are worth more than \$145 billion.

It is predicted that ‘insurance retreat’ – where insurers will no longer insure coastal properties at risk of inundation from sea level rise – will soon affect most properties currently within coastal inundation zones that have a current ‘one in a hundred year’ risk of flooding.<sup>335</sup> A partial insurance retreat could be expected within a decade (with less than 10 cm of sea level rise). Modelling predicts a full insurance retreat is likely within 20 to 25 years, with timing dependent on the property’s elevation and distance from the coast. This will not only have implications for relocation of people and the health and cultural impacts of this, but also large effects on the housing market and broader economy.<sup>334,335</sup>

## Different vulnerability to the effects of climate change

While everyone in Aotearoa New Zealand is affected by climate change, some groups are particularly vulnerable to climate-related hazards. These groups include children, older people, disabled people, people with chronic health conditions, Māori, Pacific peoples, people who live in rural or socioeconomically deprived areas, and people who work in primary industries.<sup>324,329</sup> For today’s children and young people, the psychological and mental health impacts of the climate crisis are already well described.<sup>336</sup>

Māori and Pacific peoples are disproportionately at risk of negative climate change impacts, including exacerbation of existing socioeconomic inequities,<sup>323</sup> because of the industries many are working in (particularly primary production) and current socio-economic circumstances.<sup>323</sup>

Climate change also poses risks to Māori culture, by reducing or restricting people’s access to whenua and taonga species, which will have an enduring effect on whakapapa, kaupapa and tikanga Māori.<sup>323,325</sup> Displacement from whenua that is vulnerable to climate change may also disrupt Māori sharing location-specific mātauranga Māori and tikanga practices, and affect social cohesion and identity.<sup>269,325</sup> Impacts from severe weather events may also have significant spiritual impacts, for example through disruptions to urupā (graveyards), as seen after Cyclone Gabrielle.<sup>337</sup>

## The effects of the climate crisis on the Pacific region

Accelerating sea rise, ocean warming and acidification are major threats for Pacific nations. Despite accounting for just 0.02% of global emissions, the Pacific islands are uniquely exposed to climate events. Their average elevation is less than two metres above sea level. Ninety percent of the population live within 5 kilometres of the coast and half the infrastructure is within 500 metres of the sea.<sup>338</sup> Climate change impacts include significant threats to cultural wellbeing and mental health, as well as greater risks from vector-borne and water-borne diseases, such as dengue and malaria.<sup>339,340</sup>

Aotearoa New Zealand's close relationship with Pacific Island countries - including the significant populations of Pacific peoples who live here and our legal obligations to Cook Islands, Niue and Tokelau - mean that we need to consider how to support impacted communities, including potential needs for relocation and migration.<sup>341</sup>

### Strategies to mitigate and adapt to climate change

As Figure 33 illustrates, the effects of climate change pose multiple risks to health outcomes. Therefore, implementing strategies to mitigate climate change (that is, to reduce greenhouse gas emissions, prevent air pollution and reduce global warming) can benefit both the environment **and** health. However, any strategies we use to mitigate and adapt to climate change must be monitored for equity. These are discussed further in our recommendations (**Section 6**).

#### Mitigating and adapting to climate change

- **Mitigating climate change** involves taking actions that will reduce or prevent greenhouse gas emissions from human activities. These actions include transitioning to renewable forms of energy, using energy more efficiently, adopting regenerative agricultural practices, and restoring forests and critical ecosystems. To effectively mitigate climate change, we need to make structural changes that will reduce emissions and limit global warming to 1.5°C above pre-industrial levels.<sup>342</sup>
- **Adapting to climate change** involves taking actions that make us less vulnerable to the current and expected effects of climate change (such as extreme weather, rising sea levels, biodiversity loss, and food and water insecurity). Measures -many of which need to happen at the local level – include planting more drought-resistant crop varieties, adopting regenerative agricultural practices, improving how we store and use water, managing land better to reduce the risk of wild fires, and building stronger defences against floods and heat waves.<sup>343</sup>

# AI and other digital determinants of health

Despite the many benefits of the online environment – for work, study, socialising, shopping and entertainment, and information – the negative effects of social media, online marketing and misinformation on our health and wellbeing have become increasingly clear. There are also still important differences in access and digital literacy across our communities.

Online groups have contributed to hate speech, racism and violent extremism, sometimes targeting marginalised individuals.<sup>344,345</sup> For young people, social media is associated with experiences of cyber-bullying, exposure to racism and discrimination, and anxiety.<sup>346,347</sup> Prolonged periods online are associated with reduced physical activity. Online marketing to children of ultra-processed food and alcohol is associated with health harms,<sup>319,348,349</sup> and misinformation on the internet associated with more people refusing vaccinations.<sup>350,351</sup>

AI is already widely used in smartphones, facial recognition technology, internet search engines and data analysis tools in business, agriculture and health systems. However, the rapid emergence of generative AI (such as ChatGPT in November 2022) and recent advances in other technologies have significant implications for global economies and societies.<sup>7,16</sup>

Given that generative AI is advancing so rapidly, the scale and timing of its impact on the economy, employment, society and the environment – and, therefore, on our health and wellbeing – is uncertain. However, the consensus is that AI will have a major impact.<sup>352</sup> Some of its potential benefits and challenges are already evident. A critical issue is how we use AI to enhance societal wellbeing, democracy, health and equity and our economy, while also protecting against its adverse effects.<sup>353</sup>

In this section, we consider the impact that current and emerging AI is likely to have on health determinants, and some possible scenarios, risks and challenges.

## Effects of AI on economic growth and productivity

If used properly, AI tools have the potential to unlock enormous amounts of data, creating new opportunities to increase economic prosperity and significantly improve lives.<sup>354</sup> However, these gains may take years or decades to emerge. More cautious estimates suggest that generative AI could increase growth in labour productivity in Aotearoa New Zealand by just one percentage point a year. By 2038, this would add \$76 billion to GDP.<sup>355</sup>



Aotearoa New Zealand's economy is based on exports, and 80% of exports are agricultural. To stay competitive and innovative in the global market, AI will be critical to our primary production sector. AI is likely to give us advantages in resource management and monitoring (for example, water, chemicals and pesticides use), land management (for example, livestock, planting and irrigation), soil management and supply chain logistics.<sup>356</sup> It has the potential to make primary production more efficient and profitable.

## Effects of AI on employment

The impact that AI has on employment will depend on the pace that technology changes, the type of employment affected, and whether AI will help or replace workers. In the US, it is predicted that up to 30% of all hours worked will be 'replaced' by AI by 2030.<sup>18</sup>

The first industries and occupations to be rapidly affected by AI are likely to be those characterised by repetitive tasks and low complexity. For example, many office tasks can be easily automated by AI. US and European studies suggest 13–14% of current jobs will be replaced by AI in the short term, particularly in banking, finance, administration, secretarial, sales and manufacturing.<sup>18</sup> Based on recent surveys in Aotearoa New Zealand, these sectors are increasingly affected here.<sup>357</sup>

In 2023, a Datacomm survey of 200 large firms in Aotearoa New Zealand found that 48% of businesses were using AI; this had grown to 66% within one year.<sup>358</sup> By March 2025, the AI Forum was reporting 82% of firms were using AI tools (a 15% increase in use in six months), along with a small reduction in jobs and some effect on new hiring of staff.<sup>357</sup> Most of this increase appears due to incorporating 'off the shelf' AI tools like ChatGP and Perplexity into existing operations, rather than developing new AI tools.<sup>357</sup>

AI may also create new job opportunities, but the transition to these roles may not be easy for everyone, potentially leading to greater social and unemployment inequality.

The adoption of generative AI is unequal, indicating that it could be a skill-biased technology that exacerbates existing inequalities. On the other hand, generative AI tends to provide greater productivity improvements for workers who earn less to begin with, implying that it could also have an equalising effect if used by those workers with the most to gain.<sup>359</sup>

Within five years, a wide range of tasks across multiple sectors (including the public service, health and social care, engineering and science, and culture and media) are likely to be performed by AI. As some of these sectors have a disproportionate number of female workers, estimates suggest this change is likely to have a greater impact on women.<sup>18</sup> It may also affect younger and older age groups, and disabled people differently.



In the next decade, the potential number of employees [in Aotearoa New Zealand] facing job disruption in the 45 to 49-year-old group is sobering...at least 30% of the tasks of managers, professionals, technicians, machinery operators and drivers, 40% of the tasks of sales workers, and 50% of the tasks of clerical and administrative workers will be effectively done by AI. Across the workforce...10% replacement by AI would equate to nearly 26,000 job losses for 25- to 29-year-olds.<sup>18 [p18]</sup>

However, it is likely that these industries will use AI to replace an even higher proportion of tasks, so the number of people affected could be greater. Manufacturing is also susceptible to automation, where Pacific peoples are disproportionately represented. If AI replaces 10% of manufacturing workers over the next five years, it is estimated that 2,900 Pacific people could be looking for jobs, along with 27,700 others from the same sector, resulting in potentially negative changes for Pacific families and communities.<sup>18,360</sup> Overall, these estimates imply significant impacts for many people in terms of loss of jobs and a need to retrain and develop new skills.

In addition to increasing efficiency and reducing costs, AI is likely to produce better quality outcomes than humans can. For example, AI tools may increase the precision in surgery and cancer diagnoses, make driving and public transport safer, and perform better analysis and research.<sup>353</sup> Together these mixed effects on employment, efficiency and productivity will markedly influence our health and wellbeing.

## Risks and challenges of AI

Concerns about AI include its accuracy (for example, 'AI hallucinations'<sup>361</sup>); algorithmic bias and discrimination;<sup>362,363</sup> increased polarisation of opinions and misinformation;<sup>364</sup> surveillance, privacy and IP rights;<sup>365,366</sup> and cybersecurity and safety (for example in health care).<sup>367,368</sup> Globally it also poses societal and environmental risks, such as weaponised AI (for example, the autonomous weapons systems already being used in conflicts today).<sup>16,362</sup>

### Energy consumption

AI needs good-quality data, large data centres and significant computational power (high performance computing).<sup>369</sup> As AI technology advances, the demand for data centres, especially around Auckland, is expected to double.<sup>370</sup> Hyperscale data centres consume vast amounts of electricity. Around 40% of power is used for cooling, which also affects local water supplies. This additional energy consumption will increase our carbon footprint and could hinder Aotearoa New Zealand's efforts to meet our climate goals and reduce carbon emissions. It may also affect the local energy system and the cost of energy.<sup>370</sup>

## Algorithmic bias

Algorithmic bias includes racial and other biases in AI tools. AI algorithms and outputs depend on the quality of the data they use. When the data is poor quality or biased, the algorithms will be too.<sup>353</sup> Another problem is that AI models developed outside Aotearoa New Zealand do not reflect our population. This could mean they apply inappropriate or discriminatory logic, such as that seen in predictive policing techniques and in the US ‘technocorrections’ industry.<sup>362</sup> There are also concerns in health care that AI tools may replicate existing inequities, rather than reduce them.<sup>353</sup>

## Governance

Governance challenges associated with AI include data privacy, security and ethics. AI systems rely on vast amounts of personal data, which raises concerns about data breaches and unauthorised access. To prevent data being misused, and protect people’s privacy, data protection measures must be robust.<sup>365</sup>

The lack of transparency in AI algorithms can lead to ‘black box’ scenarios, where it is difficult to understand or explain how decisions are made. This opacity can hinder accountability, which could exacerbate mistrust in the public service.<sup>371</sup> It also makes it difficult to address errors or biases in AI systems.

## Ethics and regulation

It is challenging to design and use AI systems in ways that respect human rights and do not perpetuate discrimination or inequality. The risks this poses in the public sector varies widely. While it may be low in some circumstances (such as using AI to monitor wildlife), it may be very high in others (such as using AI to assess who is eligible for surgery or a social benefit, or to develop policies that could exclude some groups).<sup>372</sup>

We need to soberly understand how emerging technologies create new social and existential trade-offs.<sup>362</sup>

Aotearoa New Zealand’s public sector and businesses need a robust regulatory framework to oversee AI and address ethical concerns. Current guidelines, such as the Government Chief Digital Officer’s *Responsible AI Guidance for the Public Sector: GenAI*, aim to balance the benefits and risks of AI.<sup>371,373</sup> International frameworks are also useful.<sup>374,375</sup> However, these guidelines must be used and monitored consistently, to ensure that AI applications are ethical and do not harm specific communities.

## Data sovereignty

The way data is collected, stored and used is important, because it determines how a story is told and who tells the story. It is even more important in the context of AI where the data may be used in ways that are not easy to understand or explain, or may have built-in bias.

In Aotearoa New Zealand there have been increased calls for Māori data sovereignty, in accordance with Te Tiriti o Waitangi and the recognition, by the Waitangi Tribunal, of Māori data as a taonga.<sup>376,377</sup> Māori data sovereignty refers to the inherent interest and rights Māori have in relation to the collection, ownership and use of their own data.<sup>378</sup> It recognises that Māori data should be subject to Māori governance and supports tribal sovereignty and the realisation of Māori and iwi aspirations.<sup>378,379</sup> This means that AI models using Māori data should be developed carefully by Māori or in partnership with Māori, and Māori data governance models utilised.

While the potential of AI is recognised and is being explored by Māori,<sup>380</sup> Māori also have significant concerns. These include where and how data is stored, leading to calls for Māori-owned and Māori-hosted onshore data storage.<sup>378</sup> Generative AI tools such as Chat GPT typically draw on data from the dominant culture and thus risk marginalising Māori and Pacific peoples' voices. There is also the risk of undermining tikanga and commercial exploitation of taonga, including te reo.<sup>363,378</sup> As a 2024 Treasury paper notes, 'Related to [AI], Te Tiriti requires extra consideration of Māori rights and interests, as it creates certain obligations on the Crown that will not be provided for if we simply adopt international regulatory standards and systems.'<sup>363</sup>

Certain types of Māori data (such as data related to te reo Māori and other taonga) may need to be more actively protected, given their value and the contexts in which they are used.<sup>363</sup> Māori organisations have already developed large language models (LLMs) and are using them to help preserve and revitalise te reo Māori.<sup>381</sup>

Data sovereignty and ethical use of AI is not a concern only for Māori. Pacific, community and public-service leaders PHAC spoke with are concerned about how AI can misinform people and increase inequities. Disquiet was also expressed about AI's potential impact on shared values, democracy and governance.<sup>360</sup>

Overall, although there are many uncertainties about the specific impacts of AI on key determinants (including health care), the influence of AI is likely to be large on most aspects of our lives in the next 15 years. Steering and regulating the development of AI tools and their use – and monitoring the outcomes of this in terms of equity and wellbeing – will be critical.

## 5 What progress has been made?

In this section we summarise the perspectives of community, iwi and public service leaders and young people on the progress we have made since 2000. We also review evidence and evaluations for the effectiveness of policies and programmes in modifying the bedrock and soil of our forest, the fundamental structures and determinants of health. There is reason to be optimistic – although patchy and slow, some progress has been made. But given the stresses on our health and social systems, the economic stress many people in our communities are experiencing, and the enormity of current and future challenges such as the climate crisis, current responses lack sufficient urgency and scale.

### Perspectives of community, iwi and public service leaders

In preparing this report, we spoke with community, iwi and public service leaders and young people about their understandings of health, progress in modifying determinants of health and health equity since 2000, and what they thought needed to be done to address current and future challenges (see **Appendix 1** for details). They emphasised that there have been positive changes since 2000. They told us that that overall, local governments and the public service now better understand broader concepts of health and wellbeing, and the contribution of determinants to health and wellbeing. Leaders said that the interconnections between determinants of health, and their biological and physiological effects from early childhood across the lifespan are also now better understood.

#### The bedrock

We heard from community and iwi leaders that the public now understand more about the impacts that colonisation and racism have on health. There is increasing recognition of the promise and potential that Te Tiriti o Waitangi – the foundational contract for people who live in Aotearoa New Zealand – offers. There is also strong awareness of the inter-relationships between a community's health and that of their environment.

[I] take heart with te ao Māori perspective – collective ownership of assets, intergenerational, long-term thinking...

We acknowledge Māori as tangata whenua...and [acknowledge] tikanga.

...We see pae ora, the ability to thrive and live vibrantly as being a combination between culture, identity and belonging and the natural world around us... We're not only self-managing, not only living healthy lives and participating in society, but we're also guardians of our natural landscape.

Leaders told us that rights legislation and approaches related to disability (for example, Enabling Good Lives<sup>87</sup>) and gender diversity (for example, provision of gender-diverse health care) have progressed. Implementation of cross-party commitments, such as aiming to reduce child poverty, have shown that positive impacts in communities can be achieved over a short period, when there is political will.

Across government, leaders told us that the rationale for taking a public health or 'population' approach to social issues is now better understood and being applied. For example, the justice sector has utilised a preventive approach, recognising the societal drivers of violent crime in developing strategies to address the current government target of reducing violent crime.<sup>382</sup>

Introducing wellbeing legislation<sup>383,384</sup> and the Treasury's "Living Standards" framework<sup>208</sup> were perceived as positive steps. However, these have not been fully embedded in the public service, and wellbeing requirements added to the Public Finance Act are being removed (as at August 2025).<sup>385</sup>

Leaders also expressed concerns about the increasing financial and housing challenges faced by many whānau, exacerbated by post-pandemic cost of living pressures and economic and social policy changes. Rising unemployment and job insecurity, household food insecurity, and the anxiety and mental health issues experienced by young people were common concerns. These factors risk a reversal of any positive progress made in health equity in the last decades.

## Investing in communities

We heard a very clear message from community leaders we spoke with. They stressed the importance of mana and self-determination, and developing whānau and community capacity. These factors were seen as fundamental to changing peoples' lives, improving social cohesion, economic prosperity, and successful wellbeing outcomes. Leaders told us it is essential to devolve resources and decisions to communities and others who are 'lower down the system'.

**Shift power to communities, enabling them to assert more ownership, voice and influence on issues that affect them. The role of community voice, leadership, priority setting, and solution generation have been especially evident [in Healthy Families].**

For iwi and hapū, this would represent a shift towards recognising mana and affirming tino rangatiratanga. And for Pacific communities, it would acknowledge that Pacific peoples have the strengths, abilities and resilience to develop relevant, culturally aligned local solutions.

You know, with respect, what happens in Wellington with all the best will in the world, when failure occurs on the ground, what's the impact in town [Wellington]? .... The price is paid in the community and the lives of the individuals and their families. It's there where capability, resource and power has got to be.

There is robust evidence that programmes to support whānau and community aspirations (such as Healthy Families New Zealand,<sup>386</sup> Whānau Ora<sup>387</sup> and Ngā Tini Whetū<sup>388</sup>) are making positive differences to people's lives.<sup>84,386,389,390</sup> Many informants spoke of the potential to make greater progress when leaders, workers and communities were focused on improving circumstances for the most vulnerable members of society:

The biggest question is do we have the will to shift things on behalf of the vulnerable? Collectively, as a society, what is our role to shift these outcomes? Because I think...this is a solvable problem. We've demonstrated that by making progress.

Leaders told us that investment in multi-year, Crown-iwi and hapū social programmes are needed to give iwi and hapū greater autonomy, flexibility, and allow for longer-term planning. The programmes need to be sustained and should focus on broad outcomes such as whānau prosperity and wellbeing. They should build on those that have been shown to work and achieve a positive return on investment (such as Whānau Ora commissioning<sup>391</sup> and Ngā Tini Whetū<sup>388</sup>).

We can design impactful solutions with whānau all day, but if you don't change the way that government is thinking, how they think and how they do policy and commissioning, then it's all for nothing.

## An enabling approach from government and public services

Leaders support greater investment in place-based and community-led programmes, supporting local solutions that are valued, prioritised and resourced in meaningful and sustained ways. This requires a different approach from government.

I think that it is literally impossible for the current architecture to deliver on the outcomes that we're seeking ... we have to flip the architecture, flip the model on its head...the principle of subsidiarity says you leave power and resource in proximity to the problem being resolved, closest to that. People don't live their lives in silos – and [thinking that] interactions with fragmented unintegrated bureaucracies will somehow create an appropriate comprehensive response to multifactorial problems ... it never happens.

Senior public service leaders also recognised the insufficient intersectoral work of government departments and the ineffectiveness of working in silos.

I don't think there is encouragement or support from leadership to work cross-sectorally across the board. It may be perceived as too hard, too time consuming and that sacrifices will be required when it comes to cross-agency decision making and sign-out. This needs to be an expectation in terms of ways of working.

There was critique from in and outside the public service that central government ministries often have little expertise in policy implementation processes – this needs to improve or they need to 'get out of the way'. While recognising the need to resource communities adequately to empower them to find their own solutions, the public service needs to devolve decision-making and clear any obstacles that get in the way of action.

It only works through good relationships and when [the] Crown's not in the way. It doesn't work because of people, power and control. The place we want innovation to happen is in the communities. The Crown's too constrained by ministerial priorities and political priorities.

...a lot of theories, but we need to move to implementation – how to make government more effective. Analysis is often too high level to be useful – it is true but useless.

As a senior public service leader noted:

Even if a policy is beneficial, it requires translation – to allocation of resources, to agencies, then via contracts to services, and finally to whānau. At each stage there are different levers that need to be understood.

In line with this, there were calls to strengthen and upskill the public service at local and regional levels, so that decision making, commissioning, and resourcing are better informed by local knowledge.

Regions are the way of the future. Community solutions are the way of the future. Regions working with iwi, with Pasifika, with strong PHOs. I would be putting solutions to the regions, to the community. There's more trust between the iwi and the communities than the Crown and the communities.

Devolve greater responsibility, decision-making and resources (including senior experienced people) in the public service to the regions with the highest need, so that decisions can be made on the spot.

We heard that the public service urgently needs better analytical tools and skills to design, implement and evaluate policy implementation in 'real time'. These tools are readily available outside of government.

Government [departments] are slow and don't know what they want – ministries have no idea about tech and analytics now available. We don't need more policy analysis; we need tools to turn it into action.

But communities need to be involved in setting out what is important, and which questions are being asked of data. Local knowledge and the understanding of how each community works ('practice-based' evidence) needs to be integrated with data analytics in the context of each community. This will support the design of solutions for successful outcomes.

There are always issues with biases in data and pure belief in quantitative data – we need to know its limitations, and value what other things around evidence in practice and local things, so that evidence can be enacted in local context.

Public services need to be able – and willing – to take risks. Some informants noted there are often 'permissions' (i.e. not real obstructions) and mandates to work collaboratively that are not taken up.

We need people who can pick up the phone, who can build a relationship, who can get stuff across the line and influence and pressure other parts of the sector.

## Leadership from government

We heard that every level of society needs flexible, imaginative and reflective leaders, to manage current and future challenges, provide anticipatory, future-looking governance, and ensure our systems are resilient and have the capacity to adapt.

There is a gap between acknowledgement of the problem [such as the climate crisis] and willingness to do stuff ...it takes political courage.



Leaders told us that good leadership is based on evidence, not misinformation. Being honest and taking people with you are key to developing a common understanding. Improving transparency in the political process is critical to avoid negative impacts on the public perceptions of, and trust in, government.

| The power of industry at the political table is profound.

Leaders also told us that our political parties need to agree on some shared values and commit to long-term multiparty agreements, especially as we have a short political cycle and parties' views on policies seem increasingly polarised. We need '[the] **belief that brave changes are being built to last.**'<sup>392</sup>

| Democracy relies on common, enduring values - social justice, equity- but we need new tactics and strategies.

| We need to shift the "win-lose" culture of government.

## Overall some progress has been made, but a lack of systemic change

Most leaders pointed to a lack of systemic change and some of the barriers to this. They noted the need to get the fundamentals right, to invest in the conditions that nurture our society as a whole.

| There hasn't been much shift in the systemic issues – housing, income etc.

| If you only focus on the 6% of the population who are not in a good way and you neglect the 25% that are hanging on by the skin of their teeth, they will just slide in...you're probably going to miss the things that are keeping the rest of the population healthy. And that's where I think an undue focus on pathology as against wellbeing can actually skew your thinking...

| We have stark disparities. I think the disparities for Māori are still like a source of national shame. And intergenerational disadvantage and dysfunction, we just have not made enough progress. But we have made progress.

# Assessing the evidence for progress

## Evidence-based policy implementation

Government policy makers and legislators over the last 25 years have had access to a large body of public health evidence about how modifying determinants of health (such as assuring adequate household incomes, safe and dry homes, healthy food and satisfying work) can improve health and wellbeing. Policies and programmes addressing income support, child poverty, social housing, home ownership and improving housing standards, have well-evidenced positive impacts on health outcomes. There is strong evidence for the effectiveness of investing in early childhood development and family support to improve health and wellbeing outcomes.<sup>110</sup> However, the model of intervention and implementation approach are critical in determining the extent to which these interventions reduce inequities in health.<sup>36,78,88,220,252,393-397</sup>

Public health action using a range of legislative, tax and health promoting interventions on commercial determinants of health such as tobacco and alcohol has contributed significantly to improved health outcomes and absolute reductions in health inequities, such as in SUDI, some cancers, heart disease and stroke.<sup>73,398,399</sup> Public health has also played a key role in advocating for and monitoring safe drinking and recreation water and improving air quality. Improving water and air quality can have strong pro-equity effects, as more disadvantaged parts of the community often benefit most.

We now understand more about the impact determinants of health have on intersecting outcomes. In other words, the determinants not only affect health and wellbeing, but also other desirable outcomes like success in education and employment, social cohesion and crime reduction.<sup>183</sup> This more holistic understanding of the importance of wellbeing outcomes is reflected in the Treasury's *The Living Standards Framework 2021*,<sup>208</sup> and in programmes such as Whānau Ora<sup>83,84</sup> and Healthy Families New Zealand.<sup>386</sup>

A recent review of the way the political economy of a country influences population health (that is, how economic theories work in the real world, and how politics and the economy influence each other and health) concluded that social democratic welfare states, countries that spend more on public services, and countries with lower income inequalities have better self-reported health and lower mortality.<sup>220</sup> Conversely, there is also extensive evidence of the associations between economic recession, unemployment and introduction of neoliberal policies with increased inequities in health and mortality.<sup>96,172</sup> However there are still gaps in the evidence and need for more empirical studies in our context, recognising the challenge of evaluating the effects of interventions in a complex system with multiple interrelationships.

## Nourishing the bedrock and soil of our forest

Since 2000 there has been positive progress in addressing some elements of the bedrock and soil.

### Te Tiriti o Waitangi: redress and reparation

Before building further on the promise that Te Tiriti o Waitangi holds, the essential steps of recognising the past and ongoing impacts of colonisation – and the need for redress and reparative justice – are required.<sup>400</sup> After more than a century of resistance and far-sighted leadership by Māori in the face of adverse acts or inaction by the Crown, the Waitangi Tribunal and successive governments have engaged in a process of recognition through the settlements process. In some instances, Crown acknowledgement of, and apologies for, breaches of Te Tiriti o Waitangi have been made.<sup>401</sup>

Some recent reparation models have addressed non-financial redress in new and positive ways. For example, the Tūhoe Claims Settlement Act 2014 and Te Urewera Act 2014 include a Crown apology for breaching Te Tiriti o Waitangi, limited financial and cultural redress, and mana motuhake (self-determination) redress through a joint Crown–Tūhoe social service management plan, based on the 40-year vision of Tūhoe.<sup>402-404</sup> Another example is Ruruku Whakatupua (Whanganui River Deed of Settlement) and Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.<sup>405,406</sup> Reaching these settlements has required committed and inspired leadership on both sides, multi-partisan government support, and persistence and compromise by Māori over decades.

### Legislation that enables people to exercise their freedoms and human rights

Legislation is a key element of the bedrock we need to nourish our forest. The New Zealand Bill of Rights Act 1990,<sup>407</sup> Human Rights Act 1993<sup>408</sup> and Homosexual Law Reform Act 1986<sup>409</sup> were milestones in Aotearoa New Zealand's anti-discrimination law.

Since 2000, the government has also supported the wellbeing of the Rainbow community through the Civil Union Act 2004<sup>410</sup>, Marriage (Definition of Marriage) Amendment Act 2013,<sup>411</sup> and Conversion Practices Prohibition Legislation Act 2022.<sup>412</sup>

There's a massive difference between walking into a room and being tolerated [...] versus being celebrated. Community for me means people who know what it's like [to be me]. [Rangatahi, HIVE 2025]

Aotearoa New Zealand ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCPRD) in 2008<sup>151</sup> and the United Nations Declaration on the Rights of Indigenous Peoples in 2010.<sup>413</sup> These are significant milestones. Many of these legislative changes have been agreed through multiparty processes, with leadership from individual politicians. However, our current Human Rights Act needs review, and many pieces of legislation are still not compliant with UNCPRD or UNDRIP, with a lack of substantive progress in realising these international treaties.

The New Zealand government has also maintained reservations in relation to the United Nations Convention on the Rights of the Child (UNCROC), relating to the employment of children, age mixing in prison and differing treatment of children who are not legally resident in Aotearoa New Zealand.<sup>414</sup>

### **Reductions in income inequality and unemployment make a difference**

In the forest, the soil represents resources that nourish whānau health and wellbeing – individually and collectively. After rapid increases in income inequality in the 1990s, peaking in 2015, there was a slight reduction in income inequality between 2016–2020, through income transfers and progressive taxes.<sup>415</sup> However, income inequality is again increasing, and a focus on income obscures extreme disparities in wealth.<sup>62</sup>

Over the same period, unemployment also fell from its peak in the 1990s. This had a positive impact on youth, Māori and Pacific peoples. However, unemployment is on an upward trend again, with these groups again affected significantly more than others.<sup>144</sup>

More positively, the Māori economy has grown substantially, from \$17 billion in 2018 to \$32 billion in 2023, and the rate of Māori asset growth is significantly faster than that of the overall economy (from \$69 billion in 2018 to \$126 billion in 2023), outstripping predictions.<sup>59</sup>

### **Multi-party support for addressing child poverty**

Aotearoa New Zealand achieved significant reductions in child poverty between 2012–14 and 2019–21, with further declines up to 2023 supported by taxation levers and social policies (progressive taxation, Working for Families and ECE subsidies).<sup>416,417</sup> There was initially strong bipartisan support to address the issue, resulting in the introduction of the Child Poverty Reduction Act which established the framework for measuring and reporting on child poverty and agreed long-term targets.

This shows that, with focus and concerted effort, complex problems can be successfully addressed. However there needs to be a stronger focus on reducing the persistent inequities between children of different ethnic groups.<sup>416</sup>

## **Investment in early childhood education**

Education is a key determinant of health – and in turn, healthy children and young people attend school more regularly and learn better. Early childhood education (ECE) has received increased government support for ECE attendance since 2000, most recently with 'Family Boost'.<sup>418</sup>

Despite decades of underinvestment in kōhanga reo, and governments failing to adequately sustain kōhanga reo as an environment for transmitting language and whānau development, it has proved to be a resilient movement for Māori aspirations for mokopuna.<sup>419</sup> However, far fewer kōhanga operate now than at their peak of over 800 in 1994.<sup>419</sup> Similar efforts to maintain Pacific languages (for example, through a'oga fa'a Samoa) have survived, but without adequate investment.

Since 2019 the number of licensed ECE services overall has declined by 5%.<sup>420</sup> There is robust evidence for the cost-effectiveness of early intervention and quality early education for children in terms of health, education and justice gains. But there is not yet a strategic investment strategy or multi-agency approach to support sustainable, quality ECE and early childhood programmes.

## **Changes in secondary education**

When young people do well at school, they are more likely to take part in training and employment. Between 2002 and 2004, the government introduced NCEA, replacing the School Certificate and university entrance system that focused on external exams, standardised testing and scaling. NCEA aimed to increase diversity in the curriculum and better recognise individual skills.

Overall, NCEA has produced more successful outcomes for students, but large disparities in educational achievement remain, experienced disproportionately by Māori and Pacific young peoples.<sup>421</sup> At the same time, students who attend kura kaupapa Māori achieve similar outcomes to non-Māori students in mainstream schools, and better outcomes than Māori students in mainstream education.<sup>422</sup>

## **Quality housing for everyone is possible – but requires sustained political commitment**

Ensuring that everyone can access quality housing has been a goal of multiple governments. Despite overwhelming evidence for the health and social benefits, and positive return on investment provided by social housing, achieving this aim has suffered from different ideological approaches and policy swings.<sup>192,252,256,258,259,423,424</sup>

The increased rate of social homes built between 2017-2024 (accelerating in 2023-2024 with over 8000 new homes built by Kāinga Ora in the two years March 2023-March 2025) shows that it is feasible for social housing to ramp up to meet housing demand.<sup>425</sup> The implementation of the Healthy Homes Standards and strengthened tenancy laws also illustrate implementation of evidence-based policy to support low income whānau and households. Other initiatives focused on specific populations, such as the Healthy Homes Initiative<sup>426</sup> and Housing First<sup>255</sup> (addressing homelessness) have demonstrated important health and social benefits.

### **Healthy Homes Initiative (HHI)**

The Healthy Homes Initiative (HHI) aims to increase the number of children living in warm, dry, and healthy homes, to enhance their health and reduce housing-related hospitalisations.<sup>426</sup> It was established in 2013 as part of the Rheumatic Fever Prevention Programme and was expanded to the remainder of the country in early 2023. The programme focuses on pregnant people, low-income whānau with children aged between 0 and 19 years old who have been hospitalised with a specified housing-related condition, and individuals at risk of, or who have had rheumatic fever.

### **How does it work?**

Contracted HHI providers work with eligible whānau to provide education and access to interventions to create warm, dry and healthy homes. Providers work with a range of government agencies and regional/local partners. Interventions provided to whānau include curtains, insulation, beds and bedding, and support in finding alternative accommodation if needed.

- **Impact:** HHI reduced hospitalisations by 19.8%, improved housing quality, and led to better school attendance and employment outcomes among families. The programme has enhanced the overall wellbeing of low-income Māori and Pacific populations.
- **Evidence-based success:** HHI has shown measurable success in improving housing quality for those in need. Working with local providers who know their communities is key to success.
- **Health and social improvements:** This housing intervention has demonstrated health and social benefits, with reduced hospitalisations, improved school attendance, and better employment rates.
- **Room for growth:** While the intervention has had significant positive outcomes, expanding its reach and integrating it with wider system changes could further enhance effectiveness in improving health and wellbeing.
- **Addressing health equity:** HHI has addressed housing quality, which is critical for improving health outcomes. It has been particularly impactful for Māori, Pacific peoples, and other groups who are disproportionately affected by poor quality housing.

However, home ownership rates remain low and there is overwhelming evidence of housing need, with rates of severe housing deprivation increasing over the last three decades.<sup>427</sup> There is still a large unmet need for accessible housing and inclusive design standards. The current use of accommodation supplementary benefits transfers large amounts of public money into private property investors; this is not a long-term solution.<sup>428</sup> Without more sustained investment in infrastructure, social housing and good-quality affordable homes, our precarious housing market will continue to be an immense challenge for many people and for health equity.

### **Imprisonment rates can be reduced**

Although public concerns about violent crime often make headlines, the New Zealand Crime and Victims Survey suggests levels of crime have not changed much since the survey began in 2018, with small increases in fraud and vehicle theft.<sup>429</sup> The significant positive policy and practice shifts that have occurred in our justice system are less well known. For example, from 2007 to 2021 the rate of incarceration of young Māori men (<25 years) dropped significantly.<sup>430</sup> Changes in sentencing policy (such as more community-based, intensive supervision), and the government's 2017 goal to reduce incarceration by 30% contributed to this, while measures associated with the COVID-19 pandemic had temporary effects.<sup>431</sup>

This reduction was also associated with greater recognition in the Courts of the underlying causes of offending, with the development of Alcohol and other Drug Treatment courts,<sup>432</sup> and rangatahi and Pasifika youth courts.<sup>433</sup> There is still however insufficient support for the learning impairments, addiction and mental health issues, and disability needs (for example related to fetal alcohol spectrum disorder (FASD), traumatic brain injury or neurodiversity) of many people whom we imprison.

The children who, at age 10, or 11 we think of as “vulnerable” and in need of care and protection – are very often the same children who, at age 14, we see before the Youth Court. They have the same underlying issues but they move from being seen vulnerable to being seen as criminal...the children before the Youth Court are those who we, as a society, have profoundly failed in their early years. Our failure to provide a safe and nourishing environment for children to grow up in sets these same children on a path to prison.<sup>434</sup>

### **Changes to care for children experiencing neglect or abuse**

The Royal Commission of Inquiry into Abuse in Care, examining the period 1950-1999, has highlighted not only decades of abuse, disproportionately experienced by Māori, Pacific peoples and disabled children, but also the cycles of violence this has created.<sup>435</sup> Over 200,000 people were systematically abused while in the care of state and faith-based institutions, and there were decades of deliberate cover up. This has contributed to institutional mistrust, intergenerational trauma and significant health impacts. It has been

estimated that survivors have an average life expectancy of 46 years (24 years lower than the rest of the community of that age cohort), and are more likely to suffer violent deaths (from self-harm, motor vehicle deaths and assault).<sup>436</sup>

This abuse also has significant economic costs – not only for the individuals and families concerned. The Inquiry estimated the total economic cost of abuse and neglect in care between 1950 and 2019 at around \$200 billion, with lifetime health costs estimated at 7% of total lifetime costs.<sup>437</sup> The total cost is over three times the cost of the government's COVID-19 response, and over four times the cost of the Canterbury earthquakes response and recovery.<sup>438</sup>

The way we care for children experiencing neglect or abuse has started to change, but there is still a long way to go. There is still significant ongoing abuse and neglect of children while in the custody of Oranga Tamariki, disproportionately in secure residences and when children return to their parents' homes.<sup>439</sup>

However, from 2014 -2023, the number of Māori and non-Māori children who were subject to a report of concern to Oranga Tamariki fell, with the proportion of Māori remaining at about 50%.<sup>440</sup> And although the rate of tamariki Māori in care increased between 2014 and 2018, it has fallen significantly since then. This reduction may be associated with recent legislative and policy changes. For example, Section 7AA (since repealed in April 2025) of the Oranga Tamariki Act 1989), and Oranga Tamariki partnerships with iwi are intended to ensure tamariki Māori are in the safe care of their whānau, hapū and iwi.<sup>441</sup>

### **Legislation to reduce harm from tobacco and alcohol works**

Taxation and pricing levers have been key to addressing harm from tobacco and alcohol in Aotearoa New Zealand. Overall, the effect of corrective tax policies on health outcomes has been pro-equity. For example, tobacco taxes have contributed to major declines in smoking, with greater impacts on young people and Māori, resulting in fewer smoking-related diseases and deaths. There is evidence of strong public support for greater use of taxation levers, for example in addressing harm from alcohol and sugary drinks.<sup>442</sup>

### **Changes in approaches to supporting whānau**

In addition to universal social and health services, a range of programmes and projects focus on specific communities or families with more complex support needs. These programmes use varied approaches such as collective impact,<sup>443</sup> systems change<sup>389</sup> or social investment methodology.<sup>444</sup> They may have multiple, broad wellbeing aims, or be more tightly focused (for example, focusing on a specific point in life, such as pregnancy or early childhood).



Strengthening Families is a structured, interagency case-conferencing system for coordinating services to whānau that has been operating in Aotearoa New Zealand since 1999.<sup>445</sup> It aims to intervene early to support families facing challenges and offer prevention or intensive support. It was developed by Oranga Tamariki, the Ministry of Health and Ministry of Education; eight other government departments are signatories.

Outcomes of Strengthening Families have never been formally evaluated. However, in 2019, a review for Oranga Tamariki said that it was dealing with increasingly complex cases, and in many areas, government agencies were engaging poorly in local management groups.<sup>446</sup>

Whānau Ora, established in 2010 collectively by Te Puni Kōkiri, the Ministry of Health and the Ministry of Social Development, supports whānau to determine and achieve their own goals and aspirations. It is a Māori-led and whānau-centred approach. The Whānau Ora commissioning model includes support from kaiārahi (navigators) and flexible funding to '[enable] whānau to work together intergenerationally, in culturally aligned kaupapa with financial support.'<sup>447</sup>

We saw Whānau Ora as an opportunity to do things differently. We were not bidding to be the Government's alternative welfare net; we were bidding to be an impact investor, to foster a pipeline of investment in whānau capability and innovation.<sup>83</sup>

Whānau Ora has been extensively evaluated, including analysis of the social return on investment of specific interventions. These evaluations have shown the approach has highly positive wellbeing and economic benefits.<sup>447,448</sup> This evidence shows that specific interventions can create equitable changes for whānau, but these interventions need to be sustained and scaled to the need.<sup>83,84,391,448,449</sup>

Ngā Tini Whetū was developed in 2019 and is funded by Te Puni Kōkiri, Oranga Tamariki and ACC. This programme is delivered through Whānau Ora commissioning agencies. It supports whānau to act autonomously, use their strengths to stay on the path towards mauri oho (energised life force) and to flourish with mana.<sup>391</sup> Despite having to manoeuvre around ongoing system barriers such as inflexible agency funding and governance mechanisms, the programme has been positively evaluated.<sup>390</sup>

Since 2015 there has been development of 'social investment' approaches by successive governments.<sup>450</sup> Social investment is characterised by a focus on outcomes (as defined by whānau, communities or government), investment in early intervention, and use of data and evidence to prioritise resources where the impact and value is highest.<sup>444</sup> Three social investment place-based initiatives were established in 2016 with two – the South Auckland Social Wellbeing Board<sup>451</sup> and Manaaki Tairāwhiti<sup>452</sup> – still in operation. The Social Investment Agency, established in 2024, has commissioned three further 'demonstration initiatives' as of June 2025.<sup>453</sup>

Place-based approaches such as the South Auckland Wellbeing Board, the Southern Initiative,<sup>454</sup> Healthy Families New Zealand<sup>386</sup> and the Tāmaki Regeneration programme,<sup>455</sup> while having varying goals and approaches, have similarities in aiming to create and resource community-led solutions. These programmes also aim to use data more effectively, intervene early, respond to local priorities and coordinate government services to work more effectively for communities.

## What have we learned? Some progress – but ongoing challenges

Along with the assessment above, the trends in key determinants and health inequities in Aotearoa New Zealand presented in Section 3 reflect mixed progress. We demonstrate improvements in some key determinants but show that the uneven distribution of resources and opportunities has largely persisted over 25 years. Regardless of the indicator used, Pākehā are consistently privileged in terms of the determinants of health. Pākehā remain more advantaged in terms of wealth, income and material circumstances, and this is reflected in housing, education, employment and subsequent health outcomes.

There has been little progress on important determinants such as income equality, and home ownership, household crowding and affordability indicators have gone backwards since 2000. Wellbeing outcomes such as social connectedness and mental wellbeing are also going in a negative direction.

Our current economic system does not aim to achieve equity, but neither is it meeting the stated aims of a neoliberal market economy, such as lower prices for consumers. After four decades of neoliberal economics, we have low economic productivity and growth, and evident market failures (such as the housing market and supermarket duopoly).<sup>176,456-458</sup>

In the absence of a strong commitment to redistribution (via the tax and benefit system), a focus on economic growth entrenches inequalities and arguably comes at the expense of social cohesion. Any positive benefits of our current economic model are highly unequal. Almost two in five people find it hard to meet everyday costs;<sup>178</sup> two-thirds of New Zealanders do not feel 'well off', and one in four sometimes do not have enough to eat.<sup>179</sup> This was the primary concern of young people that were interviewed for this report.

New Zealand will have to lower the cost of living and make sure that there is fair pay so people can actually thrive in the country. There needs to be changes so that people can live comfortably and with dignity on the income they get.  
[Rangatahi, The HIVE]

Our social safety net is failing, with benefit levels that are cementing in hardship and again increasing child poverty.<sup>427,428,459</sup> These all have direct effects on physical and mental health.

It's been so important to me to provide for myself and for the people I care for; without that, I feel a little helpless. [...] I've noticed my mental health has been impacted significantly when I have less money. [Rangatahi, The HIVE]

AI and the digital environment offer huge benefits and potential for good, but also the potential to increase harm from discrimination, the spread of mis- and disinformation, and the exacerbation of inequities. AI tools have developed within the current environment and reflect the global economic system and colonial history.<sup>378</sup> The online environment contributes to misinformation, unfiltered discrimination (such as through trolls, and racist or misogynist influencers) and increased access to harmful products. The contribution to endemic social anxiety, cyber bullying and violent extremism is also a public concern.<sup>460</sup> These harms can be mitigated, if governments take account of the needs and concerns of different communities and ensure these are reflected in appropriate systems of governance and regulation. Importantly, these systems should uphold inclusivity, transparency and human-centred values rather than allowing power over digital environments to be concentrated in the hands of a few.<sup>373</sup>

We need data centres in Aotearoa that serve communities...we need to retrain models with our own data. AI entrenches bias when using existing data and algorithms.

Trust in public services is currently vulnerable, partly fuelled by misinformation and industry lobbying.<sup>461</sup> Social divisions are evident across key issues such as the significance of Te Tiriti o Waitangi,<sup>179</sup> and the extent to which environmental protection should be weighed against business interests.<sup>17</sup> The security of one of our greatest assets – our 'clean, green environment' – is threatened by weakening of key regulatory protections.<sup>462</sup> And, despite recognition of the reality of climate change and evidence of our susceptibility to the impacts of it in Aotearoa New Zealand, our response has been slow and inadequate.

Young people told us about their aspirations for loving relationships, strong family and cultural connections, financial stability, and good jobs. Many spoke about the need to make our places — both physical and digital — more supportive, accessible, and liveable. The links between our environment, mobility (accessible public transport), and mental wellbeing came up often. People want to feel safe and able to move freely. Although many were positive about their own individual future, they were pessimistic about the possibility of system change.

As one leader told us, on a global scale we are now facing a 'poly-crisis' – that is, where crises are not just amplifying and accelerating but also appear to be synchronising. The triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste, is feeding human crises, leading to conflicts for resources, population displacement and widening gaps in health outcomes.<sup>16</sup>

We need to recognise the deep uncertainty and complexity this brings. There is, even more than before, a need for evidence rather than misinformation, a focus on intergenerational equity and an acknowledgement of what we don't know.

It feels like the world is unstable, and that stress stays with me every day  
[Rangatahi, The HIVE]

Even since from our childhood, so many 'once in a lifetime' occasions. Financial crisis, global pandemic...Housing crisis, youth mental health crisis.<sup>463</sup>

## 6 What needs to change?

### PHAC's recommendations

You've got a metaphorical flood in your laundry. You've got two jobs – both to find the leak and block it – and mop it up, 'cause you don't want to live in a mess. But if you don't block the leak, you're gonna be mopping a damn long time...The understandable short-term priority for mopping, which we see at the moment unfortunately, is resulting in running out of mops and moppers. The public health, social determinant conversation [is] about root cause identification, finding the underlying hole and blocking it up.

To achieve pae ora and intergenerational wellbeing, we need to address all levels affecting the growth of our forest. In this final section, we focus on actions the government can take now to better nurture our forest. Unless the bedrock is strong and the soil fertile, our health system will face even greater demands than today, and we will not reduce differences in health and wellbeing outcomes as effectively or efficiently. This will also slow down improvements in overall health and social outcomes.<sup>7,30,78,96</sup> We also need to nourish the root networks, the relationships within whānau and in the communities that support us.

An intergenerational and future-focused approach is required, with agreed, long-term wellbeing goals. Central government provides the key settings (such as an equitable tax structure and fair employment conditions) that ensure people have access to the resources they need to thrive. Central government leadership is also critical in addressing challenges like AI, climate change and changes to the way we govern our society – this cannot be done by any other single organisation. However, the government is not the only player in many of these areas; iwi and hapū, non-governmental and community-based organisations, and business can also contribute significantly.

Some of these actions need long-term thinking and multiparty political agreement. This should be achievable. Most iwi and hapū have a multi-generational vision, and strategies that extend well beyond political terms.<sup>464,465</sup>

An important advantage is that although the impact of multiple, negative determinants of health can compound, the positive impact of solutions can too.<sup>16</sup> When considering how effective a potential change can be, it is critical to look at the likely compounding positive effects across health and wellbeing outcomes. Understanding the optimal level (for example, intervention at a population or community level) and the timing of intervention is also important.

Many of the approaches we propose are 'win-win' – they have large wellbeing co-benefits. For example, good urban design and social housing not only deliver better homes and living environments, but also health gains, improved school attendance, and have benefits for local employment and community cohesion. In addition, these interventions can contribute to climate mitigation and environmental protection.

Given the synergy of potential actions, our recommendations to the Minister of Health focus on investments that simultaneously address multiple government goals and achieve co-benefits. We expect the Minister will work with colleagues on a whole of government approach.

## Invest in and empower communities, the root network of our forest

Wellbeing, social cohesion, economic prosperity, and health start within our whānau and communities. Their mana, aspirations for self-determination, capacity and strengths are fundamentals to build on. Early support for children and their families in our communities is vital to improving health equity and wellbeing across the life course. Our review of evidence and our engagement with community, iwi, and public service leaders suggest that both the siloed way government currently does its business and a lack of innovative approaches 'get in the way' of community-led solutions to the challenges we have outlined. Therefore, the actions we propose below are primarily focused on supporting a change in the approach of the public service, in order to support communities to achieve long-term, measurable wellbeing and health equity goals.

### The PHAC recommends that the government:

**Focus the whole public service on measurable wellbeing goals that prioritise equity - and hold all government services jointly to account for achieving them.**

This would support greater policy coherence across government, which sometimes appears divergent (for example, aiming to deliver on current "All-of-Government" targets such as improving youth mental health and reducing youth crime - while introducing policies that reduce access to youth benefits and apprenticeships).<sup>466,467</sup>

**Direct government agencies to work together** to support innovative, whole of community responses to the wider determinants of health to meet these goals. Senior public service leaders require a clear political mandate for cross-sector work and the Public Service Act 2020 can be used more effectively.<sup>468</sup> There needs to be further incentives for collaborative working, modelled through good leadership, devolution of responsibility, integrated agency funding and commissioning for shared outcomes.

**Invest in place-based and community-led approaches.** This means moving beyond pilot programmes to more secure multi-year funding of proven approaches, and greater investment in community-led responses (for example, tāngata whaikaha Māori programmes designed and led by tāngata whaikaha Māori).

**Ensure positive use of social investment methodology, supporting Māori, Pacific peoples, and other communities to shape social investment locally** in a way that works for their communities. The use of government data in social investment must be analysed, informed, and meaningfully evaluated, complemented by direct input and on-the-ground knowledge from the communities themselves.

**Commission services for whānau and communities with multiple and complex support needs, regionally and locally,** in ways that are most relevant to those whānau and communities. Commissioning should build on the experience and evidence from Whānau Ora and other examples of good practice,<sup>469</sup> and support further capacity and capability development of Māori, Pacific, and other community-based providers.

**Devolve greater responsibility, decision-making and resources (including senior experienced people) in the public service to the regions with the highest need,** so that decisions can be made closest to those they affect.

**Invest in the public service to build expertise and skills,** including ethical use of new technologies such as AI, and use of the IDI infrastructure. Public trust in public services is relatively high and remains higher than it was before the COVID-19 pandemic, but is vulnerable to change.<sup>268</sup> The government needs to ensure the public service continues to be competent, fulfils its function in giving 'free and frank advice', and represents the communities it serves.

These recommendations align with rangatiratanga for iwi and hapū, supporting Māori to direct their own solutions and achieve their own aims for the future. For Pacific communities, these recommendations acknowledge that Pacific peoples have strengths and abilities to design and deliver culturally aligned, high quality, local solutions.

## Nurture the bedrock

Shared values and respect for human rights are key to a thriving and resilient democracy and a cohesive, healthy society. Democracy relies on agreement on facts, public trust in government and public services, and acknowledgement of our shared history. By 2040, 200 years since Te Tiriti o Waitangi was signed, the Crown and Māori must have a positive and future-focused relationship, built on confidence and mutual respect.<sup>470</sup>

## Towards 2040: Te Tiriti o Waitangi and our constitution

As a first step, the Crown must meet its existing commitments under Treaty settlements, and significantly improve how settlements are managed, as recommended in the recent Auditor-General's report (2025).<sup>471</sup> If the government fails to provide the promised redress, iwi, hapū and whānau will forego significant economic and social opportunities, and the health and wellbeing benefits associated with them.

For a settlement to be durable and the Crown's apology to be meaningful, public organisations need to move beyond transactional ways of working with iwi and hapū...The public sector needs to understand that settlements are the basis for long-term relationships with iwi and hapū, and that it needs to manage them accordingly.<sup>471</sup>

Failure to meet Crown commitments would further damage the government's reputation, making it harder for the public sector (including the health sector) to achieve what the settlements intended. It could also create litigation and financial risks for the Crown.<sup>471</sup> It is essential for mana Māori, health and wellbeing that the Crown respect existing obligations under current settlements, and that further progress in processes of reparative justice is made in good faith.

The PHAC supports initiating a broad nationwide discussion in communities about Te Tiriti o Waitangi and our future constitutional arrangements moving towards 2040. The frame and scope of this korero must be agreed by both parties to Te Tiriti o Waitangi and led by respected Māori and Tangata Tiriti leaders. The discussion should cover our constitution, rights and freedoms, recognising the ongoing impact that colonialism has on Māori, and the need for reparative justice. It needs to address common misinterpretations of Te Tiriti o Waitangi and 'misremembering' of our history.

In every society, there can be a kind of social amnesia where people may innocently forget what might have happened in the past. But in this country, there has been a deliberate misremembering of history that has obscured the reality of what colonisation really was, and is. It has replaced the harsh reality of its racist violence and its illegitimate usurpation of power with a feelgood rhetoric of Treaty-based good faith and Crown honour.<sup>472</sup>

The process for this discussion needs to be thoughtful and deliberate, allow for ongoing reparation and healing, and offer communities support. Matike Mai, the kaupapa originally led by Dr Moana Jackson and Margaret Mutu for the National Iwi Chairs forum, could provide a blueprint for starting that discussion.<sup>473,474</sup> The working group of Matike Mai held over 250 hui throughout New Zealand over three years, and proposed a range of different possible models for constitutional change, with the goal of transformation by 2040.<sup>473,474</sup>



The discussion must allow people to express their views safely and hear, and reflect on, other people's views. Recognising existing power imbalances, it must be adequately resourced and appropriately arranged, so that everyone can take part. Rangatahi voices must have priority and greater weight, as young people have a bigger stake in intergenerational equity.

We can also learn from others' experiences – for example, the agreements, plans and processes developed between provinces and federal government of Canada and Indigenous (First Nations) peoples since ratifying UNDRIP.<sup>475,476</sup>

### Canada's experience

In November 2019, the Government of British Columbia became the first province or territory in Canada to pass and implement the Declaration on the Rights of Indigenous Peoples Act (the Declaration Act).<sup>476</sup>

The Declaration Act was developed with the First Nations Leadership Council. It sets out a process to ensure that provincial laws are consistent with rights defined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP); an action plan to achieve the Declaration Act's objectives; and a process to report annually on progress. The Declaration Act also includes a provision for provincial governments to make agreements with Indigenous governments on joint decisions and consent.

In June 2021, the House of Commons (Canadian Federal Parliament) passed an Act affirming UNDRIP,<sup>475</sup> and upholding the rights of Indigenous peoples. The Act recognises that Indigenous Peoples have an inherent right to self-determination, which includes the right of self-government, and that the Government has obligations to implement an action plan to realise the aims of the Declaration.

In Canada, the national, provincial and territory governments are negotiating modern treaties with Indigenous peoples. These treaties recognise and do not extinguish Indigenous rights. They can evolve over time, based on the Crown and Indigenous governments coexisting, and as an ongoing process to reconcile pre-existing Indigenous sovereignty with assumed Crown sovereignty.

### The PHAC recommends that the government:

**Implement fully the Auditor General's recommendations (2025)** to Crown organisations and meet the Crown's obligations to fulfil commitments made in Treaty settlements.

**Support a nationwide discussion about Te Tiriti o Waitangi and our future constitutional arrangements moving towards 2040**, agreed and co-led by both parties to Te Tiriti o Waitangi.

## Commit to human rights and anti-discrimination

For a healthy, equitable and inclusive society, we need to embed existing rights legislation more deeply into our constitutional framework. We can build on the anti-discrimination and inclusion gains made for disability and Rainbow communities.

It is also essential that we continue repairing the discrimination embedded in policies, practices and social norms, as this drives inequality and perpetuates health gaps between Māori and non-Māori. Active anti-racist action must be rooted in our systems.<sup>86</sup> These actions would uphold Te Tiriti o Waitangi commitments and our international commitments, such as those under UNDRIP. Celebrating Indigeneity as a positive determinant of pae ora – within a non-racist system that does not penalise tangata whenua for being Indigenous – should be our goal. Recognising and healing intergenerational trauma, decolonising and re-Indigenising is important in this process,<sup>29</sup> along with tangata o Te Tiriti learning to be an honourable partner.

Aotearoa New Zealand also needs to acknowledge the shared whakapapa of tangata whenua with te tagata o le moana and address the impact that colonisation has had on Pacific nations. An important step in this process is re-examining our identity and re-situating ourselves as a Pacific nation alongside others. This can enlarge and inform our perspectives about how to respond (nationally and regionally) to climate change and environmental challenges, and how to act on inequities that Pacific peoples experience in education, employment, wealth and health in Aotearoa New Zealand.

### The PHAC recommends that the government:

**Embed fully existing human rights legislation (including realisation of commitments made under UNDRIP and UNCPRD) into our constitutional framework.**

**Monitor the progressive realisation of human rights; and when they are breached, monitor how this affects health and wellbeing.**

## Modifying the market economy

The goal of a thriving economy and greater wealth should be improved collective wellbeing, rather than a narrow focus on GDP. Our economic system - that results today in one in four of our children growing up in unhealthy, crowded homes, with inadequate material resources and a lack of sufficient food - cannot be seen as a success.

If we are to address the uneven distribution of determinants of health (such as income and wealth) alongside the other challenges we face, we need more discussion and consensus about the values that underlie our economy.

Looking after our people and planet are the two main issues that matter most to me. I don't think we can have one without the other, I believe they go hand in hand. This means lifting everyone out of poverty and creating robust environmental policies. [Rangatahi, The Hive]

The World Economic Forum's *The Future of Growth Report 2024* looks at multiple factors to assess balanced growth. It scores Aotearoa New Zealand relatively well on inclusiveness and resilience, less well on innovation and poorly on sustainability.<sup>477</sup> To improve this score, Aotearoa New Zealand could expand work on wellbeing previously carried out by the Treasury.<sup>208,478,479</sup> Other jurisdictions explicitly consider broader wellbeing and intergenerational outcomes in legislation and budgets, such as in the Welsh Well-being of Future Generations Act (2015).<sup>480</sup>

Wales has developed measurable milestones, such as reductions between social groups in education, employment, mental health and life expectancy differences; a million speakers of Welsh by 2050; and net-zero greenhouse gas emissions by 2050. Scotland is considering a similar Parliamentary Bill as of June 2025, and there are similar discussions in other EU countries. There is advocacy internationally for implementation of similar legislation, including in Australia and Aotearoa New Zealand.<sup>481-483</sup>

We need to create economies that are distributive by design – ones that share value far more equitably amongst all those who help to generate it.<sup>484</sup>

Outdated economic theory which has failed to deliver equitable outcomes should be challenged. Future-thinking economic theories are now considered mainstream rather than alternative. Examples are the circular economy (based on principles of eliminating pollution and waste, circulating or recycling products and materials, and regeneration);<sup>485</sup> and the concept of a regenerative economy, also known as the 'doughnut economy', that recognises our environmental limits and the value of strong societal foundations.<sup>486,487</sup> This concept has been reinterpreted in Aotearoa New Zealand, sharing Indigenous thinking evident in other global models.<sup>488</sup> This kind of approach is already evident in economic strategies espoused by some iwi, for example Kai Tahu,<sup>465</sup> and the Kīngitanga.<sup>489</sup>

#### Kīngitanga statement (April 2025)<sup>489</sup>

**Our tikanga:** commercial arrangements shall be driven by our values, rather than just accommodate them.

**Our whakapapa:** any development must honour our enduring relationship with whenua – connecting past generations to future ones.

**Our mana:** while we value partnership, we must maintain clear authority over decisions that affect our lands and people.

**Kaitiakitanga:** our timeframe extends to mokopuna eight generations forward.

**Taonga Māori:** our land and water carry cultural and spiritual significance that transcends economic value. They are taonga to be cherished for future generations.

We inherit the struggles and victories of those who have gone before us. We have been gifted the opportunity to enact our mana motuhake instead of compromise. Te Arikinui looks forward to the new models that will emerge – models that fulfil our pursuit of mana motuhake.

## Reset economic levers

Views differ on how fair and progressive our current economic system is. Wealthier people tend to think it is fairer than those who are less wealthy.<sup>179</sup> But low working incomes and benefit levels today are clearly not enough for people to have a healthy life and fully participate in society.<sup>179,428</sup> Instead, alongside a complex and rather punitive social welfare system, they contribute to entrenched poverty, affecting far too many of our children.<sup>428</sup>

At the same time, an ageing population, increased demand for health and disability services and challenges like the climate crisis put increased fiscal pressure on our tax system. Current and future governments have choices over how to manage these fiscal pressures. They can do so through spending controls, greater use of private funding mechanisms, or increases in tax as a share of the economy. Each of these have trade-offs in terms of fairness and efficiency.<sup>490</sup>

Tax levers that could be further utilised include larger redistributive income and/or wealth transfers (for example, through capital gains tax (CGT) on property and assets).<sup>490</sup> These transfers could be reinvested in adequate provision of social and health services accessible to all.

Although Aotearoa New Zealand had made some progress on gender pay equity, this has recently stalled,<sup>491</sup> and even less progress has been made with other important supports for secure and satisfying employment, such as fair pay agreements. A disproportionate number of Māori and Pacific peoples, particularly women, are on the minimum wage or earn less than \$25 an hour.<sup>492,493</sup> Lifting the minimum wage to a 'living wage' would be a pro-equity step for all.

It took me so long to be able to land a part-time job to help lessen the financial burden for my family. I had to really network and meet people who had connections that would entrust a young boy to undertake a job responsibly. There is such a negative perception around young people and jobs, and when you add coming from a minority background with little English into the mix, well, then you're screwed. [Rangatahi, The HIVE]

The government could also consider a universal child benefit in addition to more targeted measures for families. At the other end of the life-course, although our universal superannuation scheme has historically led to low levels of elder poverty, it was premised on high levels of home ownership, which increasingly will not be the case.<sup>494</sup> Recently, several reports have proposed a universal basic income, or a 'social floor' (baseline living standard) for all households. Given the potential impact of AI on employment in future, this may become an urgent need, and the PHAC recommends further investigating this approach.<sup>359,428,493</sup>

#### **The PHAC recommends that government:**

**Articulate an explicit approach to economic growth, societal wellbeing and equity.** We need an economic system that is more equitable and redistributive by design.

**Make further use of redistributive income and wealth tax levers** to reduce income and wealth inequities, and support reinvestment in social and health services.

**Implement the recommendations of the 2019 Welfare Expert Advisory Group Report: Whakamana Tāngata<sup>428</sup>** to ensure social benefits allow full participation of everyone in our society.

**Continue to monitor economic impacts of policy choices for wellbeing,** using or developing further the Treasury's Living Standards Framework and He Ara Waiora.<sup>22,208,479</sup>

**Further explore options for a baseline living standard.**

## Confronting the megatrends

### **Invest in 'win-win' solutions that nourish the soil and have compounding benefits for health and other social outcomes.**

#### **The climate crisis: inserting urgency into our response**

Climate change is the greatest global health threat facing the world in the 21st century, but it is also the greatest opportunity to redefine the social and environmental determinants of health.<sup>301</sup>

Aotearoa New Zealand's response to the COVID-19 pandemic demonstrates that rapid, dynamic government action, informed by science and evidence, can successfully address major global health threats and save lives.<sup>79,495</sup> Climate change requires a similar focus and urgency but with longer term commitment.

Climate change makes me very stressed, and I think it's very disheartening. I feel like I'm not doing enough to contribute. Feels hopeless on an individual level because mega corporations do so much and there's only so much we can do. [Rangatahi, The HIVE]

Interventions to mitigate climate change, support transition to clean energy, and reduce emissions, deliver cost savings and avoid the costs and risks that arise from inaction. These include market risks, greater ill health, and the cost of having to make a harsher, more expensive transition in future.<sup>496,497</sup> International evidence shows strategies for adapting to and mitigating climate change provide multiple co-benefits (Figure 34).<sup>495,498</sup>

Unlike abstract emissions targets or distant ecological concerns, tangible health outcomes from climate mitigation offer immediate, compelling, and widely shared benefits while simultaneously reducing the health risks of climate change.<sup>498</sup>

Thinking carefully about how we plan our cities and towns and build our homes is an example of action critical to our health and wellbeing. This also has long-term consequences. Health co-benefits of climate mitigation approaches such as improved urban design and active transport include increased access to physical activity, reduced urban air pollution,<sup>499,500</sup> reductions in excess body weight and type 2 diabetes, heart disease, road traffic accidents, cancer and respiratory disease, and improved mental health and wellbeing.<sup>269</sup> Active transport initiatives in Aotearoa New Zealand, alongside well-designed urban infrastructure, have been shown to have significant positive effects on physical activity and mental wellbeing, and on household savings through lower car use.<sup>501,502</sup>

...Perhaps if climate action works, I might live in a greener city with clean energy, walking past urban gardens... [Rangatahi, The HIVE]

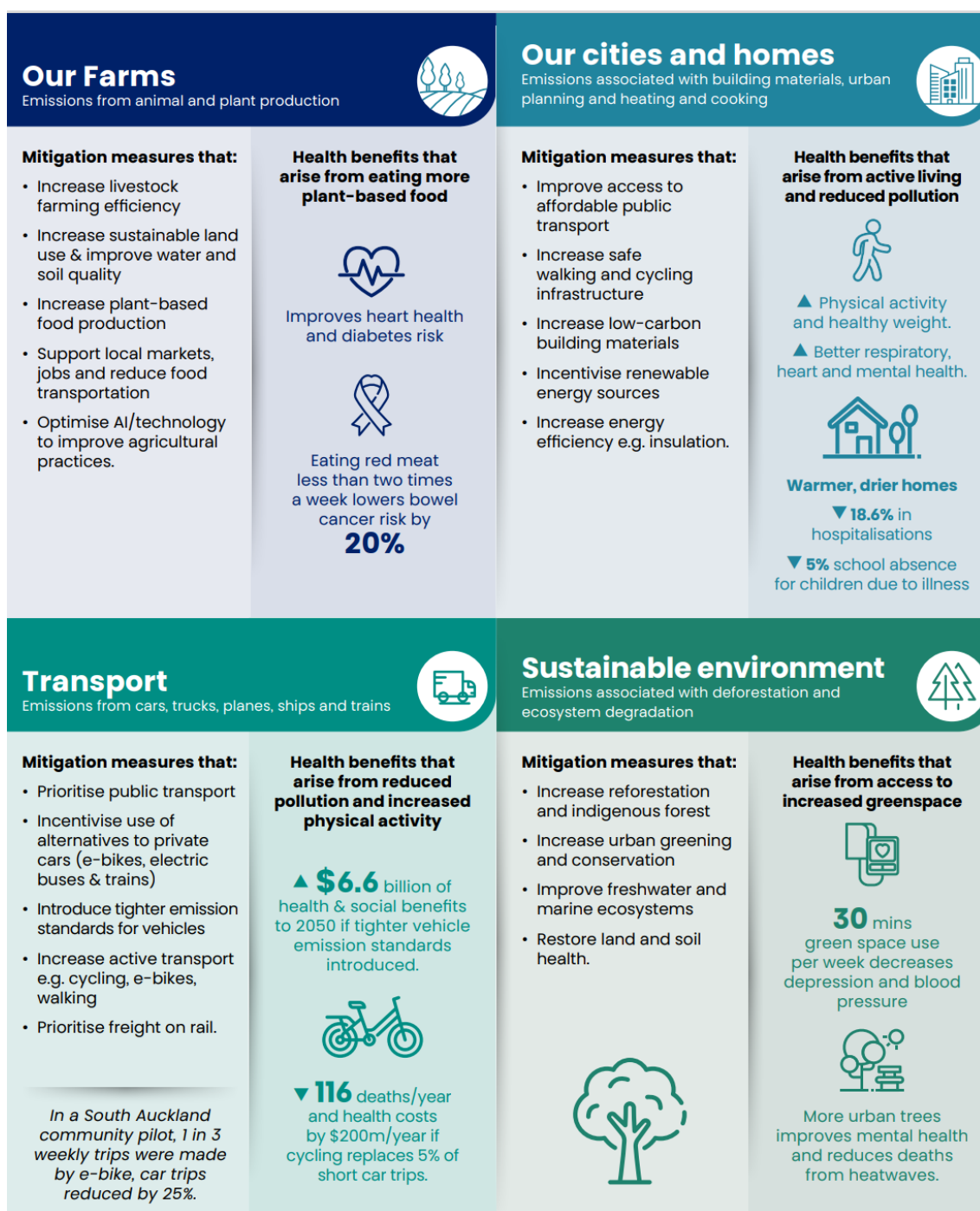
Some interventions are low cost to implement with a high return on investment. For example, improving car emission standards in Aotearoa New Zealand to European standards has estimated benefits between 35 and 48 times higher than the estimated cost of the policy. Social benefits due to the reduced health effects of air pollution would range from \$8,342 million to \$1,076 million (in 2019 NZ\$ as net present value).<sup>500</sup>

Using AI tools with the capacity for analysing large datasets and models has the potential to assist in more rapid design, planning and real-time responses in urban design, and in the energy and agricultural sectors. It is important that these changes are made with, and not to, communities, and that any unintended impacts and outcomes are monitored to ensure the changes are not disproportionately benefiting or disadvantaging certain groups.

There are also major economic and investment opportunities associated with climate change mitigation.<sup>513</sup> Depending on the mix of policy options adopted, potential co-benefits from emissions reduction and accelerating the transition to clean energy include:

- Increased productivity (as renewable electricity is more efficient and cheaper than fossil fuels).
- Greater energy security and independence.
- Opportunities for innovation to research and develop low emissions solutions, especially in food production.
- Increased resilience – for example through land-use changes that reduce erosion, or by designing electricity and urban networks for emissions reduction.

Figure 34. Health co-benefits of climate mitigation measures by sector in Aotearoa New Zealand



Source: Adapted from "Multiple benefits of climate mitigation measures" Melbourne Climate Futures, 2025.<sup>503</sup>

Infographic references 255,426,500,504-512



## Utilise positive economic levers

Positive economic levers to change behaviours have proved very successful in Aotearoa New Zealand and elsewhere.<sup>237,422</sup> They include giving people a wider range of choices and incentives to encourage them to shift to clean transport and more sustainable farming measures. These measures include:

- electrifying the car fleet
- public-sharing e-bikes and scooters<sup>506</sup>
- better, cheaper and more accessible public transport
- environmental standards and product traceability.<sup>302,513</sup>

Producers and investors will respond to a changing market when there is a high degree of certainty about the policy commitments. That commitment spurs innovation, competition and investment in the whole supply chain. This is because businesses understand the policy signal, have certainty in travel direction, and can identify market opportunities.<sup>513</sup>

The public sector is a large and powerful 'customer'.<sup>7</sup> It can use this status to give its suppliers a positive incentive when they take actions that mitigate climate change. Examples include using construction contracts that meet climate-resilient standards for government buildings; and buying healthy locally grown food for public institutions (such as hospitals and schools).<sup>514</sup> This can contribute to better health outcomes, and local economic growth and jobs, while also reducing carbon emissions.

We need to identify similar levers to incentivise change in other systems that influence health, such as shifting the food system to produce more plant-based foods and high-value dairy products. Learnings from global examples such as Origin Green in Ireland, and from local research, development and innovation could extend existing programmes (such as the voluntary New Zealand Farm Assured Programmes<sup>515</sup>) to the whole food system.

### Origin Green: Ireland's food and drink sustainability programme

Origin Green is the world's only national food and drink sustainability programme. It unites the government, private sector and full supply chain – from farmers to food producers, through to food services and retailers.

Origin Green enables the food and drink industry to set and achieve measurable targets that respect the environment and serve local communities more effectively. Over 90% of Ireland's food and drink exports are now produced by Origin Green members.<sup>516</sup>

Activities that promote healthy and affordable food in communities can also help us mitigate and adapt to climate change. Community food initiatives (such as māra kai, community gardens and regenerative planting) revitalise cultural knowledge about food production and improve social cohesion and physical and mental health outcomes – while also reducing carbon emissions.<sup>514</sup> Reducing and recycling food waste reduces emissions and improves communities' food security. When whānau have greater food security and access to healthy foods, they can maintain a healthy body weight and have better oral health. Ensuring children have enough to eat, have good hearing and oral health improves their education outcomes. This will have a long-term impact on their employment and income opportunities.<sup>517</sup>

#### The PHAC recommends that the government:

**Ensure that a full assessment of health and social co-benefits of climate mitigation choices** are incorporated in government decision-making and resourcing of climate measures.

**Promote 'win win' solutions**, working intersectorally with regional and local councils and communities.

**Utilise positive economic levers** more effectively to promote behaviour change and health co-benefits.

**Utilise the strength of the public sector role in procurement and contracting** to promote climate mitigation outcomes and wellbeing co-benefits.

## AI and the digital environment

AI is rapidly changing, and in uncertain ways. There is a high risk that societal changes resulting from AI will reinforce existing inequities.<sup>362</sup> Given this, the speed of change, and uncertainties, here we focus on actions to address some of the potential challenges to wellbeing.

### Government has a key oversight role

The government has a key role to provide and oversee frameworks that enable us to take up the benefits of technological change, protect us against risks, and steer AI and the digital environment towards equity.<sup>371,373</sup> Government and private-sector investments in AI need to recognise the biases in data that AI tools use, particularly when those tools use data from other countries and apply them in Aotearoa New Zealand. When AI tools (such as police facial recognition tools) use existing data and algorithms, they entrench bias, which increases people's mistrust in government services.

**Rubbish in, rubbish out- data quality is critical. Often data is not gathered from the community it is supposed to serve...is biased, and there is no accountability (unlike having a real doctor, for example). This is important if it is a life and death matter such as in health care.**

Given that the quality of data has a major impact on the output of AI algorithms, it is crucial to improve the quality of ethnicity data held by the health sector and other government agencies.<sup>518</sup>

AI sovereignty refers to a nation's capability to develop, manage and use AI in ways that align with its own values, regulations and interests. AI sovereignty is increasingly recognised as important, and not only for assuring national security and defence.<sup>519, 520</sup> Reducing dependence on external AI technology, enhancing our global competitiveness, and fostering innovation and new models, can create high value jobs and retain local talent and expertise.

There are strong ethical arguments for AI sovereignty, for example, in development of public service large language models (LLMs). There is also a strong argument for AI sovereignty related to Te Tiriti o Waitangi obligations. It is a prerequisite that Māori govern and lead how Māori data is used by AI tools. It is therefore a priority to invest in developing AI tools that support innovative economic and social development specific to iwi and hapū.<sup>377,378</sup>

Aotearoa New Zealand has infrastructure capacity, innovative companies and a lot of quality data. Given this, we should invest in creating AI tools that are specific to Aotearoa New Zealand, particularly in critical areas like environmental management, primary production and health care. Reducing our dependence on foreign AI technology, fostering innovation and new models, and becoming more globally competitive would create high-value jobs in Aotearoa New Zealand and retain local talent.<sup>18,356,359</sup>

### **Support people whose jobs are affected by AI**

Where rapid job losses related to AI are likely to, or do, occur, investment by government and industry in flexible regional and local programmes will be required, to allow people to retrain, upskill and adapt to change. Other countries in our region are already directing young people into short (3-12 months) vocational courses on AI, to provide them with job opportunities in the technology sector and to support businesses transform using AI.<sup>521</sup>

The government must also strengthen the social safety net for those who lose their jobs. If AI reduces the labour share of income, we may need to use other mechanisms to raise tax revenue through capital and introduce a universal basic income approach.<sup>359</sup>

### **Plan for the extra energy that AI needs**

When the government and private sector are planning investments in clean energy, they must account for the extra energy requirements of AI. AI depends on high-performance compute and large data centres, which escalates its demand for energy and water.

Given Aotearoa New Zealand has the capacity for developing more renewable energy, it has a potential advantage in the global AI market - if there is sufficient investment in new renewable energy sources. AI also has the potential to create an intelligent coordination layer across the generation, transmission, and use of energy, and support a more resilient and adaptive energy system.<sup>522</sup>

### Use AI to support 'win win' solutions

AI tools with the capacity for analysing large datasets and models have the potential to assist in more rapid design, planning and real-time responses in urban and environmental planning, and in the energy and agricultural sectors. It is important that these changes are made with, and not to, communities, and in line with Māori data sovereignty. It is also important that any unintended impacts and outcomes are monitored to ensure the changes are not disproportionately benefiting or disadvantaging particular groups.

#### The PHAC recommends that the government:

**Develop and oversee frameworks that enable the benefits of AI and technological change,** protect us against risks, and steer AI and the digital environment towards equity.

**Support investment in creating AI tools that are specific to Aotearoa New Zealand,** particularly in critical areas like environmental management, primary production and health care.

**Invest in flexible regional and local programmes** that allow people to retrain, upskill and adapt to change.

**Plan and invest in clean renewable energy sources** to support the expansion of AI.

## Actions for the health system

Finally, we propose key actions for the health system. Although the focus of this report is on the determinants of health outside the health care system, we recognise the important contribution it makes to our health and wellbeing. The health system also has internal and external influence, and levers that it can use to address the 'megatrends' and challenges set out in this report. These recommendations align with the three themes above.

#### The PHAC recommends to the Minister of Health that:

**The health system must retain health equity as a key goal and monitor progress towards achieving it.** This includes equitable access to high quality, culturally safe health care, preventive services and treatment; equitable quality of care received, and equitable health outcomes.

**The health system can invest more in making good-quality preventative and acute care accessible at the right time.** The health system is an important safety net. It enables people to get well and stay well, and it reduces disability. Of all working-age benefit recipients, 53% receive a benefit because they have a health condition or disability, or care for someone with a health condition or disability. If people cannot access effective health care or preventive services at the right time, their ill health or disability can lead to greater disadvantage.

**The health system must continue to acknowledge, monitor and address racism and discrimination.** An accessible and non-discriminatory health system is core to realising a healthy future for us all. Patients and communities need to receive care that is culturally safe. This is the responsibility of all health leaders and organisations. The health system must continue to invest in appropriate care approaches and models that meet the differing needs of all individuals and whānau in our society, including hauora Māori and Pacific peoples' services.

**The health system must continue to work and reflect on how best to deliver on the potential of Te Tiriti o Waitangi to improve hauora Māori.** The health system has obligations to Māori through Te Tiriti o Waitangi, recognising tino rangatiratanga and Māori aspirations for health and wellbeing. Importantly, the health system needs to commit to developing long-term, healthy relationships of trust and confidence with Māori communities, hapū and iwi to allow this to flourish.

**The health system can contribute to measures addressing the climate crisis,** such as electrifying the transport fleet and incentivising staff and patients to use public transport. Health care services must be resilient and able to continue to support communities, for example during and after severe weather events.

**To benefit from the potential AI offers, the health system needs to invest wisely in AI tools and in building staff capacity to optimise its use.** It needs to ensure AI is used safely in health care, research and disease surveillance. Development of telehealth and AI-supported services needs to be planned carefully, with robust ethical frameworks, and monitored to ensure that people have equitable access to, and outcomes from, these services.

**Health has an important role in supporting implementation of evidence-based intersectoral policies and programmes with communities,** and in evaluating the impacts on health equity and wellbeing outcomes. Intersectoral work on Housing First and the Healthy Homes Initiative, the Future Streets | Te Ara Mua project and other urban design projects, Whānau Ora, and Ka Ora, Ka Ako<sup>523</sup> ("Healthy School Lunches" programme) are examples of this. These programmes need sustained resourcing and be scaled up to meet need.

**The health system is a major employer and influences the working conditions and incomes of thousands of people.** It must model the equitable and inclusive approaches PHAC is advocating to the rest of government and the private sector. Health workers must be paid equitably and work in safe conditions. It is critical that the health workforce reflect the diverse communities it serves.

**Public Health services (such as the New Zealand Public Health Service, Hāpai Te Hauora, and a range of Māori and Pacific health and wellbeing services) work to improve the health of our communities and prevent disease.** These services work at national and local levels with communities across sectors on housing, urban design and transport, food systems, illicit drug use, tobacco and alcohol abuse, air and water quality and other issues. This ongoing work on determinants of health is critical to reducing pressure on the health care system and needs greater investment and sustained political support.

# Appendix 1. Methods and evidence

## 1 Literature and evidence reviews

We carried out several literature searches with the support of Ministry of Health librarians. The search strategies were focused on:

- Policy and programmes to improve equity in health outcomes
- Health, equity, and climate change in Aotearoa New Zealand
- The mechanisms (physiological, biological and epigenetic) for how determinants influence physical and mental health
- The commercial determinants of health (and relationship to alcohol harm, excess body weight and other health damaging factors)
- Climate change and health
- AI and predicted effects in Aotearoa New Zealand.

We particularly focused on research and evaluations carried out in Aotearoa New Zealand, including those available in the grey literature, and on the period 2010-2025. We reviewed systematic reviews or 'reviews of reviews' of the international literature in these fields. We also accessed key literature recommended by PHAC committee members and public health experts.

## 2 Key informant interviews

The PHAC aimed to inform this report with learnings from a range of experienced community, iwi and public service leaders. These 'key informants' were identified through nomination by PHAC members, by 'snowballing' (i.e. referral by other informants) and through identification of lead academics and experts involved in research on key determinants of health, such as housing and transport. We aimed to interview people with knowledge from across a range of areas, from economics to housing, AI and the climate crisis, disability and transport. We also wanted to hear from people with a range of expertise and experience, from research, public service, to programme implementation and 'practice evidence.' We based the semi-structured interviews around four main themes/questions. These were:

- the informant's own concepts of health and understandings of the contribution of determinants of health to wellbeing;
- their assessment of progress made in addressing inequities in determinants of health and in health outcomes since 2000;
- the key challenges they saw looking out to 2040; and

- key actions or solutions they proposed, based on their experience, 'practice evidence' or other sources e.g. published research.

The interviews were carried out between December 2024-June 2025, in person or online. The majority of informants were interviewed by Dr Clair Mills (PHAC secretariat), usually accompanied by another secretariat colleague. Interviews were recorded and summary notes taken. Key themes were identified and collated, along with relevant quotes.

Interviewee	Organisation
Tevita Funaki	CEO, The Fono
Huhana Hickey	Lawyer and disability advocate
Hikitia Ropata	Executive Chair of the Āti Awa Toa Hauora Iwi Māori Partnership Board.
Bronwyn Petrie	Healthy Communities, Te Whatu Ora
Eric Crampton	Economist, New Zealand Initiative
Aimee Hadrup	Auckland City Council Southern Initiative
Monique Kelly	WAO (general manager), Wanaka
Kaeden Watts	Public Health Agency, Ministry of Health
Helen Leahy	Pou Ārahi, Ngā Waihua o Paerangi (Ngāti Rangi)
Helmut Modlik	CEO   Tumu Whakarae, Te Rūnanga o Toa Rangatira
Esther Woodbury	Disability researcher and advocate
Mary Roberts & Jacinta Fa'alili-Fidow	Moana Connect
Terryann (TC) Clark	Cure Kids Chair in Child and Adolescent Mental Health, University of Auckland
Belinda Borrell	Researcher, Massey University
Ganesh Nana	Economist, former CEO of the Productivity Commission
Geoff Short	Ministry of Health (acting DDG; previously at TPK, involved in development of Whānau Ora and Nga Tini Whetū)
Philippa Howden Chapman	Professor, School of Public Health, University of Otago and director of the Kainga Oranga   Housing and Health Research Programme
Alex MacMillan	Professor in Environmental Health, University of Otago
Amanda Hinkley Sally Mackenzie, Mary Fisher	Whaikaha   Ministry of Disabled People
Jonathon Boston	Professor of Public Policy, Victoria University
Louise Signal	Professor and Director of the Health Promotion and Policy Unit, University of Otago



Interviewee	Organisation
Caroline Shaw	Associate Professor, University of Otago
Gael Surgenor	Community and Social Innovation
Liam Williams, Sandra Laws	MBIE (AI strategy development)
Anna Stevenson	Public Health physician, Canterbury Public Health
Anna Matheson	Associate Professor, Victoria University; lead evaluator of Healthy Families
Hauora Māori Advisory Committee	Chair: Parekawhia McLean and members
Ian Lambie	Chief Science Advisor, Ministry of Justice
Phil Walker	Senior policy advisor, Ministry of Justice
Ann Sears	Public Health physician, Te Whatu Ora
Peter Lucas Jones	CEO, Te Hiku media; Chair of Te Aupōuri iwi
Hinemoa Elder	Deputy chair of Te Aupōuri iwi.
Tanya Maloney, Jean MacDonald	Oranga Tamariki
Fatumatah Bah	Ministry of Health
Bill English	Board member, Impact Lab Ltd and Manawanui Support Ltd; former Cabinet Minister and Prime Minister
Carol Berghan, Tui Te Paa, Lisa McNab	CEO and leadership team at Te Hiku Development Trust, Kaitia
Aumea Herman	Chief Clinical Advisor Pacific Health, Ministry of Health
Rhys Jones	Te Kupenga Hauora Māori, Auckland University and member, Ora Taiao
Karen Lavin, Grant Blackwell	Climate Commission
Ashley Bloomfield	CEO, ESR and University of Auckland
Aphra Green	Deputy Chief Executive, System Performance & Investment Advice. Social Investment Agency
Paul Henderson	Researcher, Maxim Institute
Shelley Katae	CEO Tāmaki Regeneration Company

### 3 Engagement with The Hive

The HIVE functioned from 2019 to June 2025 as a collaboration between rangatahi (young people), the Ministry of Youth Development and Curative (a creative change agency), to support youth voice and perspectives into government services. The PHAC secretariat first gathered insights from young people from a broad range of existing sources (see below) and then tasked The HIVE to sense check the relevance of the existing information. We asked The HIVE to gather further insights with a range of rangatahi from across the motu, through interviews and social media engagement.

Members of The Hive conducted peer interviews with 28 rangatahi from across Aotearoa New Zealand in May 2025. All interviewees were between the ages of 17–25 years. Participants included Māori, Pacific, Pākehā, Asian, Middle Eastern, African, rainbow, gender diverse, urban and rural young people. The findings of these interviews have validated and added to existing youth engagement information on what young people perceive as the most significant determinants of their health and wellbeing. Financial security was identified in these interviews as the most significant influence on young people's health and wellbeing. This and other findings are summarised into a report (HIVE insights- Determinants of Health). We have used quotes in the PHAC report (in green font) from diverse rangatahi interviewed as part of this engagement.

### 4 Review of data and community 'voice' from prior community engagement

A diverse range of workshops, hui and talanoa have been conducted in recent years to inform the development of health sector policies and strategies. These include engagements with children and young people, whānau Māori, Pacific communities, disabled communities, and other ethnic communities. The insights gathered reflect the voices and experiences of these groups. PHAC decided not to repeat further community consultation specifically for this report, but to draw on the findings and richness of these existing sources. We reviewed the summaries and had access to some of the raw data. We focused on participants' understandings of health, the determinants of health and what they viewed as important for the future.

#### Children and Young People

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- Van Paauwe, P. Cernis, A. Hall, K. Royal, E. Goodwin, E. McArdle, A. 2023. Voices for Change | Diverse lived experience perspectives and opportunities for health equity. Curative & Connect+co for Manatū Hauora | Ministry of Health.
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# Appendix 2. Case studies

## 1 Preventing diabetes

To illustrate how we can more effectively prevent diabetes, one of Aotearoa New Zealand's biggest health challenges, we identify 'win-win' solutions: interventions across multiple sectors with health and wellbeing co-benefits. Implementation strategies start with addressing factors in the bedrock and soil.

### The challenge

Unhealthy diet and excess body weight are the biggest preventable health risk factors for Type 2 diabetes. One in three adults, nearly 1.5 million of us, were classified as obese (with a BMI of 30 or over) in 2023/24, and rates in children are also increasing.<sup>76</sup> The more than doubling of excess body weight over only three decades in Aotearoa New Zealand (which is mirrored globally) does not reflect genetic changes, a lack of moral fibre, or individual laziness.<sup>524</sup> Rather, these changes parallel the introduction of highly processed foods and sophisticated marketing strategies, along with the impacts of colonisation and a food production system that have removed people from their land and traditional food sources.<sup>492,525-527</sup> At the same time, one in four households are sometimes or often struggling to put food on the table<sup>179</sup> and healthy food is the least affordable, despite our country producing enough food to feed 40 million people.<sup>514</sup>

### The cost to health, wellbeing, and society

Excess body weight accounts for 17.5% of premature death and disability, and in 2021 drove \$2 billion of direct health system costs each year, or 8% of total health expenditure.<sup>528</sup> It leads to an estimated total cost to society (through things like loss of productive workforce) of \$4-9 billion.<sup>528</sup>

"The future economic liability of diabetes in our country should be a major concern for all of Cabinet, not just the Minister of Health."

[Sir Bill English, former Minister of Finance]

It is predicted there will be a 90% increase in people with diabetes, to more than half a million of us by 2044. Māori, Pacific peoples, and people living in the most deprived neighbourhoods are already disproportionately affected.<sup>2,76</sup> The losses to whānau through ill health, disability and early death will be significant if the current trajectory is not changed - but there will also be enormous associated economic losses and social costs borne by all of us.

## Progress so far...

No country has yet successfully reversed their “obesity epidemic.”<sup>529</sup> However there have been areas of improvement internationally and locally that we can learn from and build on. No one policy or intervention will solve the issue, and solutions must be developed and co-designed with people in the most affected communities.<sup>530</sup>

## “Win-win” solutions

A layered combination of approaches is needed for diabetes prevention, aligning with Te Tiriti o Waitangi and recognising the unequal impacts, especially for Pacific peoples. We know that given the powerful commercial influences at play, this challenge cannot be resolved with individual and community-targeted programmes alone, although these are an important element.<sup>514,531</sup> Interventions start with the bedrock and soil, and can build off existing programmes, such as some of the ongoing Healthy Families New Zealand initiatives.<sup>532,533</sup>

## National settings – the bedrock and soil

- Governments can create the policy settings (e.g. for wages, taxes, food production, welfare and housing) to ensure that low-income households have sufficient disposable income to enable autonomy to make healthy food choices and afford a healthy diet, without relying on grants and food parcels.
- A national food and nutrition strategy could drive and monitor implementation of the policies below.
- Regulatory and taxation levers are key mechanisms in responding to commercial interests that damage our health and wellbeing.<sup>534-536</sup> To note, the food and beverage industries are powerful lobbies with strong political connections, as documented recently in Australia.<sup>537,538</sup>
- Evidence-based, cost-effective “whole population” interventions include taxes on sugar-sweetened beverages (SSBs), as already introduced in over 130 jurisdictions globally, including three-quarters of Pacific nations and several US cities.<sup>539</sup> Taxes can also be applied to unhealthy ultra-processed foods. These taxes have varied designs, but have been shown to:
  - incentivise industry reformulation to reduce sugar levels in SSBs
  - reduce sugar intake
  - have positive effects on childhood and adult obesity
  - reduce dental caries; and
  - support the health budget through ‘earmarked’ taxes.<sup>443,539</sup>

SSB taxes have had greatest benefits for young people and people on low-incomes.<sup>517</sup>

- Other levers include:
  - Mandatory standards for reducing sodium and added sugar in key food categories of processed and ultra-processed foods.
  - Regulating online advertising, sales and sponsorship, especially that aimed at children and young people, and food labelling. These are low cost, effective approaches.<sup>535</sup>
  - Mandatory nutrition policy for schools and ECE services that ensures foods and drinks provided or sold are healthy and sustainable and that sufficient resources, support and training are allocated for implementation.
  - At least doubling the coverage and funding of Ka Ora, Ka Ako in schools and ECEs.

## **Regional and local settings**

- Support increased physical activity at the local and regional level, by expanding the range of choices people have. For example, shaping urban design through:
  - Walking paths and cycle lanes<sup>540,541</sup>
  - Public rental e-bicycles, subsidised e-bikes or other active modes of transport<sup>501,508,511</sup>
  - Enhancing accessible public transport.<sup>540</sup>

These interventions, particularly focused in communities with high rates of diabetes, have already demonstrated co-benefits in local settings in Aotearoa New Zealand. These include health outcomes - increased physical activity, improved mental health, weight reduction and reduced illness related to a reduction in polluting emissions, and also household economic benefits.<sup>541-543</sup>

## **Community settings - supporting the tōtara root network**

- Support community-led, co-designed programmes that address food insecurity, food sovereignty, physical activity and broader wellbeing issues.<sup>386</sup> These include such examples as:
  - The West Auckland Kai Village kaupapa<sup>544</sup> - fostering relationships, sharing mātauranga Māori, with a collective approach to local food initiatives
  - The Food Hub Collective (formerly the Papatoetoe Food Hub) – a community-led enterprise, in which surplus food is rescued from being wasted and turned into good affordable food for the community, within a zero-waste approach.<sup>545</sup>
  - Kai Rotorua<sup>546</sup> – teaching and learning activities around planting, growing and harvesting and storing kumara and healthy kai, and other Māori-led initiatives, such as mārā kai and the Kai Atua project.<sup>547,548</sup>
  - Revitalising Pacific cultural knowledge systems of growing food, preserving food and adapting to climate change and severe weather events. Pacific churches, as “socio-cultural villages” may play an important role in supporting this transformation.<sup>549</sup>

The overall impact of these multiple interventions at each level of our tōtara forest need to be monitored over time and by population groups, to ensure progress towards equity.

## 2 Housing, community design and health equity

### The importance of home

Home means a place of connectedness and relationships, of identity and security. For Māori, kāinga (or papakāinga) represent the anchoring of tangata to whenua and embody mana (ancestral authority) over surrounding land.<sup>550</sup> Kāinga are an expression of cultural identity and connection to the whenua.<sup>551</sup> The centrality of 'home' to families, for nurturing good relationships and unity are all important aspects of a good home common to Pacific peoples,<sup>492,552</sup> and also for many non-Māori, non-Pacific peoples. Adequate housing is a human right.<sup>553</sup>

### Health and wellbeing benefits

The positive benefits for health and wellbeing of warm, dry and safe homes, and the importance of appropriate design to meet the intergenerational and cultural needs of whānau have been well researched in Aotearoa New Zealand. Insulated, well-designed housing reduces energy costs and functional crowding, and related illnesses from damp and mouldy housing, such as asthma, respiratory infections, rheumatic fever and chronic conditions.<sup>192,252,256,258,259,423,424</sup>

Housing security - that is, secure tenancy or home ownership - is also critical and has multiple impacts on wellbeing of whānau and children. It improves attendance and continuity of education, community connections, household economy, access to employment and a sense of security and safety. Insecure tenancy of housing is associated with increased likelihood of potentially avoidable hospitalisations in young children.<sup>424</sup>

### What is the challenge?

Housing affordability is a major issue, especially for families on lower than median incomes.<sup>260</sup> In December 2024, the median house price was 7.3 times the median annual household income (down from 10.1 times at the market peak in late 2021), and rents were at a record 28% share of income.<sup>554</sup> As of March 2025, there were over 19,000 people on the public housing register, with nearly all having high priority needs; it is known that this considerably under-estimates housing need. Nearly half were Māori whānau and 35% Pacific peoples.<sup>555</sup>



Nearly one in five young people in the Growing Up in New Zealand (GUINZ) study have been experiencing the most unstable tenancies or worsening residential stability since birth. These trajectories of experience are associated with material hardship, living in public housing or private rentals, and at worst, homelessness.<sup>556</sup> Many children in Aotearoa New Zealand still live in inadequately heated homes (one in five in the GUINZ study).<sup>556</sup> Homelessness and severe housing deprivation persist at high levels and are associated with very poor health outcomes.<sup>427</sup>

### **“Win-win” solutions**

A range of housing models and investment is needed to achieve quality affordable housing for all. Experience indicates that funding of housing policy packages is particularly effective when coordinated with community groups, and when there is fair enforcement of housing standards.<sup>557</sup> There is a need to increase the capacity of iwi, social housing providers and Kāinga Ora as well as negotiating with private developers and investors to assure more affordable housing. Building rural and urban homes which meet the needs of intergenerational whānau, and accessible housing for people with disabilities should be prioritised.

### **Climate mitigation and multiple social benefits**

Developing community and associated infrastructure (including schools and health services) alongside new or retrofitted homes is essential. Building climate-resilient, affordable homes, with urban densification and development of public transport, alongside public green and blue spaces, has multiple benefits - reducing our carbon emissions, providing employment and supporting local economies, and improving health, educational and social outcomes, including social cohesion.<sup>558</sup>

As homes and communities built today will still be homes for our mokopuna in 100 years, what we do now is critical.<sup>559</sup>

Improving the Building Code, phasing out fossil fuels in commercial buildings and homes, and energy labelling of commercial buildings and homes would, if introduced from 2025, reduce cumulative emissions by 6,100kt by 2030, helping deliver almost a third of the required savings the Climate Change Commission have said are needed. These approaches are widely supported throughout the building industry.<sup>559</sup>

### **Social housing**

The role of government in social rental housing has fluctuated in Aotearoa New Zealand over decades but is relatively small compared with OECD countries like the UK, the Netherlands and France, and below the OECD average of 7% of total housing stock.<sup>560</sup> Iwi and hapū-led housing projects are playing an important, if still under-resourced, role. The Waitangi Tribunal’s Wai 2750 Kaupapa inquiry into Māori Housing Policy and Services describes the impact of years of insufficient responses to Māori housing issues that have had an intergenerational impact on Māori communities, continuing to be felt today.<sup>561</sup>

## Scaling up things that work

Below we identify existing housing initiatives that could be scaled up to meet current and future housing needs.

- **Iwi and Māori-led housing initiatives** within the MAIHI Ka Ora – National Māori Housing strategy (2022).<sup>562</sup> The 2022 Whai Kāinga Whai Oranga funding pool of \$731m over four years was the biggest investment in Māori housing and infrastructure in decades, but it remains inadequate in the face of the need and the decades of neglect - and requires long-term cross-party political commitment and scale-up.<sup>563</sup>
  - Toitū Tairāwhiti, a collaborative of four iwi across Tairāwhiti and eastern Bay of Plenty (Ngāti Porou, Rongowhakaata, Ngai Tamanuhiri and Te Aitanga a Mahaki) has developed a partnership with Te Tūāpapa Kura Kāinga (Ministry of Housing and Urban Development). Having already built 51 new homes for whānau in the region, further investment is supporting 150 more whānau in their rohe into new homes.<sup>564</sup> Similar agreements are being implemented with others such as Te Pouahi o Taitokerau (Northland hapū and iwi)<sup>565</sup> and Ka Uruora (a collective iwi charitable trust based in Taranaki).<sup>566</sup>
- **Fale mo Aiga – Pacific Housing Strategy 2030** plans home ownership for 500-700 Pacific peoples' households, by 2030. A ten-fold scale up, as proposed by the Tamaiti ole Moana 2033 report - with the building of 5000 more suitable multigenerational homes for Pacific families through a range of approaches (including Kāinga Ora and community housing provider homes, and underwriting residential development) is a more realistic response to the housing needs of Pacific communities.<sup>492</sup>
- **Scaling up the Warmer Kiwi Homes programme and Healthy Homes Initiative** to target 30,000 homes of Pacific families with children for insulation and ventilation upgrades.
- **Housing First** Originating in Finland in 2007 and introduced in Aotearoa in 2017, Housing First recognises that it is easier for people to deal with complex issues, such as physical ill-health, mental health and addiction needs, if they have a stable place to live. It is targeted towards people who have complex needs and require intensive ongoing support services. Local research shows that after five years of having a home, there were significantly improved outcomes for people in the programme across mental and physical health (measured as reduced hospitalisations, outpatient visits and pharmaceutical use), but also in income levels (+38%) and significantly reduced police offences and criminal charges.<sup>255</sup> The 'Housing First' approach could be adapted and scaled up to ensure, for example, that all low income whānau with children (or expecting them) can access a home and 'wrap around' support.

- **Increase the proportion of affordable social housing and Kāinga Ora state-owned units of total housing stock to 7% by 2040.**<sup>567</sup>
  - An increase of social housing to 7% of total stock by 2040 would mean building an additional 3,600+ units each year (a similar rate to that in 2023-2024), to reach at least 140,000 dwellings by 2040, requiring a relative increase in building activity and budget required to achieve this. This compares with the funding of only 1500 new social houses announced in the 2024 Budget.
  - As of April 2025, 84% of the over 86,400 social rental housing available was managed by Kāinga Ora, with more than 9800 new Kāinga Ora homes built between June 2023 and April 2025.<sup>425</sup> Community Housing Providers (CHPs) provided the remainder, ranging from small charitable trusts and iwi to Councils, with 1670 additional builds in the same period.
  - Providing lower-cost debt facilities to community housing providers (CHPs) via the Community Housing Funding Agency is useful, but CHPs alone are unable to build to the scale required, and leveraging up the capacity of Kāinga Ora is needed. With the current reduction in total new-builds (3000 fewer per month than in August 2023), the waiting list for social housing will continue at 20,000 to 25,000 households and may even increase further if immigration settings exacerbate existing housing shortages.<sup>567</sup>
- **Replicate alternative Crown approaches to community housing, such as the Tāmaki Regeneration Programme.**<sup>455</sup>

**The Tāmaki Regeneration Programme** includes three east Auckland suburbs close to central Auckland - Glen Innes, Panmure, and Point England. It is home to over 20,000 people, many for several generations, with over one-third of residents aged under 25 years. Sixty percent of residents identify as Māori and/or Pacific peoples. Mana whenua of Tāmaki include Ngāti Pāoa, Ngāi Tai ki Tāmaki and Ngāti Whātua Ōrākei. Sixty percent of housing in Tāmaki is social housing, with the first state houses built there in the 1930s, expanding with rapid urban growth after World War Two. The economic reforms of the 1990s had major impacts on the communities in Tāmaki, resulting in very high unemployment, declining household incomes, alcohol and drug issues, and community safety concerns.

Evolving from the 2007 “Tamaki Transformation” project (which was widely distrusted and perceived by the communities as ‘gentrification’ when selling off of state housing was proposed), the Tāmaki Regeneration Company (TRC) was created as a Schedule 4A Company in 2013 under the Public Finance Act (ensuring broader social and regeneration outcomes beyond simple commercial return). It is jointly owned by the Government and Auckland Council. After substantial community and mana whenua engagement, TRC developed an outcomes framework with four key priorities:

- Social (supporting Tāmaki whānau to thrive)
- Housing (building homes and communities)
- Economic (helping the local economy to thrive); and
- Placemaking (supporting local cultural identity and sense of belonging).

A key learning from this engagement was that people did not want just “a warm, dry home” ...they said “we want to own our own house just like every other whānau in Aotearoa. And we want a quality job, good education for our kids and health.” [TRC]

In addition to the home building programme, TRC supports a shared home ownership programme, Innovation Hub and Jobs & Skills Hub, and partners with a range of community organisations to support social outcomes.

### **What has worked?**

As of January 2025, 1,559 homes have been delivered, including 28 transitional homes, 420 public homes, 434 affordable homes (including 87 in the shared home ownership programme, 77% of whom are Māori and/or Pacific whānau) and 677 ‘market’ homes. In addition, over two hundred whānau have moved along the housing continuum into home ownership of an affordable home, 18% of these from public housing.

Other social outcomes have been positive. Over 1,458 local people have been supported into jobs since 2014, with 90% staying in jobs. In 2025, the Hub has placed 143 local people into employment, with 76% of placements Māori and/or Pacific peoples, as of June. TRC has also partnered with local iwi, community groups and agencies to support local innovators and entrepreneurs through the Innovation Hub, built the Kererū Kidney Centre to help make treatment more accessible for Tāmaki residents requiring dialysis, and supported the whānau-by-whānau programme (supporting whānau with immediate needs).

### **Success factors and enablers**

The “Tāmaki commitment” - where TRC has committed to re-housing all whānau that want to stay in the area - has been a key to success. Building close relationships with mana whenua and community leaders, supporting community priorities, and hiring local people have been other critical factors. Important enablers include having a permissive framework from government, with the mandate to look at the whole housing system and its drivers rather than single products; owning assets locally and having the legal powers and structures to support delivery of objectives.

### **The future...**

The housing pipeline takes 3-5 years to completed build, so long-term planning and budgets are needed. In the 2023 Budget Bid for 2024-2028, \$870m was approved to deliver 742 houses up to 2028 and enable 468 houses after that period. TRC will build 742 new homes (a net 167 new homes), with a mix of 1-5 bedrooms (one-third will have 4-5 bedrooms). There will be 426 new social homes, 251 shared home ownership homes and 65 affordable rental homes.

TRC will submit resource consents for 1,673 homes and have the capacity and processes in place to support the delivery of 350-500 new homes every year from FY28. To note, the ability to deliver at this pace will be dependent on funding for both infrastructure and housing, and alignment between Tāmaki’s infrastructure programme and the TRC build programme.

### Learnings...

Some projects that deliver on community aspirations and government priorities cannot easily be monetised by economic or cost-benefit models. TRC staff note that key learnings include:

- Build relationships with both mana whenua and wider community and establish desired outcomes with the community from the start.
- Focus on what you can do best, rather than going too broad; partner with community and other providers to deliver in areas where they are the experts, as this is more efficient and delivers greater outcomes on the ground.
- Be upfront and manage expectations.
- Understand early the associated in-ground infrastructure needs.
- A separate governance structure (with community representation) allows you to have strategic focus on the specific regeneration area, and to make the best decisions for that community – without the distraction of wider organisations or other developments.

# Appendix 3. A timeline

## Key dates and reports: determinants of health and health equity

Key reports are referenced in Yao et al<sup>568</sup>

<b>1840's</b>	Chadwick E. Report on the Sanitary Condition of the Labouring Population of Great Britain (1842); Engels F. The condition of the working class in England (1845); Durkheim, E. (1897). Le suicide; Virchow R. Typhus epidemic and "social medicine" (1848); <sup>569</sup> Du Bois WEB & Eaton I. The Philadelphia Negro: a social study.
<b>1946</b>	WHO Constitution and definition of health, including social wellbeing.
<b>1948</b>	United Nations (UN) General Assembly. Universal Declaration of Human Rights.
<b>1967</b>	The UK Whitehall Study of civil servants demonstrated a steep gradient based on social status. Compared with the highest grade (administrators), men in the lowest grade had 3 times the mortality rate from coronary heart disease, from a range of other causes, and from all causes. <sup>570</sup>
<b>1973</b>	Andersen R & Newman JF. Societal and individual determinants of medical care utilization in the United States.
<b>1978</b>	Development of primary health care, including a comprehensive intersectoral approach and the Alma Ata Declaration.
<b>1980</b>	Black Report (UK): the United Kingdom Department of Health and Social Security published the Report of the Working Group on Inequalities in Health, also known as the Black Report (after chairman Sir Douglas Black, President of the Royal College of Physicians). <sup>571</sup>
<b>1980</b>	Hauora: Māori Standards of Health by Eru Pomare and colleagues, with subsequent editions in 1988, 1985 and 2007. <sup>572</sup>
<b>1985-1988</b>	The Whitehall II study (UK) investigated the "...degree and causes of the social gradient in morbidity" and showed a similar inverse relationship between employment grade and health as that for mortality. <sup>573</sup>
<b>1998</b>	National Advisory Committee on Health and Disability (NHC) published <i>The Social, Cultural and Economic Determinants of Health in New Zealand: Action to Improve Health</i> . <sup>8</sup>
<b>1999</b>	Michael Marmot and Richard Wilkinson "Social Determinants of Health." <sup>88</sup>
<b>2000</b>	Berkman LF & Kawachi I. Social Epidemiology.
<b>2000</b>	Office of Disease Prevention and Health Promotion, US Department of Health and Human Services: Healthy People 2010. Outlined two overarching goals: to enhance life expectancy and the quality of life and to eliminate health disparities between different segments of the population.

<b>2000</b>	Jones, C. Levels of racism: a theoretic framework and a gardener's tale. <sup>111</sup>
<b>2000</b>	Reid et al. Disparities in health: common myths and uncommon truths. <sup>66</sup>
<b>2002</b>	Commission on Macroeconomics and Health (World Health Organization)
<b>2002</b>	PHAC published <i>The effect of environmental factors on the health of New Zealanders</i> , highlighting significant environmental issues linked to ill health and health inequalities, such as air and water quality, as well as emerging issues (at the time) like climate change and health in urban environments. <sup>50</sup>
<b>2002</b>	Ministry of Health. Reducing Inequalities in Health. <sup>52</sup>
<b>2003</b>	Decades of Disparity. Ajwani Blakely, Robson et al., examined ethnic mortality trends in New Zealand from 1980-1999. <sup>205</sup>
<b>2004</b>	The PHAC report, <i>A Way Forward: Public policy and the economic determinants of health</i> examined the relationship between socioeconomic status and health. It showed that the chances of enjoying good health and a long life reflect differences in socioeconomic position and ethnicity, and considered the role that public policy can play in reducing inequalities in health. <sup>51</sup>
<b>2005</b>	World Health Organization (WHO) Commission on Social Determinants of Health (CSDH).
<b>2006</b>	Wilkinson RG & Pickett KE. Income inequality and population health: a review and explanation of the evidence.
<b>2006</b>	Van Doorslaer E, et al. Inequalities in access to medical care by income in developed countries [OECD].
<b>2008</b>	Mackenbach JP et al. Socioeconomic inequalities in health in 22 European countries.
<b>2008</b>	Commission on Social Determinants of Health. Closing the Gap in a Generation: Health equity through Action on the Social Determinants of Health - Final report of the Commission on Social Determinants of Health. <sup>6</sup>
<b>2014</b>	Beeston C et al. Health Inequalities Policy Review for the Scottish Ministerial Task Force on Health Inequalities
<b>2017</b>	Saunders M, Barr B, McHale P, Hamelmann C. Key policies for addressing the social determinants of health and health inequities. (WHO Regional Office for Europe) <sup>395</sup>
<b>2022</b>	The Lancet Series: Racism, Xenophobia, Discrimination and Health. <sup>113</sup>
<b>2023</b>	The Lancet Series: Commercial Determinants of Health. <sup>305</sup>
<b>2023</b>	Waitangi Tribunal. Hauora: Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry. <sup>41</sup>
<b>2025</b>	World Health Organization. World Report on Social Determinants of Health Equity. <sup>7</sup>

# Appendix 4. Analysis of trends and indicators

In Aotearoa New Zealand there are important and persistent differences in access to the determinants of health and in health outcomes for different population groups. The aim of our analysis was to assess trends in key indicators of determinants and of health status, but more importantly, to understand the absolute and relative changes in the differences between population groups for each of these indicators over the last 25 years.

## Selection of indicators

There are international and local frameworks that provide indicators for monitoring the determinants of health. These include the Sustainable Development Goals,<sup>574</sup> the World Health Organization's *Operational framework for monitoring social determinants of health equity*,<sup>209</sup> the Treasury's *Living Standards Framework*<sup>208</sup> and Stats New Zealand's *Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa*.<sup>207</sup> We reviewed these frameworks to inform our selection of indicators (see Tables 1 and 2).

Given resource and time constraints, our analysis is primarily based on indicators from publicly available datasets (see Tables 3 and 4 for the main sources used). This limited our choices of indicators, as many are not available by the level of disaggregation and/or the timeframe (from 2000) that we sought. Additionally, changes over the last 25 years in the definitions of some indicators (e.g. severe housing deprivation) and the way in which some were measured (e.g. frequency of measurement and size of samples) made assessment of trends over time more challenging.

## Disaggregation

We analysed the chosen indicators by multiple variables such as gender, socioeconomic deprivation, ethnicity, disability and age where applicable. The report presents a selection of graphs that demonstrate important differences and/or trends.

We present many indicators by ethnic group. Ethnicity is the ethnic group or groups that people identify with or feel they belong to. It is self-perceived, and people may belong to one or more ethnic groups. In Aotearoa New Zealand, ethnicity is an evidence-based marker of health need.<sup>575,576</sup> At any given level of socio-economic deprivation, Māori and Pacific peoples have poorer health outcomes than other ethnic groups.<sup>15,577,578</sup>

Ethnicity Data Protocols for the Health and Disability sector guide the collection, classification, recording and output of ethnicity data.<sup>579</sup> When people identify with multiple ethnic groups, various methods are used to assign a single ethnic group for the purposes of reporting and analysis.



“Prioritised ethnicity” is used in many health analyses, whereby each respondent is allocated to a single ethnic group using an established prioritisation framework that ensures that ethnic groups of policy importance or of small size are recognised first.<sup>579</sup> Māori, Pacific peoples and Asian are prioritised as the first three groups. So, for example, if someone identifies as Māori, Pacific and European, they will be assigned prioritised Māori ethnicity.

Stats New Zealand and the New Zealand Health Survey use “total response” ethnicity. “Total response” refers to a method where each person is counted in all of the ethnic groups they identify with; this means the total number of responses is bigger than the number of respondents.

Ideally, the method used for assigning ethnicity should be related to the context and question being asked.<sup>580,581</sup> Prioritised ethnicity is the preferred method to analyse inequities between Māori and non-Māori; total response ethnicity will underestimate inequities between Māori and European ethnic groups because there will be many Māori who are also counted in the comparator European total response group. However, analyses using prioritised ethnicity undercount some ethnic groups, particularly Pacific peoples. Additionally, the assigned ‘prioritised’ ethnicity may not reflect the ethnicity a person most strongly identifies with.

There are well-documented problems related to the completeness and quality of ethnicity data in Aotearoa New Zealand. Post-enumeration surveys indicate the Census has an undercount which is greater for Māori, Pacific and Asian peoples than for Europeans. This leads to inaccurate population estimates, which can have impacts on policy and implementation, especially for those with highest health needs.<sup>582,583</sup> Māori continue to be underrepresented in health data sets compared to official population numbers.<sup>584</sup>

This report draws on a variety of data sources which have different ways of reporting outcomes for populations. Given the time and resource constraints for this report, we were limited to using outputs that were readily available. Consequently, ethnicity groupings are not consistent throughout the report. For determinants of health, total response ethnicity is used and data on four population groups is graphed: Māori, Pacific, Asian and European. We acknowledge that there are groups in the population (such as people of Middle Eastern, Latin American and African ethnicity) that are not included in these graphs.

For health outcomes, prioritised ethnicity is used (except for the New Zealand Health Survey). Some health outcome data are presented as a comparison between Māori and non-Māori/non-Pacific populations, while other health outcome data are presented for four groups: Māori, Pacific, Asian and non-Māori/non-Pacific/non-Asian (nMnPnA).

## Surveys

Some of the data presented come from surveys and therefore represent estimates of that measure within the population. Where sample sizes are small the accuracy of estimates, particularly for sub-populations, are less certain. In our data analysis we have chosen not to include confidence intervals but acknowledge that the confidence intervals could be large

when groups are small. We note that data collection for the 2021-22 Household Economic Survey was restricted by both COVID-19 and weather-related events, resulting in a smaller number of households being interviewed.

## Selected indicators

Tables 1 and 2 illustrate the complete set of indicators we have selected. Indicators graphed in **Section 3** are asterisked. The remainder are appended in the online version of the report. The final two columns of Table 1 show whether the indicator is in the World Health Organization's *Operational framework for monitoring social determinants of health equity*<sup>209</sup> and/or Stats New Zealand's *Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa*.<sup>207</sup>

Table 1. Indicators: Determinants of health

Determinant	Indicator	Disaggregation	In WHO Framework <sup>a</sup>	Wellbeing Indicator <sup>b</sup>
Income	*Individual income	Ethnicity	Yes	Yes
	*Child poverty – material hardship	Ethnicity	Yes	Yes
	*Income inequality (Gini)	Before and after housing costs	Yes	No
Employment	*Unemployment rate	Ethnicity	Yes	Yes
	*Not in Employment, Education or Training (NEET)	Ethnicity	No	Yes
	Workplace fatalities and injuries	Ethnicity	Yes	Yes (accidents)
Education	*Prior attendance at Early Childhood Education	Ethnicity	Yes	Yes
	*School attendance	Ethnicity	Enrolment	No
	*Attainment of at least level 2 NCEA (or equivalent)	Ethnicity	Yes	Yes
	*Māori enrolled in Māori-medium education	Early Childhood Education, Primary and Secondary schools	No	No

Determinant	Indicator	Disaggregation	In WHO Framework <sup>a</sup>	Wellbeing Indicator <sup>b</sup>
Housing	Severe housing deprivation	Ethnicity	Yes	Yes
	*Household crowding	Ethnicity	Yes	Yes
Indigeneity	*Iwi affiliation	10 largest Iwi	No	No
	*Te reo Māori speakers	In Māori population	No	Yes
Experience of racial discrimination	Experience of racial discrimination	Ethnicity	Yes (any discrimination)	Yes (any discrimination)
Social inclusion and cohesion	*Loneliness	Age	No	Yes
	*Trust in parliament, health, and between people	Ethnicity	Similar	Yes (people & Parliament)
Digital technologies	Access to the internet	Ethnicity	No	No
	Screen time		No	No
Justice system	Imprisonment rates	Age and ethnicity	Yes	No
Physical environment	Air quality		Yes	Yes
	Freshwater quality		No	Similar
Climate change	*Temperature change		No	No
	*Greenhouse gas emissions		No	Yes

\*Indicators that are included as Figures in Section 3

<sup>a</sup> World Health Organization. Operational framework for monitoring social determinants of health equity, 2024.<sup>209</sup>

<sup>b</sup> Stats NZ. Wellbeing data for New Zealanders.<sup>207</sup>

**Table 2. Indicators: Health outcomes**

<b>Domain</b>	<b>Measure</b>	<b>Disaggregation</b>
Life expectancy	*Life expectancy	*Ethnicity, *deprivation
Mortality	*Infant	Ethnicity
	Child	Deprivation
	*Heart disease, stroke and circulatory system	Ethnicity
	Lung cancer	Ethnicity
Health conditions	*Diabetes prevalence	*Ethnicity; deprivation
	*Psychological distress	*Age; *gender; *disability
	*Child oral health	Ethnicity
Risk factors	*Smoking	Ethnicity
	*Vaping	Ethnicity
	Alcohol	Ethnicity
	Body size	Ethnicity
Access to care	Ambulatory sensitive hospitalisations 45-64 years	Ethnicity
	Potentially avoidable hospitalisations 0-14 years	Ethnicity
	Immunisation coverage at 6 and 24 months	Ethnicity
	Unmet need for GP due to cost	Age; disability
	Registration with a Lead Maternity Carer in third trimester and postnatally	Ethnicity

\*Indicators that are included as Figures in Section 3 (where disaggregation is by multiple variables, the disaggregation with the asterisk is shown as a Figure in Section 3)

We have used data from a wide variety of sources, such as the census, national surveys, reports and web tools. Many of these are publicly available and are summarised in the tables below.

Table 3. Publicly available data sources used for determinants of health

Information Source	Summary	Reference
*Census	Official count of people and dwellings in Aotearoa New Zealand every 5 years.	Stats NZ   Tatauranga Aotearoa. Census. 2024. (accessed June 11, 2025) <a href="https://www.stats.govt.nz/census/">https://www.stats.govt.nz/census/</a>
*Household Economic Survey (HES)	Annual survey on household income, savings, and expenditure. ~20,000 households surveyed.	Stats NZ   Tatauranga Aotearoa. Household income and housing cost statistics – HES (Income). 2024 (accessed June 11, 2025) <a href="https://datainfoplus.stats.govt.nz/item/nz.govt.stats/27d850c1-939c-4e93-b61c-a1b5196b7f27">https://datainfoplus.stats.govt.nz/item/nz.govt.stats/27d850c1-939c-4e93-b61c-a1b5196b7f27</a>
*Household Labour Force Survey (HLFS)	Quarterly survey of people employed, unemployed and not in the labour force. ~15,000 households each quarter	Stats NZ   Tatauranga Aotearoa. Household Labour Force Survey sources and methods: 2025. 2025 (accessed June 11, 2025) <a href="https://www.stats.govt.nz/methods/household-labour-force-survey-sources-and-methods/">https://www.stats.govt.nz/methods/household-labour-force-survey-sources-and-methods/</a>
*General Social Survey (GSS)	Survey that reports every two years on wellbeing. ~12,000 individuals	Stats NZ   Tatauranga Aotearoa. About the General Social Survey. 2023 (accessed June 11, 2025) <a href="https://www.stats.govt.nz/help-with-surveys/list-of-stats-nz-surveys/about-the-general-social-survey/">https://www.stats.govt.nz/help-with-surveys/list-of-stats-nz-surveys/about-the-general-social-survey/</a>
*Stats NZ	Collects and publishes data from censuses and surveys and publishes insights.	Stats NZ   Tatauranga Aotearoa. Homepage (accessed June 11, 2025) Home   Stats NZ
Kiwis Count Survey	Quarterly survey on people's trust in public services. ~ 2,000 people surveyed per quarter.	Public Service Commission   Te Kawa Mataaho. Rangahau Kiwis Count. (accessed June 11, 2025) <a href="https://www.publicservice.govt.nz/research-and-data/kiwis-count">https://www.publicservice.govt.nz/research-and-data/kiwis-count</a>
Education Counts	Includes reports and data on students in the education system from early learning to tertiary.	Ministry of Education   Te Tāhuhu o Te Mātauranga. Education Counts. 2025. (accessed June 11, 2025) <a href="https://www.educationcounts.govt.nz/statistics">https://www.educationcounts.govt.nz/statistics</a>
Ministry for the Environment	Provides reports on the state of the environment e.g. air, climate change, fresh water.	Ministry for the Environment   Manatū mo Te Taiao. Facts and science. 2025 (accessed June 10, 2025) <a href="https://environment.govt.nz/facts-and-science/">https://environment.govt.nz/facts-and-science/</a>

Information Source	Summary	Reference
Ministry of Social Development	Provides reports on household incomes, material wellbeing, poverty, inequality and hardship.	Ministry of Social Development   Te Manatū Whakahiato Ora. Household incomes, material wellbeing, poverty, inequality and hardship. 2025 (accessed June 10, 2025) <a href="https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/research/household-incomes-material-wellbeing-poverty-inequality-and-hardship.html">https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/research/household-incomes-material-wellbeing-poverty-inequality-and-hardship.html</a>

\*Tools:

















- **Aotearoa Data Explorer** - Stats NZ | Tatauranga Aotearoa. Aotearoa Data Explorer. 2025 (accessed June 11, 2025) <https://explore.data.stats.govt.nz/>
- **Infoshare** - Stats NZ | Tatauranga Aotearoa. Infoshare. 2025 (accessed June 11, 2025) <https://infoshare.stats.govt.nz/>
- **Place and ethnicity group summaries** - Stats NZ | Tatauranga Aotearoa. Place and ethnic group summaries. 2025 (accessed June 11, 2025) <https://tools.summaries.stats.govt.nz/>

Table 4. Publicly available data sources used for health outcomes





















Information Source	Summary	Reference
New Zealand Health Survey	Continuous 'rolling' survey of the health and wellbeing of children and adults reported annually. 9,719 adults and 3,062 children surveyed in 2023/24.	Ministry of Health   Manatū Hauora. New Zealand Health Survey. 2025 (accessed June 12, 2025) <a href="https://www.health.govt.nz/statistics-research/surveys/new-zealand-health-survey">https://www.health.govt.nz/statistics-research/surveys/new-zealand-health-survey</a>
Virtual Diabetes Register	Provides estimates of the number of people with suspected diabetes based on hospital discharges, outpatient attendance, pharmaceutical dispensing and laboratory tests.	Health New Zealand   Te Whatu Ora. Virtual Diabetes Register and web tool. 2024 (accessed June 12, 2025) <a href="https://www.tewhatauora.govt.nz/for-health-professionals/data-and-statistics/diabetes/virtual-diabetes-register-web-tool">https://www.tewhatauora.govt.nz/for-health-professionals/data-and-statistics/diabetes/virtual-diabetes-register-web-tool</a>
Maternity web tool	Provides annual statistics on people giving birth, their pregnancy and characteristics of live-born babies from the National Maternity Collection.	Health New Zealand   Te Whatu Ora. Report on maternity web tool. 2024 (accessed June 12, 2025) <a href="https://www.tewhatauora.govt.nz/for-health-professionals/data-and-statistics/maternity/report-on-maternity-web-tool">https://www.tewhatauora.govt.nz/for-health-professionals/data-and-statistics/maternity/report-on-maternity-web-tool</a>
Immunisation coverage	Annual and quarterly reporting of immunisation coverage.	Health New Zealand   Te Whatu Ora. Immunisation Coverage. 2025 (accessed June 11, 2025) <a href="https://www.tewhatauora.govt.nz/health-services-and-programmes/vaccine-information/immunisation-coverage">https://www.tewhatauora.govt.nz/health-services-and-programmes/vaccine-information/immunisation-coverage</a>
New Zealand Child and Youth Epidemiology Service	Provides reports on the health of children and young people.	New Zealand Child and Youth Epidemiology Service. Collating and disseminating information on the health of children and young people in New Zealand. 2025 (accessed June 12, 2025) <a href="https://www.otago.ac.nz/nzcyes">https://www.otago.ac.nz/nzcyes</a>

**Table 5: How are we tracking? A scorecard**

Trends in determinants of health 2000-2024

Determinants	Total population trend	Trends by sub-group	Trends in total population measures, and in absolute and relative inequities by ethnic group, gender, age and disability.
Income (individual and household)			Real increase in all household incomes 2007-2021 but no change in income gaps by ethnic groups. Decrease in gender gap overall but large inequities for women by ethnic group.
Income inequality			No substantial change since 2000. Housing costs contribute to increased net income inequality, which impacts differentially on low-income families.
Child poverty			Absolute reductions in measures of child poverty for all ethnic groups from 2007-2009 up to 2022/23 - but increases in relative inequity. Significant increases in material hardship in 2023/24.
Food security (in households with children <15years)			Food insecurity measures improved from 2012/13 up to 2020/21 but have significantly worsened since 2022/23. Large inequities for Pacific peoples (2.4 times higher than non-Pacific), disabled (1.6 times non-disabled) and children living in the most deprived quintiles compared with least deprived (2.9 times higher).
Unemployment			Total employment fell from 2011/12 to 2022/23 with reductions in absolute and relative inequities. However, there are stark inequities by ethnic group, age and region, which are exacerbated in economic recession.
Not in Employment, Education or Training (NEET)			Little change in overall NEET over last decade; now increasing again. Small reductions in absolute and relative inequities by ethnic group 2010-2020.
ECE attendance			Narrowing of absolute and relative ethnic inequities since 2000, but increasing again since 2020
School attendance			Attendance overall declining since 2015, exacerbated by COVID-19 pandemic. Inequities slightly increasing by ethnic group and School Equity Index.



Determinants	Total population trend	Trends by sub-group	Trends in total population measures, and in absolute and relative inequities by ethnic group, gender, age and disability.
Attainment NCEA Level 2+			Increased for all ethnic groups up to 2020 but declining for all groups since.
Kaupapa Māori schooling			Increasing numbers of children enrolled after earlier declines.
Household crowding			A small reduction in relative inequities but an overall increase in household crowding for all ethnic groups compared with 2001.
Housing ownership			Declining for all ethnic groups up to 2023, and with increased inequities, especially for Pacific peoples.
Iwi affiliation			Growth in iwi affiliation in Census data.
Te reo speakers			Increases mainly due to population growth.
Loneliness			Worsening indicator up to 2022/2023; marked differences by age group. The measure continued to worsen for young adults 25-34 years in 2023/2024. Disproportionately experienced by disabled people.
Trust			Increasing inequities by ethnic group and by age group (younger people > older) in trust in institutions and in community.
Environmental indicators			Climate and biodiversity measures show declines in most indicators.
Greenhouse Gas Emissions (GHG)			GHG emissions heading in the right direction, but not yet at 1990 levels

#### Legend



Progress made,  
inequities reducing



















Progress stalled, no  
change in inequities



Negative trend,  
increasing inequities

Scorecard: Trends in health indicators and inequities 2000-2024

Health indicator	Total population trend	Trend in sub-groups	Trends in total population measures, and in absolute and relative inequities by ethnic group, gender, age and disability.
Life expectancy			Overall increase in life expectancy (LE). Narrowing of the absolute difference in LE for Māori, but small increase for Pacific peoples compared to nMnP. Gaps also persist by socioeconomic status, disability and region.
Infant mortality and child mortality			Overall reductions in mortality (note small numbers). Some reductions in absolute and relative inequity for Māori compared with non-Māori but worsening for Pacific infants. Still unacceptable differences by socioeconomic status (NZDep quintile) for infants and children.
Heart disease, stroke and circulatory mortality			Halving of total population CVD mortality. Important reduction in absolute inequity between Māori and nMnPnA. Relative inequities persist for Māori and Pacific peoples.
Diabetes prevalence			Total population increase in prevalence. Increase in absolute inequity for Pacific peoples and relative inequities persist for Māori, Pacific and Indian peoples, and by level of socioeconomic deprivation.
Psychological distress			Marked rise for all since 2011/12. Large inequities by age group (young people > older people), ethnic group, socio-economic status and disability.
Oral health			Poor data; incomplete. Likely no significant overall improvement, and persistent inequities by ethnic group, rurality and socioeconomic status.
Health risk factor: smoking			Significant reduction in smoking rates for all, across all ethnic groups and ages. Relative inequities persist for Māori and Pacific peoples, disabled people and those living in the least advantaged areas.
Health risk factor: vaping			Significant increase in vaping rates for all since 2017. However major inequities by ethnic group, socioeconomic deprivation and age (15-24yrs).

**Legend**



Progress made, inequities reducing



Progress stalled, no change in inequities



Negative trend, increasing inequities

# Appendix 5. AI terminology

## Definitions - the language of artificial intelligence

### **Artificial intelligence**

The term 'AI' incorporates machine intelligence, machine learning, robotic intelligence, and artificial general intelligence (AGI).

#### **Machine intelligence**

Machine intelligence (also called 'machine learning') reproduces human ability to detect, describe and analyse patterns in data. It learns from, and acts on, the patterns to refine its capabilities.

### **Deep learning**

Deep learning is a type of machine learning that uses artificial neural networks. These networks mimic how neurons in the human brain signal to one another. Deep learning needs a lot of data but has a powerful predictive capability. It is used in tools like voice recognition, fraud detection, self-driving cars and fintech. AI models built with deep learning can learn shortcuts from the data they're trained on. This allows them to simulate processes more accurately, and much quicker, than methods that rely on computation.

### **Artificial general intelligence**

AGI (also called 'full AI' or 'human-level AI') coordinates and integrates AI, so it can operate with a full, or extended, range of human abilities, which aims to match, or surpass, anything human. AGI produces broad and deep data analysis, findings and recommendations, faster – and potentially better – than humans.

### **Superintelligence**

Most machine-learning experts think AGI will quickly and vastly outstrip the combined cognitive capacities of humans. It could become capable of revolutionary technological and economic advances in every sector, much more rapidly than is currently possible.

Source: Adapted from Henderson P. At the cutting edge: How Artificial Intelligence will change our primary sector forever. Auckland, 2023.<sup>356</sup>

## Appendix 6: Te reo glossary

Aotearoa	New Zealand
Hapū	Kinship group, sub-tribe
Hauora	Health, wellbeing
Hui	To gather, assemble; meeting
Iwi	Tribe (In the context of this report 'iwi' is sometimes used more broadly to include post settlement entities).
Kai	Food
Kaiārahi	Navigators
Kaitiakitanga	Guardianship
Kāinga	House, home
Kaupapa	Purpose, policy, initiative, theme or topic
Kīngitanga	The King movement
Kōhanga reo	Māori language preschool
Kura kaupapa	Māori school
Mana	Prestige, authority, influence
Mana motuhake	Autonomy, self-government, independence
Māori	Indigenous people of Aotearoa
Marae	The open area in front of the wharenui, where formal greetings and discussions take place. Often also used to include the complex of buildings around the marae.
Mātauranga	Knowledge, wisdom
Mauri oho	Energised life force
Mokopuna	Future generations (grandchild, descendant)
Oranga	Wellbeing
Ōritetanga / Rite tahi	Equity
Pae Ora (Act)	Healthy Futures Act (2022)

Papakāinga	Housing on ancestral land
Pākehā	New Zealander of European descent
Rangatahi	Young person
Taiao	Environment, natural world
Tairāwhiti	Gisborne/East Cape district
Tamariki	Child/children
Tangata Tiriti	Those who do not whakapapa Māori but belong to the land by right of Te Tiriti o Waitangi (coined by Sir Edward Taihakurei Durie in 1989)
Tangata whenua	Indigenous people; people born of the whenua
Taonga	Treasure, property or possession
Te Tai Tokerau	Northland
Te Tiriti o Waitangi	The Treaty of Waitangi
Te reo Māori	Māori language
Tikanga	The customary system of values, laws and practices that have developed over time and are deeply embedded in the social context
Tino rangatiratanga	Sovereignty, self-determination
Tūpuna (or tīpuna)	Ancestors
Wahakura	A woven flax bassinet
Waka	Canoe, vehicle
Wānanga	To talk, discuss
Wāhine	Female, women
Whare wānanga	Place of higher learning, university
Whakapapa	Genealogy, family lineage
Whānau	Extended family, family group
Whenua	Land, country

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