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Final Research Report

Haumanu Hauora

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HAUMANU HAUORA: Strengthening health institution Māori responsiveness to climate change

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Extended Summary

The “Haumanu Hauora: Strengthening health institution responsiveness to climate change” project (Haumanu Hauora) is funded by the Deep South National Science Challenge. Our research team has been working to determine how health institutions (for example DHBs) develop Māori responsive policy as a preparatory step in anticipation of climate change impacts on Māori health. The project has involved several components, one of which involved speaking with tāngata whenua and DHB staff from the Bay of Plenty, Lakes and Waikato DHB regions about their experiences of climate change and involvement with health services. Another component was an environmental scan of available website information on the 17 other DHBs to ascertain the extent of policy that speaks to both the Treaty of Waitangi and climate change. This report presents an overview of the findings.

This report begins with some context setting. We provide a summary of our literature reviews before a brief outline of the establishment of DHBs, which are the “health institution” of focus for this research. As the primary health provider and funders around the country, DHBs have been engaged as the site through which to understand the Māori health and climate change policy needs. Although DHBs were disestablished at the conclusion of our project, there are still lessons to learn from the ‘old’ health system. We present themes from tāngata whenua and rangatahi interviews as a way to foreground policy development information provided by DHB staff.

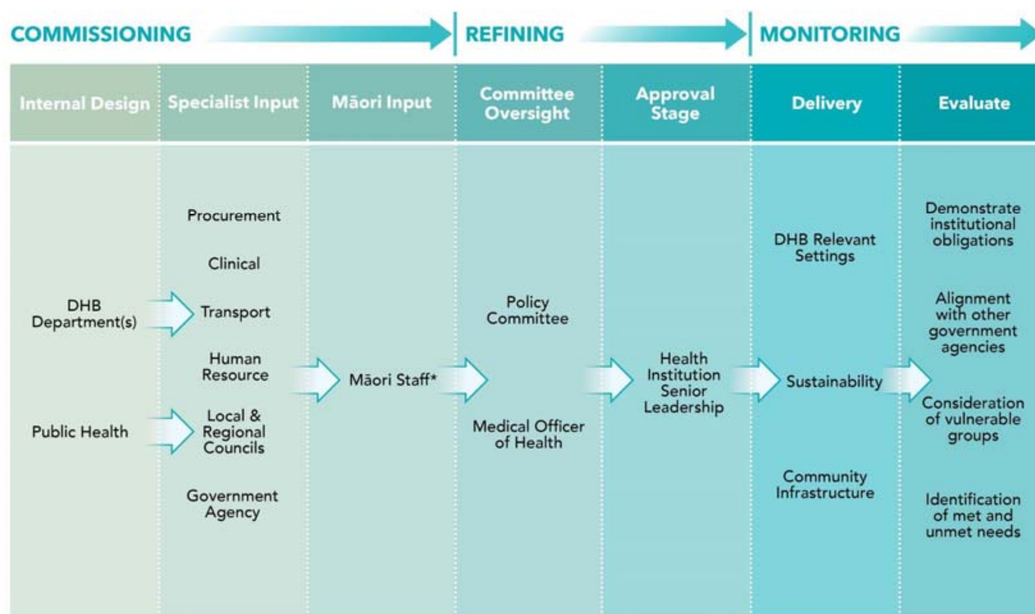
DHBs have overseen and been responsible for providing and funding provision of most health services throughout Aotearoa since they were established in 2001. In 2018 a review of the health system began. Subsequent review findings noted a fragmented health system that struggles to deliver equity and consistency for all New Zealanders. The latest health reform, with the creation of the partnership arrangement, heralds the promise of a new public health system that will better address the persistent health inequities Māori experience.

In order to ensure our regional focus was consistent at a national level, our team did an environmental scan of the remaining 17 DHBs. An examination of the websites found a resounding lack of policy that dealt with climate change or a recognition of Māori health vulnerabilities to climate change. We found it problematic that no DHB’s website publicly pronounced policies addressed climate change and the Treaty of Waitangi in unison. Health institutions such as DHBs and other providers have an obligation to ensure they are responsive to Māori health needs. The Waitangi Tribunal Wai2575 report (Waitangi Tribunal, 2021) highlights areas the Crown needs to work on to improve Māori health outcomes. This gives rise to the need for Māori community health service provision and for Māori models of health and wellbeing to be included more readily in health institution policy, process, and ultimately, in service delivery. Ensuring consistent Māori input in the policy process offers greater potential for such a vision to be realised. Our intention is to strengthen health institution preparedness to mitigate risk to Māori health in the context of climate change, and it is clear that there is substantial mahi to do in this space.

The main purpose of this report was to produce a framework of the existing policy process in order to identify potential barriers and facilitators to implementing strategic climate change policy cognisant of Māori health needs. Our interviews revealed several problems with policy processes that warranted further investigation. In light of the identified weaknesses we refined the existing policy framework and identified key intervention points that are transmutable to different contexts

and structures. The proposed changes address the aforementioned problems to ensure that Māori input is a consistent part of the process and that there is a clear evaluation phase.

Through our research process we have provided an example of the current policy process so that we identify places where there is potential to intervene in a proactive manner in order to strengthen Māori voices and guide climate change policy. Here, we present a framework that demonstrates the existing policy process within DHBs based on what we heard in interviews with tāngata whenua and DHB/Health Institution staff. This framework demonstrates several key problems; namely, a lack of consistent Māori input and an absence of policy evaluation. In light of this we developed a policy framework that we present as transmutable to different contexts and structures. The key changes address the aforementioned problems and ensure that Māori input is a consistent part of the process and that there is a clear evaluation phase.



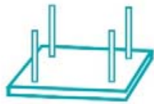
**Staff hold clinical or managerial positions in the DHB however the policy work becomes an unintended additional kaupapa.*

We propose five such intervention points; ensuring foundation alignment, enhancing access to care, engaging with vulnerable communities, building capacity and capability and demonstrating institution obligations.

- **Ensuring foundation alignment** is imperative to consider decision-making factors, climate adaptation, Māori health delivery and outcomes, as well as the social determinants of health. Consideration of these four areas in a Commissioning phase of policy development clearly sets out the expectations for all new health institution policy.
- Public health institutions are part of the larger health system that have responsibility for maintaining health delivery, funding and service provision in Aotearoa. A recent finding of the Waitangi Tribunal (2021) that health services had not met the health needs of Māori means that work needs to be done to improve equity in health outcomes for Māori. **Enhancing access to care** involves improving the health system to reduce unmet health needs; ideally while also preparing for the impacts of climate change.

- The need to implement climate change as core business across health services to build capacity and capability to strengthen leadership and delivery is an intervention point that is pertinent to the entirety of the policy process. Climate change was reportedly not well understood by health institution staff and participants emphasised the need for strategies to help to increase knowledge and understanding. **Building capacity and capability** will strengthen all phases of policy development, in turn generating more effective policy outcomes.
- Indigenous people are disproportionately experiencing the negative impacts of climate change, despite generally contributing little to climate emissions. The deepening climate crisis generates specific impacts that will exacerbate the already disproportionately negative health impacts on Māori. Economic insecurity and deprivation substantially hinder capacities to respond to climate change impacts or seek health assistance. Health institutions such as DHBs and other providers have an obligation to ensure they are responsive to Māori health needs. **Demonstration of institution commitment** is key to making progress.

Five key intervention points to enhance the current policy framework include:



A. ENSURE FOUNDATION ALIGNMENT
Ensure the alignment of Māori responsive climate health adaptation to health institution policy, legislation and strategic direction

B. ENHANCE ACCESS TO CARE
Enhance services to reduce unmet health needs through preparedness for the impacts of climate change

C. ENGAGE WITH VULNERABLE COMMUNITIES
Meet climate health adaptation needs through authentic relationships with Māori and other vulnerable communities

D. BUILD CAPACITY AND CAPABILITY
Implement climate change as core business across health services to build capacity and capability to strengthen leadership and delivery

E. DEMONSTRATE INSTITUTION COMMITMENT
Determine a strategic direction that recognises relevant obligations and considers diverse climate change needs

The Waitangi Tribunal Wai2575 report (Waitangi Tribunal, 2021) highlights areas the Crown needs to work on to improve Māori health outcomes. This gives rise to the need for Māori community health service provision and for Māori models of health and wellbeing to be included more readily in health institution policy, process, and ultimately, in service delivery. A clear national policy to mitigate the impact of climate change on Maori health is needed. Health institutions need to do adaptation preparedness better, while also engaging simultaneously with mitigation and prevention.

The later part of the discussion brings in wider considerations such as the Pae Ora Healthy Futures Act and the changing health structure this will entail, the need for a broader review of health infrastructure, the necessity to build relationships with iwi, hapū and whānau Māori, and barriers that might hamper the implementation of the recommended policy framework and intervention points.

We conclude the report with the argument that there is a clear deficit in the existing policy process that means a lack of preparedness for the intersecting health crises that vulnerable Māori will experience in the face of climate change. Despite clear resilience and adaptation strategies, structural change is needed to address identified disadvantages. Strengthening health institution responsiveness to Māori health needs is essential. The refined policy framework and intervention points are a key place to start; central to the success of this is the connection between DHBs (and other health institutions) and iwi and Māori providers to develop Kaupapa Māori centred and whanau-wellbeing focused policy to guide and develop climate adaptation strategies that fit Māori communities.

Introduction

This report has been prepared as part of the Haumanu Hauora project for the purpose of facilitating consideration of the impacts of climate change on Māori health. During these last two years our team has been working with Waikato, Bay of Plenty and Lakes District Health Boards (DHBs) and tāngata whenua in the central North Island of Aotearoa New Zealand to contribute to the development of a framework for health institution responses to climate change that works with and for vulnerable urban and rural Māori. By working with three DHBs we hoped to gather quality information that would help guide responses to ensure preparedness for the scale and pace of climate change. Furthermore, we hoped to gather information that would be beneficial for other contracted health providers (whether iwi, mainstream or government agencies).

There are three phases to the Haumanu Hauora project. Phase One involved describing climate change health considerations for Māori. For this phase we undertook both a systematic review and a literature review. Phase Two consisted of hui and group interviews to co-design a policy framework. Grounded in a collaborative partnership, the co-design work was intentionally incorporated to inform “policy to mitigate risk to Māori (and others) in the context of climate change” (National Science Challenges, n.d., para. 2). Finally, Phase Three involves the dissemination of research findings to interested audiences. This report falls within Phase Three. Our hope is that the knowledge gained from this research can contribute to the development of a policy framework for implementation at regional and national levels (National Science Challenges, n.d.).

We begin the report with an abbreviated review of the literature examined as part of Phase One and conclude the introduction with a brief outline of the establishment and objectives of DHBs. The methods section presents the sources of data collection before describing the findings of our research. Firstly, we present narrative descriptions of the tāngata whenua and rangatahi voice interviews to foreground the contributions of health institution staff. We then present the existing policy process while presenting the barriers and facilitators as identified by our interview participants. After identifying several weaknesses, we present a revised framework with key intervention points. We conclude the report by arguing how addressing the aforementioned problems will provide a solid first step towards developing climate change policy that centres Māori health.

Abbreviated literature reviews

The text in this section has been uplifted from Phase One work on a systematic review[1] and literature review. Our purpose for including these brief pieces here is to provide a background understanding of our consideration and approach to Phase Two of the study.

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[1] Masters-Awatere, B., Young, P., & Graham, R. (under review). State agencies and researchers engaging with Indigenous communities on climate change adaptation planning: A Systematic Review. Submitted to MAI Review 6 October 2021.

Systematic Review

Indigenous communities across the globe have been negatively impacted by colonising activities imposed by settler groups and State agencies (Lewis, Williams & Jones, 2020). In recognition of the continuing negative impacts upon Indigenous people, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was formed to establish a universal framework of minimum standards for the survival, dignity and well-being of Indigenous peoples. Indigenous groups from Aotearoa New Zealand, Australia, the Pacific Islands, Canada, and the United States have all experienced similar colonisation processes with equally detrimental impacts. These common experiences of colonisation provide the foundation on which to review literature on the inclusion of Indigenous voices in climate change research.

We utilised PRISMA protocols to search five databases: Sage, Science Direct, Taylor & Francis, Wiley, and Springer. The Sage, Science Direct, and Taylor & Francis publisher databases were directly searched, with Springer and Wiley collections searched via the University of Waikato library database. Utilising search terms across all five databases gave us confidence that our systematic search was sufficiently broad. The systematic search was organised around three core areas: Indigenous people/groups, climate change strategic planning, and Indigenous knowledge and active participation. These three core areas were selected due to their relevance to the aims of Haumanu Hauora and as a way to capture Indigenous perspectives and responses to climate change.

Climate change science research typically excludes an examination of the socio-cultural risks and aspects of life (Tam et al., 2021). Scientific research is also empirically based within a Western framework, which tends to exclude all facets of Indigenous knowledge and delegitimises Indigenous cultural beliefs (Lewis et al., 2020). Instead, Indigenous knowledge is regarded as local, anecdotal, or non-scientific (Smith, 2012). Subsequently, Indigenous information has not been systematically included in climate change literature. This has implications for wider responses to climate change (Petzold et al., 2021). Decolonising scientific research is needed to ensure the inclusion and valuing of Indigenous knowledge and associated records of changes in environment, climate, plant growth and marine environments.

Altogether 22 studies were identified as suitable for inclusion in the review. Included studies came from Fiji (n=1); Samoa (n=1); Aboriginal and Torres Strait Islands (Australia) (n=10); and First Nations and Inuit communities (Canada/US) (n=10). The review includes multiple methods and analyses, including, but not limited to, case studies, community-based research studies, Indigenous research studies, participatory research studies, community action studies, and decolonising research studies. Of the included studies, only two explicitly mention health. One study named a health institution as a state actor (McClymont Pearce et al., 2012), while another (Healey et al., 2011) directly considered health impacts of climate change on the community and health systems. The remaining studies were related to health in that they consider environmental impacts, land use, and cultural practice. However, the authors of these studies did not explicitly make links to health.

Our overall research aim was to determine the degree to which Indigenous communities participate in and contribute to institutional responsiveness to climate change. Our key goal was to identify strategies and leverage points for introducing climate change responses in a Māori health context. Through this systematic review we have identified a gap in the research literature with regards to health institutional responsiveness to climate change that centres Indigenous communities. When

analysed using the He Pikinga Waiora framework (Oetzel et al, 2017), only two of the included studies explicitly mentioned health systems and/or health institutions as state actors. Neither of these two studies “stood out” with regards to their systems thinking or their research approach. The other twenty studies had aspects related to health, but these links were not always explicit. For example, the connection between Indigenous health and access to land and types of land use was not explicit. There is room for links to health to be made more explicit within climate change adaptation research and for health institutions to respond to the impacts of climate change more intentionally with regards to Indigenous health. Consideration of Indigenous health is important given the shift in focus from climate change mitigation to climate change adaptation. Ideally, emphasis should be on minimising the negative impacts on Indigenous people in the context of climate change.

Considering this review in light of the work being done in Aotearoa New Zealand, specifically that of the Office of the Māori Climate Change Commissioner[2] and the Ministry of Health’s Māori Health Action Plan 2020-2025 (Ministry of Health, 2020), it is heartening to see government agencies prioritising activities of relevance to climate change. Nevertheless, Māori continue to carry a greater burden of disease (Jones, 2019). This greater burden warrants a higher level of inclusion and prioritisation for Māori in Aotearoa New Zealand’s climate change responses. The climate change risks associated with increased temperatures and an increased frequency of flooding events (Hallegatte et al., 2015; Hallegatte & Rozenberg, 2017) impact on Māori health, both physically (through climate sensitive conditions such as infectious diseases, chronic heart and lung diseases) and psychologically (through mental illness) (Clayton et al., 2015; Doherty & Clayton, 2011; Jones, 2019). There is also a risk that resources for mental health services for Māori will be redeployed elsewhere due to increased pressure on health services due to climate change. Inequities already experienced by Māori within the health system (Brown, 2018; Cormack et al., 2018; Graham & Masters-Awatere, 2020; Harris et al., 2012;) make it likely that Māori will be disproportionately impacted by climate change.

Literature Review

On a global scale, climate change is the biggest threat to humanity through compounding ecological disasters such as droughts, fires, rising sea levels, ocean acidification, flooding, and the spread of vector-borne diseases (IPCC, 2019; 2021). When it comes to examining climate change impacts, a focus on global averages tends to hide dramatic disparities between rich and poor, and there remain large segments of the human population whose lives are curtailed by poverty, hunger, and disease (Myers & Patz, 2009, p. 225). Climate change disproportionately impacts the socially and politically marginalised whose very identity is closely connected to the environment (Begay & Gursoz, 2018; Tassell-Matamua et al, 2021). Well documented is the notion that Māori experience a lower average life expectancy than other New Zealanders (Dow, 1999; Ministry of Health, 2020). Existing health disparities (Ministry of Health, 2019b), political marginalisation (Lewis, Williams & Jones, 2020), discriminatory systems and racist practices (Cormack, Stanley & Harris, 2018; Harris, Cormack,

[2] See http://www.maoriclimatecommission.co.nz/

Tobias et al., 2012) that maintain inequitable access (Wanahalla, 2006) compound risks of the known biophysical impacts of climate change (Holder, 2020; Li, Sain, O'Mearns et al., 2021; O'Neill, Green & Liu, 2012).

The purpose of this literature review was to demonstrate the need for health institutions in Aotearoa New Zealand to give serious consideration to climate change impacts on Māori health vulnerabilities. A deepening climate crisis generates specific impacts that will exacerbate the already disproportionately negative health impacts on Māori. These unequal health outcomes have not spontaneously emerged, but rather have been foreshadowed by existing inequities. These Māori health risks can be mitigated by proactively preparing for their arrival. One strategy that this research is investigating is the potential to develop and implement a policy framework cognisant of climate change.

There is widespread consensus that climate change will have negative impacts on human health (Ebi, Mills, Smith & Grambsch, 2006; Costello et al, 2009; McMichael, Montgomery & Costello, 2012; Beggs, 2004; Campbell-Lendrum & Corvalán, 2007; Jones et al, 2014; Raju, Kiranmayi & Vijaya, 2016). According to Campbell-Lendrum and Prüss-Ustün (2019) "the World Health Organization (WHO) has identified climate change as one of the greatest health threats of the 21st century" (p. 160). Climate change will continue to deliver weather related events such as increasingly high temperatures, extreme weather events causing damage such as storms, high rainfall, and flooding, as well as droughts and sea level rise (Bolton et.al., 2019; Jones et.al., 2014; Royal Society, 2017). In recognition of the serious threat that climate change poses, and in support of the Climate Change Response Act, 2002, and the Climate Change Response (Zero Carbon) Amendment Act, 2019, the government has implemented a Carbon Neutral Government programme to encourage activities in the public sector that work towards reducing carbon emissions.

Research on the health impacts of climate change has largely focused on infectious and communicable diseases. Despite the globally increasing frequency of non-communicable disease (NCD) mortality the need to recognise the impact of climate change on NCDs has largely been ignored. The World Health Organisation did produce 17 Sustainable Development Goals (SDGs), the subset of one (SDG3.4) being to "reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being" (WHO, 2021). However, it has been recognised by WHO that "without dramatic new intervention the Sustainable Development Goal target to reduce premature NCD mortality by a third by 2030 will fail" (Nugent & Fottrell, 2019, p. 622). Nugent and Fottrell (2019) highlight the absence of a global health institution or official public donor that prioritises NCDs. Described by Nugent and Fottrell as a syndemic, "a synergy of epidemics that co-occur in time and place, interact to produce complex sequelae, and share common underlying social drivers" (2019, p. 623); NCDs have not received adequate global donor assistance when compared to the likes of HIV/AIDs that "received 24% of global donor assistance for health in 2017. According to Nugent and Fottrell, NCDs claim far more lives but "received only 2% of global health donor funding" (2019, p. 623). This lack of assistance is in part attributed to the focus on individual responsibility of NCDs (Nugent & Fottrell, 2019). That is, "People still refer to lifestyle diseases even though there are broad socioeconomic and environmental causes of NCDs, and entire industries exist to profit from products or activities that increase NCD risks" (Nugent & Fottrell, 2019, p. 623). Narayan, Ali and Koplan (2010) similarly draw

attention to the dominant political and ideological positions which favour industry to the exclusion of health.

Campbell-Lendrum and Prüss-Ustün (2019) also emphasise that to frame exposure to risk factors that increase rates of NCDs as an individual responsibility is inadequate. Doing so serves to trivialise a structural issue that is beyond the purview of the individual to solve. Environmental exposures should be recognised as risk factors for NCDs (Campbell-Lendrum and Prüss-Ustün, 2019). For example, "worsening air pollution and other environmental exposures… have a direct and strong influence on the prevalence of noncommunicable diseases" (Campbell-Lendrum and Prüss-Ustün, 2019, p. 160). Thus, an individual staying indoors, or avoiding outdoor areas during episodes of high air pollution invisibilises the endemic climate crisis and its direct links to public health. Furthermore, the assumption that individuals can control whether they are outdoors or not assumes a level of privilege that not all populations have. As was evident in this literature review, uneven development and uneven labour market participation means some groups will be exposed at far greater rates than others.

Despite 'Indigenous' referring to a vast array of people with unique and diverse experiences, there are some experiences of commonality (Abate & Kronk, 2013). Common experiences among Indigenous people include an autonomous existence before being threatened by colonising countries, generations of oppression and a diminished political power as a result of colonisation and unique relationships to the environment (Abate & Kronk, 2013). The vulnerability to climate change is another legacy of the colonial harm experienced by Indigenous people (Green, King & Morrison, 2009; Ford, 2012; Jones et al., 2014; Veland et al., 2013). Climate change impacts can be thought of as intensified colonialism (Whyte, 2017). The ongoing patterns and legacies of colonisation centrally predicated on land dispossession and resettlement and the undermining of Indigenous knowledge continues to exacerbate vulnerability (Ford et al., 2020). The violence wrought by colonisation and enduring legacies creates intersecting structural disadvantage (Jones et al., 2014). As suggested by Veland et al (2013) we must "recognise colonisation as a continuous disaster in Indigenous Nations, and therefore treat secondary disasters such as poverty, ill health and welfare dependence as primary contributors to high climate change vulnerability" (p. 316).

Unfortunately, the tendency to focus on global averages hides the disparities between the rich and poor; in New Zealand the hidden disparity is between Pākehā and Māori. Several variables such as socio-economic status, housing and geographical placement, connections to the environment, labour market participation, disability and the healthcare system are contributing factors to the nine-year average lower life expectancy of Māori in comparison to non-Māori. Our review of literature found that when considered in light of six NCDs Maori carry a heavy burden. Māori are over represented in occupations that involve outdoor work environments. As such, Māori are more likely to have greater exposure to heat and air pollution meaning increased risk of climate affected NCDs and other illnesses.

Inter-connected with both NCDs, climate change, and Indigenous health is disability. In Aotearoa New Zealand, the 2013 New Zealand Disability Survey is the primary source of data on disability. In the He hauā Māori report (Statistics New Zealand, 2015), a disabled person is described as;

> *someone with an impairment that has a long-term, limiting effect on their ability to carry out day-to-day activities. 'Long-term' is defined as six months*

> *or longer. 'Limiting effect' means a restriction or lack of ability to perform day-to-day activities. People were not considered to have a disability if an assistive device (such as glasses or crutches) eliminated their impairment (p30).*

As noted above, people were not considered to have a disability if an assistive device such as glasses or crutches eliminated their impairment. This means that NCDs are included as a disability (a long-term condition or health problem) along with physical impairments (mobility, vision, hearing, speech), learning difficulties, and psychiatric or psychological impairments. Data from the 2013 Disability Survey shows that Māori have a higher disability rate than non-Māori and are more likely to have unmet needs (Statistics New Zealand, 2015). Twenty six percent of Māori identified as disabled in 2013. When adjusted for age, the Māori disability rate is 32 percent.

Disabled persons already encounter barriers to accessible homes. Climate change will likely further undermine the availability of adequate housing (OCHR, 2020). Poverty also reduces adaptive capacity (e.g. ability to move) and access quality housing (OCHR, 2020). Indigenous disabled may live in areas at risk from climate change such as coastal zones in the Pacific and the Arctic, and as such, are at elevated risk of exposure to emergencies (Cunningham & Sena, 2013). Disabled persons who are able to move face challenges related to mobility, the need for assistive devices and accessible transportation, finding suitable accessible accommodation, and accessing health and social services (Smith et al., 2017). Intersecting factors of discrimination related to Indigeneity heightens the risks of persons with disabilities experiencing negative impacts of climate change (OCHR, 2020). Social and economic factors contribute to poorer disability outcomes for Māori, including lower income, poverty, higher unemployment, and reduced access to education (Statistics New Zealand, 2015).

Most Māori disabled people identify as Māori first. The importance of their cultural identity, which encompasses language, whānau, cultural principles, practices, and linkages to the land through genealogy, is paramount to how they live their day to day lives in both te ao Māori and te ao Pākehā (Ministry of Health, 2018). However, Māori disabled experience discrimination and face barriers in accessing health, disability, and other services (King, 2019). Multiple systemic and structural barriers affect health outcomes for Māori with lived experience of disability (King, 2019).

In 2012, the Ministry of Health committed to reducing barriers to ensure Māori disabled and their whānau get disability information, resources and services is a key strategic challenge in supporting Māori disabled to achieve better outcomes (Ministry of Health, 2012). The subsequently enacted Māori Disability Action Plan resulted in increased uptake by Māori of disability support services, increased numbers of Māori disabled living in the community, and increased access to funding for Māori (Ministry of Health, 2018). However, there remains higher levels of unmet need for Māori disabled when compared with disabled non-Māori.

Part of the solution to improving health outcomes can arguably be found in building "more socially cohesive institutions and more communitarian, less individualistic societies" (Mooney, 2012, p. 385). Māori worldviews can contribute extensively to building such societies, while colonial and neoliberal models only serve to encumber. Despite the proclaimed 'right to health' (Barker, 1997; Zambas & Wright, 2016) there are profound disparities between Māori and non-Māori in health experiences and outcomes, exacerbated by the neoliberal health care system which is simply the latest iteration of the colonial model of health care. Preparedness should not be framed as an individual responsibility, but a collective one.

Disparities have their roots in historic and ongoing forms of colonisation (Ellison-Loschmann & Pearce, 2006), and continue to manifest as disproportionate risks to Māori health in the context of climate change. Concerns arise given the underappreciated values fundamental to Māori views of health (Harmsworth & Awatere, 2013; Harris & Tipene, 2006) that highlight relational and kincentric connections between people, the land and ecosystems (Panelli & Tipa, 2007). These complex vulnerabilities experienced by Māori in Aotearoa intersect to create a multifaceted and enduring health crisis for Māori that will only be exacerbated by climate change. Climate change will create disproportionately negative health outcomes for Māori. But the vulnerability of Māori is not experienced simplistically or linearly, thus policy planning and response should also not be simplistic, insular or linear. Just as the factors contributing to Māori vulnerability in the face of climate change can be presented in nested combinations, so too can policy response, emphasising the need for multisectoral and multi-scalar response.

DHB responsibilities, objectives and disestablishment

After the change to a Labour-led coalition government in 1999, the health sector reforms produced structural changes that reduced disconnection between policy, operations and purchaser/provider splits (Chapman & Duncan, 2007; Gauld, 2009). The Ministry of Health retained its principal advisory and monitoring roles, while funding and service-provision were collapsed into DHBs who hold both funding and service provision roles.

The New Zealand Public Health and Disability Act (NZPHD, 2000) enabled the creation[3] of District Health Boards (DHBs). Established in 2001, DHBs have overseen the delivery of health services throughout Aotearoa (Dwyer et al, 2014), while Public Health Organisations (PHOs) were introduced to improve access to services and coordination of providers (Barnett & Barnett, 2004). For the last 21 years, DHBs have been responsible for providing or funding the provision of health services in their district. Each DHB is governed by a Board of up to 11 members. The Minister of Health appoints the Chair, Deputy Chair and up to four members of the Board. The remaining seven members are publicly elected every three years. DHB engagement with iwi-Māori partnerships varies between regions.

Each DHB sets its own overall strategic direction and monitors its performance of the objectives described within the NZPHD (2000), which include:

- improving, promoting and protecting the health of people and communities
- promoting the integration of health services, especially primary and secondary care services
- seeking the optimum arrangement for the most effective and efficient delivery of health services in order to meet local, regional, and national needs
- promoting effective care or support of those in need of personal health services or disability support
- promoting the inclusion and participation in society and the independence of people with disabilities

[3] https://www.health.govt.nz/new-zealand-health-system/key-health-sector-organisations-and-people/district-health-boards (accessed 25 June 2022)

- reducing health disparities by improving health outcomes for Māori and other population groups
- reducing – with a view toward elimination – health outcome disparities between various population groups.

These objectives identify the responsibilities of DHBs to meeting the health of New Zealand citizens. Acknowledgement of their duty to "improve, promote and protect the health of people and communities", while also "reducing health outcome disparities for Māori" establishes the clear position of obligation that DHBs hold. Although no longer present on the Ministry of Health website, two objectives within the New Zealand Public Health and Disability Act 2000 relevant to climate change were noted. These points note DHB objectives to;

a. "foster community participation in health improvement, and in planning for the provision of services and for significant changes to the provision of services:
b. exhibit a sense of environmental responsibility by having regard to the environmental implications of its operations" (NZPHD,2000, s. 22.1).

These latter two objectives speak to the obligations of DHBs to be mindful of; firstly, the need to plan and adjust their services in anticipation of forecast environmental conditions produced by climate change, and secondly; not contribute to climate change inequity through poor operations or inaction.

In 2018, the government commissioned an independent review into New Zealand's health system. Conducted over an 18-month period the Review involved consultation with the health and disability sectors and interested parties. Findings acknowledged some places the public health system was performing well. The Review also noted a fragmented health system that has persistent issues when delivering equity and consistency for all New Zealanders[4]. has been recognised as the starting point for the latest health reform.

On 1 July 2022, all 20 DHBs throughout New Zealand were disestablished to become part of Te Whatu Ora - Health New Zealand. Te Whatu Ora is expected to work in partnership with Te Aka Whai Ora - Māori Health Authority and Manatū Hauora (Ministry of Health). Te Aka Whai Ora is responsible for ensuring the health system works well for Māori by:

- leading change in the way the entire health system understands and responds to Māori health needs
- developing strategy and policy which will drive better health outcomes for Māori
- commissioning kaupapa Māori services and other services targeting Māori communities
- co-commissioning other services alongside Health NZ
- monitoring the overall performance of the system to reduce health inequities for Māori

Iwi-Māori partnership Boards will have decision-making roles at a local level, and jointly agreeing local priorities and delivery with Te Whatu Ora. Iwi-Māori Partnership Boards will also be the primary whānau voice within the new public health system. [5]

[4] https://www.tdhb.org.nz/dhb/health-nz.shtml
[5] https://www.futureofhealth.govt.nz/maori-health-authority/

Summary

There is widespread consensus that climate change will have negative impacts on human health. Our literature reviews highlight the threat of climate change and its likelihood to disproportionately affect Māori and other Indigenous people. We posit that the UNDRIP (which provides a framework of minimum standards for the wellbeing of Indigenous people in the context of climate change) when considered alongside the WHO SDGs (particularly SDG3.4) provides a global argument for the need to consider and include indigenous voices (in this case Māori) when formulating climate change responses and plans.

Colonisation is recognised for its contribution to disparities that maintain historic and ongoing forms of inequity. The resulting disproportionate climate change risks to Māori health will be compounded by the proportion of Māori in occupations that involve outdoor work environments. Similar climate change vulnerability consideration has been directed towards those with disabilities. Given the known higher levels of unmet need for Māori disabled when compared with disabled non-Māori, mātauranga Māori can offer valuable strategies moving forward. Because the vulnerability of Māori is not experienced simplistically or linearly, policy planning cannot be simplistic, insular or linear.

DHBs have overseen and been responsible for providing and funding provision of most health services throughout Aotearoa since they were established in 2001. In 2018 a review of the health system began. Subsequent review findings noted a fragmented health system that struggles to deliver equity and consistency for all New Zealanders. The latest health reform, with the creation of the partnership arrangement, heralds the promise of a new public health system that will better address the persistent health inequities Māori experience.

Research design

This research was designed to focus on three DHBs located in the central region of the North Island; Waikato, Lakes and Bay of Plenty. Those same DHBs comprise three of the five DHBs that comprise the Midlands Region. Figure 1 below shows the regions of the North Island and the DHB boundaries within each of them. Of particular relevance to this report are 3 DHBs from within Te Manawa Taki (the Midlands region).

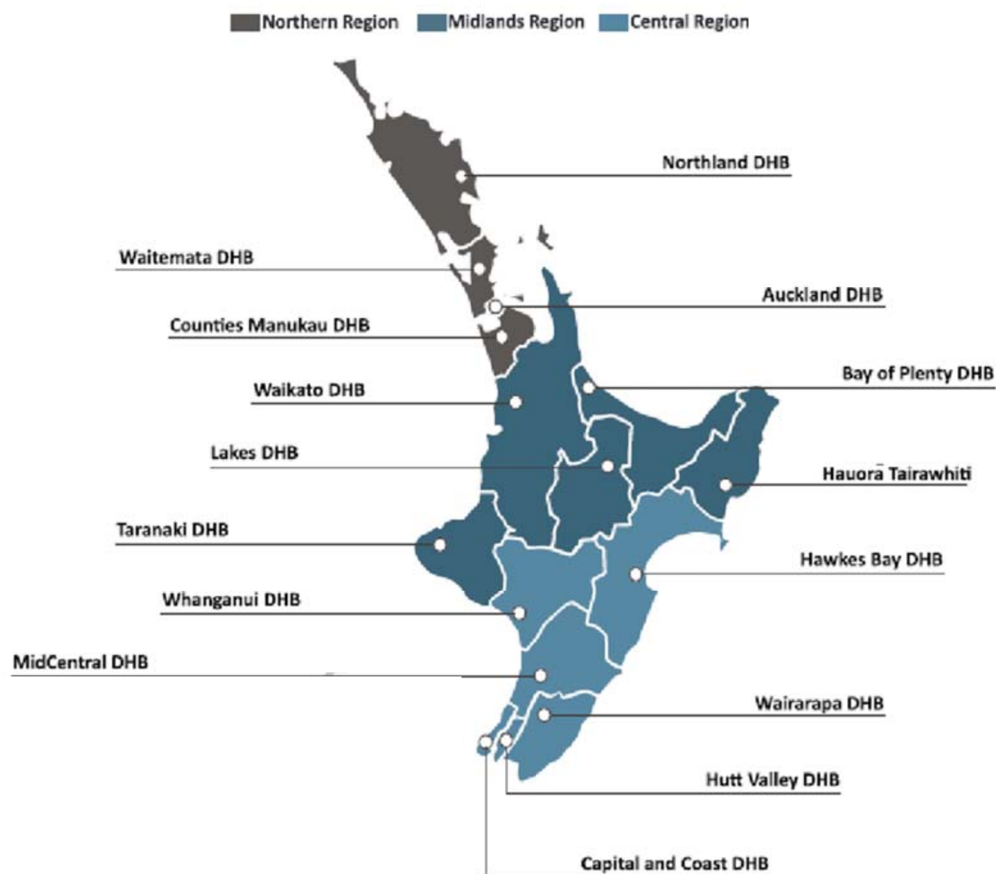

Figure 1: Three regions of the North Island and the DHB boundaries[6]

This study originally intended to only include two DHBs (Waikato and Lakes), however, Bay of Plenty DHB was later included as the host of the Public Health unit, Toi te Ora that services the Lakes DHB

[6] This is a reduction of the original image found at
http:// www.nzhealthpartnerships.co.nz/wp-content/uploads/2017/08/DHB-Map-Aug-2017-1.pdf

region. A brief description of the three DHB areas taken from the Midlands mental health network provides a brief explanation of the regions and their populations.[7]

Waikato DHB serves a population of more than 360,000 people, stretching from the northern tip of Coromandel Peninsula to south of Taumarunui, and from Raglan in the west to Waihi in the east. About 40 percent of its population lives in rural areas.

Lakes DHB is responsible for funding and providing healthcare services for the 102,000 people who live in its region. The Lakes DHB runs hospitals at Rotorua and Taupo. Other providers include primary care, private providers (dentists, pharmacists, allied health providers), Māori providers, mental health service providers and non-government organisations.

Approximately one third of the Lakes population lives in the Taupo region and two thirds live in the Rotorua region. A total of 32 percent of the Lakes population is Māori, and the Lakes region has a small (approximately 3,600), but growing, Pacific population.

The **Bay of Plenty DHB** serves a population of 200,000 on the east coast of New Zealand's North Island, taking in the major population centres of Tauranga, Katikati, Te Puke, Whakatane, Kawerau and Opotiki. It has the second fastest population growth rate of all New Zealand's District Health Boards.

For the past 21 years DHBs have been charged with the responsibility to deliver services in a system designed to ensure the health and wellbeing of all its citizens, particularly those who experience health disparities, with disabilities and vulnerabilities. The health system appears to have joined other government agencies through introducing steps to address the impacts of climate change by focusing on sustainability and mitigation, through working to reduce greenhouse gas emissions (Bolton et.al., 2019; Ministry of Health, 2019).

Cognisant of potential exclusionary processes when formulating policy, we have chosen to privilege tāngata whenua in the gathering of narratives to describe experiences of climate change considerations in health contexts. We keep those narratives in our minds as we come to understand the current policy formulation process and as we consider processes moving forward. DHBs are the "health institution" of focus for this study. In the next section, we explain how we engaged with staff at Lakes, Bay of Plenty and Waikato DHBs as the sites through which we come to understand the Māori health and climate change policy needs ahead.

Data collection activities

The aim of the *Haumanu Hauora* was to gather information about the DHB policy development system and the processes used, with particular focus on Māori responsiveness and climate change policy areas. The initial project plan involved only conducting interviews with tāngata whenua and DHB staff. However, within the first few months of the project we realised through our team

[7] DHB descriptions and population numbers taken from the website may be current https://www.midlandmentalhealthnetwork.co.nz/about-us/midland-district-health-boards/

discussions and reflexive practice that interviews alone would not give us complete confidence that we were responding to emerging questions within the project. Examples of emerging questions are:

- Do we know if any DHB has a climate change policy that considers Māori health risks?
- We know there are rangatahi passionate about climate change, where are their voices?
- What are the known climate change effects on Māori health conditions (asthma, cancer)?

Mindful of the evolving nature of our project, we organised the research into four activities. While our intention was for each activity to occur sequentially, the short timeframe of the project, the length of time involved to obtain appropriate approvals, disruptions caused by COVID-19 lockdown restrictions, illnesses and bereavements, meant that components occurred concurrently.

Activity One: Interviews

The information obtained from the interviews was used to enable the researchers to identify the activity planning, strategic direction and potential interventions that contribute to and determine how Māori perspectives are considered in policy development. The key contributions were from tāngata whenua and DHB staff.

All interviews were audio recorded and then transcribed by a professional transcription service. The transcripts were checked for accuracy by two members of the research team. The transcripts were then independently reviewed by three members of the team who then met to discuss themes. Through an iterative process, the team have developed descriptions presented within a policy framework to display the existing policy process and then identified potential intervention points to positively affect climate change policy development while also ensuring consideration and input from Māori is embedded throughout.

All participants were given information sheets (see Appendix 1 & 2) and asked to sign consent forms (see Appendix 3 & 4) prior to their interviews.

Tāngata whenua

The interviews with tāngata whenua provided our team with an opportunity to explore their experiences, views, and aspirations for their communities when considering experiences of climate change. Our discussions also covered the participants' expectations for health policy in relation to climate change. Together we planned ways in which improvements can happen; such as through planning, strategies, and interventions that could inform our policy framework.

Our objectives with the tāngata whenua interviews were to:

- identify the experiences of tāngata whenua with climate change;
- identify the aspirations that tāngata whenua hold for the health and wellbeing of members of their communities when considering the impacts of climate change;
- identify the key cultural values and traditional knowledge that are deemed necessary and useful for appropriate policy;

- discuss how tāngata whenua can provide input to DHB function, policy development and service delivery;
- identify barriers and/or gaps in how tāngata whenua have input to DHB function, policy development and service delivery; and
- identify intervention points where strategies can be planned and developed.

DHB staff

Interviews with DHB staff were principally intended for those who were involved in, or aware of, policy development and implementation processes. Their knowledge was intended to provide the researchers with information that would explore the policy systems and processes at each DHB (Bay of Plenty, Lakes and Waikato). We also wanted to understand each DHB's process for incorporating Māori health considerations in their climate change policies.

Our connections with key people and our partnership with project community collaborators at each of the DHBs helped us navigate the DHB research procedures and facilitated our recruitment at each site. Policy areas included: Māori policy and strategy; medical officers of health; consumer council representatives; patient quality and safety; and directors of different areas of health from each DHB.

Our objectives with the DHB staff interviews were to:

- identify the DHB system of policy development processes, in particular Māori responsiveness policy areas;
- hear of any experiences of including tāngata whenua in policy process;
- identify barriers and/or difficulties in the health institution policy development processes; and
- identify key intervention points where new policy ideas can be introduced and developed to implement.

These interviews contributed to a compilation of information gathered for the purpose of the research. The combined information informed our thinking and writing in regards to building a policy framework that elevates tāngata whenua voices.

Participants

The interview questions followed a line of thinking from climate change, to climate adaptation to meeting the needs of Māori in relation to climate adaptation. Questions were about DHB policy development and implementation processes to enable incorporation of Māori experiences of climate change. We know that Māori are more likely to experience negative impacts from climate change so we wish to ensure that DHB Māori responsiveness to climate adaptation brings about better outcomes for Māori communities.

The majority of our interviews were conducted kanohi ki te kanohi. Five of these were individual interviews, and three were group interviews (Group 1, N=4; Group 2, N=5; Group 3, N=4). Nine people were interviewed online in response to COVID-19 restrictions placed in the Waikato region between August-November 2021. All of the interviews were guided by interview schedules (see Appendix 5 & 6).

A total of twenty-seven interviews (n=27) were conducted over a six-month period between June and December 2021. Two participants were subject matter experts (SMEs) from outside the relevant DHB regions. The remaining twenty-five people were recruited through their locality within the three DHB areas (Waikato, Lakes and Bay of Plenty). Two thirds of the participants were Māori (n=18). The majority of these participants shared their experiences and knowledge as tāngata whenua within the relevant DHB region, while a smaller proportion commented from their dual position as tāngata whenua and a member of staff. The remaining third (n=9) were non-Māori and shared their perspective as a member of staff.

Tāngata whenua participants were involved in a range of organisations including iwi-Māori Governance Boards, Māori health service providers, iwi organisations, Māori NGOs, regional councils and mainstream health services. Some tāngata whenua participants were involved in more than one organisation, and all were involved in their whanau, hapū and iwi.

Activity Two: DHB environmental scan

In order to ensure we had a clear sense of the national level context and applicability of our findings; our team conducted an environmental scan of the remaining 17 DHBs that were not included in the original plan. Environmental scans identify trends in the environment and establish the relationships between these trends (Costa, 1995). Our intention with the environmental scan was to observe the presence or absence of Māori health and climate change policies in DHBs across the country.

As argued throughout the report, climate change poses very real risks to Māori when considered in addition to known existing health conditions that are prevalent among Māori. We have noted in our reviews the absence of Indigenous voices in climate change considerations. Recent recommendations in the Hauora report (Waitangi Tribunal, 2021) and the government's commitment to climate change in the budget (Treasury, 2022) gave us hope that DHBs would be mindful of Māori health risks to climate change given their previous recognition of poor health outcomes for Māori. The environmental scan of DHB websites was intended to give an understanding of the level of importance given to climate change and Māori health through DHB policies.

Search terms relating to Climate Change and Māori Health were taken from the Ministry of Health (Ministry of Health, 2018a; 2018b; 2019) as the organisation to whom DHBs are accountable. To ensure relevant information was recorded within the scan, certain documents were excluded. Documents that did not include information relevant to climate change or the environment and those replicated were excluded. For example, we checked the latest annual plans and strategic documents. If there was nothing noted in the latest version, we did not believe there would be policies in the years immediately prior. As such, the most recent plan was selected and examined in detail for the purposes of the scan. Exceptions were made if an old plan or strategy directly discussed climate change. The following documents were reviewed:

- any that discussed the holistic nature of Māori health with reference to the environment;
- Minutes of meetings. None were found to reveal direct action being taken to respond to climate change, and so were excluded from the scan; and
- any media releases that noted climate change action taken by a particular DHB.

Activity Three: Elevating rangatahi voice

Rangatahi were recruited to participate based on their interest in climate change, and interest in engaging with the rangahau. One of our team (a Deep South Vision Matauranga masters scholarship recipient) attended a Te Ara Whatu Flax Roots Wānanga for rangatahi interested in learning about climate justice. She met Māori and Indigenous youth who were passionate about climate change. COVID-19 restrictions were imposed shortly after the wānanga concluded, so a forum was created to enable rangatahi and Te Ara Whatu members to stay in contact. Through her continued involvement the decision to include rangatahi voice in the study was deemed important.

The process of recruiting rangatahi was organic and word-of-mouth, taking place over 4 months. Whakawhanaungatanga was built into the recruitment processes and once a relationship was developed those rangatahi interested in participating were sent an invitation email with an Information Sheet providing details. From there, a suitable time and place was organised for the first whakawhiti kōrero to take place, whether in person, or over Zoom within the COVID-19 environment. Conducting the interviews via Zoom allowed for opportunities to connect with rangatahi across the North Island. During the process of informed consent, the rangatahi were given the option to stay anonymous within the research. All chose not to be anonymous, instead working with the researcher to decide how they wished to be identified.

Five rangatahi Māori were interviewed. Each of the rangatahi Māori were wāhine (women), between the ages of 18-25 years with a passion and interest for, or had a role related to, climate change. Two interviews were held kanohi ki te kanohi (face to face), while three were held via zoom because of COVID-19 lockdown restrictions.

Activity Four: Calculating rates of prevalence

This study was not a key deliverable of the project. Due to unforeseen delays, the findings were not able to be included in this technical report and will be published separately.

The relationship between climate change and the effects on population health are becoming more widely discussed in current literature. Leveraging off the Haumanu Hauora: Strengthening health institution Māori responsiveness to climate change research project (NSC11) we will further explore the relationships between climate change and poor health outcomes for Maori with a particular focus on cardiovascular disease, asthma and cancer. These conditions are known to be more prevalent among Māori therefore, this study will be used to further understand Māori prevalence and mortality projections within the context of climate change. This knowledge will be valuable to policy planning and public health providers. We will consider key questions such as:

1. What are the patterns of prevalence of the 'six NCDs' (cancer, diabetes, obesity, cardiovascular disease, kidney disease and respiratory disease) for Māori?
2. How are hospitalisation and mortality rates for Māori patterned by other factors (e.g. deprivation, DHB of residence, age, gender, employment)?
3. What are the implications of Māori health vulnerabilities (e.g. urban/rural travel time, geographic distance)?

While Māori have been identified as a population group vulnerable to climate change, our health vulnerabilities and risks within the context of climate change have not been seriously considered or the focus of examination.

Ethical approvals

From the outset, we knew appropriate ethical approvals would be required when undertaking our research project. In recognition of our intention to interview staff across different DHB regions, we approached the National Health and Disability Ethics Committee (HDEC) overseen by the Ministry of Health to inquire whether our project reached the threshold of requiring national level approval. In August 2021, we received notification that our project did not meet the threshold and therefore did not require submission to HDEC.

Ethical approval for the main project was obtained from the University of Waikato Human Research Ethics Committee (Health) in August 2020 (2020#61). Subsequent locality approvals were obtained from Waikato DHB (September 2020) and Lakes DHB (October 2020). Ethical approval for the subsequent studies Environmental Scan (2021#51) and Rangatahi Voice (2021#52) were received in August 2021.

Investigating access to national health statistics began September 2021. An application to undertake analysis of data within the integrated data infrastructure (IDI) of Statistics New Zealand was approved in March 2022 (MAA2022-08). Due to a series of miscommunications and unforeseen delays with approval, this activity was not able to be completed within the contracted timeframe. The “Rates of Prevalence” will be completed outside of this research contract.

Results

The results are organised into three sections. **Section one** presents the narratives from interview participants merged into four themes. While the details of the rangatahi narratives will be reported elsewhere, an overview of the key areas that overlap with tāngata whenua are presented in section one. Lastly in section one, we also present DHB staff commentaries of key suggestions that would be important to consider when introducing climate change into health institution policies.

Section two presents key findings from the Environmental Scan carried out on 17 DHB websites to ascertain the extent of policy that focused on either the Treaty of Waitangi, climate change, or ideally both in tandem. A small subset of interviews complements this component of the study. While the main details will be reported elsewhere, an overview is presented in this report.

Section three explains the current policy framework in relation to Māori responsiveness in health institution services. This policy framework describes six phases; internal design, specialist input, Māori input (via Māori staff who hold clinical or managerial positions in the DHB such that the policy work becomes an additional kaupapa), committee oversight, approval and delivery. We outline each of these existing policy phases and flag some deficiencies in this process before going on to offer ways to improve the process in the Discussion.

Section One: Participant interviews

Here we present narratives of tāngata whenua within the three DHB regions and rangatahi who have been actively engaged with climate change activities. Māori have been involved in climate change action for decades (Mike Smith, personal communication, 23 June 2022). Our engagement with literature has highlighted minimal ways in which Indigenous voices have been included in climate change planning despite being recognised as those most vulnerable. Within our report we prioritise tāngata whenua and rangatahi voices to ensure their perspectives inform our work generating a climate change policy framework. The narratives have been organised into four themes; experiences of climate change, mātauranga Māori connections, weakness of current policies, and contributions to climate change policy.

Tāngata whenua and rangatahi

Both tāngata whenua and rangatahi participants shared their experiences of climate change and its impacts upon their whānau and hāpori (community). Knowledge of climate change ranged widely amongst these participants. Some had a deep understanding of the nature of climate change and how to apply it to the health and wellbeing of whānau, hapū and iwi, while others asked, “what is climate change?” Similar understandings of climate change were the impacts extreme weather events would affect the environment, waterways, marae and urupā situated on the coastline and by waterways. These events would then flow on to impact whakapapa.

Experiences of climate change

Experiences attributed to climate change impacts such as damaging storms, heavy rainfall, flooding, and sea-level rise were discussed by participants. People recounted damage to whānau homes, marae, urupā and farmland as painful memories.

In one instance, a storm surge in a coastal area had caused damage to housing, community infrastructure and a marae and urupā. In response to this event there had been action by local and regional councils to address the damage to infrastructure. Work with hapū and iwi of that rohe (region) also aimed to address the impacts on those cultural spaces, however, proactive steps were needed to prevent further damage. In conversations between the iwi organisation and the affected hapū and whanau, it was revealed that their aspirations were to protect their marae from further damage.

Changing river flows were also experienced with severe flooding, causing damage very close to the marae and urupā. Participants talked about the diversion of their local river years previously, and how that was now creating a flooding problem impacting access to the marae. These types of stories reflected the concerns of people for their people, and their frustrations;

> *What really started me was [Marae name] which is one of my marae in [hometown], down the road, 53 tipuna had to be excavated from our urupā because it's on the bank of the river and the river was eroding to the point where the tipuna were falling into the awa, due in part to erosion from dairy farms effluent, from E.coli, from a dam that the polluters didn't have to pay. (RV5)*

Changes in land use was also seen as a challenge for Māori land considering climate weather events. Environmental pressure from increased housing necessitated the installation of a new sewerage system to protect local waterways from leaking/overflow during extreme weather events. In one of those areas, issues of multiply-owned land had delayed installation of the new system. The economic impacts of these events have raised personal challenges in dealing with the damage and loss of property.

Another perspective related to land use and the environment was given with a participant's experience when harvesting flax for raranga. In the situation below, the participant has raised questions regarding observed changes to their usually reliable plantation. They suggest that more investigation is needed to determine if the problem is a result of climate change, the soil, the air, or if there had been an insect infestation;

> *… we went on a number of harvesting flax, and we noticed that the flax is different. So whether this is to do with climate change or whatever … you have the long blade of flax, and then you cut the stalk. Well, the stalks seem to have gotten longer than the actual blade of flax that we use. (TW2D)*

Climate weather events were also seen to impact food security with changing seasons affecting food growth as well as food supply chains. Reflecting on recent pandemic food-supply shortage experiences, participants talked about wanting to be less dependent on supermarkets, and exploring community gardens for whānau. Ensuring whanau had continued access to food was part of the

recognition that they were more likely to be negatively impacted through the impacts of climate change;

> *I've been actively working with some of our whānau trying to encourage our whānau to start growing our own kai, but also trying to put pressure on our land trusts who are in control of our collective land resources. (TW1)*

> *I think my one [aspiration] will be self-sustainable or localisation. So for me, if you had more people who had their own māra kai and producing their own energy, I reckon that would be like a cool thing. And for everything to be more localised, locally sourced, because a lot of our society is centralised and we rely a lot on supermarkets and energy providers. And I feel like in order for us to be more green, we need to move away from that kind of whakaaro and come back to more self-sustainable way of living, where we are less dependent on them and more dependent on ourselves and being able to provide our own food and not have to rely on someone in a different country, importing food to us. (RV1)*

Impacts on waterways and water bodies from climate change was another area that participants identified. Participants recounted childhood experiences of when whānau used to swim, play and gather kai from streams located near their whānau home.

> *That stream's gone. It's gone. The water's dried up, because somebody's probably blocked it somewhere further up … the other stream that we had ... we used all of our rotten corn and stuff, well ... There's so many houses there now, that it's just got soap suds and stuff in the water. (TW2B)*

> *Going back to [papakainga] and seeing what wasn't there that used to be, that really, reconnected with my tipuna... [learning] this is what they used to do and it all worked out. And then, now they've been forced to get rid of that. For example, they had this orchard across the way and it was by the awa and people used to go swimming there... they were telling us a story of how you don't go there now... the wairua is off... And it was just, dead trees... It hurt a lot. And so again talk about intersectionality, reconnected the climate crisis with colonisation, with just the harm that has been placed on our people from people that think that their way's best. (RV2)*

Another example was of a Māori community source for watercress that had been abundant for many generations.

> *It just dried up, so it could never be overuse, because the river... The stream used to be, you could barely swim in it, because there was just enough space. Well, I don't think it's overuse. It just suddenly went. (TW2D)*

While the immediate decline in this food source remained unknown, the changes to the environment and climate were suspected to play a role.

Another environmental change in relation to the production of pollen had been noted as having increasing effects on health and wellbeing for many whānau.

> *…what I have noticed, and I do think it is getting worse, it's become more prevalent, and that is a result of perhaps the pine, the forestry, and it's the amount of allergic rhinitis and hay fever, and that's all over the place. (TW2C)*

Health conditions were linked by participants to poor housing, whānau living in poverty and hospital admissions by loved ones.

> *… it is getting worse, significantly worse. And the babies are affected and kids are affected, and the adults are affected. And it is worse than it used to be, say about 10 years ago. Significantly worse. So that's one of the biggies. (TW2C)*

> *It would be an equal society where resources are distributed fairly, where land is owned collectively and we ensure that everyone has the right to housing, everyone has the right to food, clean water, sanitation, all those things. I think that's the Māori way of doing things, Māori values. And I think it all comes from Māori cultural understanding and the pūrākau that we have and the taonga that we have. (RV3)*

For tāngata whenua and rangatahi participants climate change and its impacts were considered from a te ao Māori perspective. Climate change effects from weather events on physical cultural places and spaces were experienced as mental, physical, emotional, and psychological health and wellbeing upon whānau. As a result of this consideration, participants identified whakapapa as a key feature of the impacts of climate change. The quotes presented below are from both tangata whenua and rangatahi participants.

> *What whakapapa am I leaving him? What whakapapa am I creating? What whakapapa was given to me? How am I improving on what our tīpuna already left for us? (TW7)*

> *The whole concept of whakapapa is like being a part of a collective and being a part of the better good, or being a good role model... I think Māori can see the future, like whakapapa extends this way as well, not just backwards, I think people talk about that and because you are thinking what is the future that I'm leaving for my moko, what is the future that I'm leaving for the people all the way down my whakapapa. (RV3)*

This whakapapa connection was linked to te taiao (the natural environment) comes and climate change.

> *I suppose with climate, that means how I interact with taiao. Because everything I do, every step I take, everything I use, is going to impact on our taiao somehow. (TW7)*

> *With our Māoritanga, our ancestors and all living things pretty much, they come from the gods and our gods are embodied in mountains and lakes and all our awa and moana... So I think that's why our connection and the links with land is really important for Māori culture because we do share that real– I feel like we get almost get that concept of kaitiakitanga from our Māori gods*

because Tanemāhuta was the kaitiaki of the forest and then Ranginui, kaitiaki of the sky... So I feel like that's why Māori had that really deep connection with the whenua because it was pretty much embodied in us and it passes through all of our ancestors and to us. (RV4)

Both groups of participants were clear that maintenance of te taiao for cultural continuity was important for the health and wellbeing of all the people involved. Weather events cause disruption to whānau and hapū functioning with loss of cultural continuity and cultural socialising activities (Awatere et al., 2021). Creating a climate change action plan that was centred within the iwi and hapū provided a clear strategy forward to address impacts of climate change and also have it anchored in the cultural kaupapa, values and principles to meet the needs of each community.

Mātauranga Māori connection

The use of mātauranga Māori to help address climate change issues was contestable amongst participants. There were those who felt that te ao Māori had the solutions for addressing climate change; others felt that it was not the fault of Māori, so those who created the problem should have to fix it.

Indigenous knowledge, mātauranga is the key for climate change. I guess because we've been here for so long and we didn't have little machines to measure the wind... Our ancestors literally just used te taiao, all the tohu around us. I think just keeping that alive and passing it on is so key and just living, living authentically… it's about growing our active practice [of mātauranga], you know? So yeah, I think just getting out, experiencing it for yourself…trying to grow that mātauranga is very important. (RV4)

Another example of Māori having the solution was recognised by one participant to iwi climate change strategic plans, grounded in their own cultural context, knowledge, and history. These documents were considered to set a strong base in mātauranga Māori for addressing the impacts of climate change. This type of strategic thinking was considered as mana motuhake in action;

… nobody would know [the hapū rohe and land], significant places, waters, better than the home people. So, there would be a huge expectation that anything to do with that area, that the iwi/hapū not only be a part of, but even lead with their own particular knowledge as well, and intergenerationally. So that kaitiaki role [is] restored and activated. That would be a minimum, I would say, of the expectation of our home people. (TW2A)

In comparison to Māori having to fix the problem, it was a rangatahi voice that most strongly argued for those who created the problem to be charged with the responsibility to fix it;

Tino rangatiratanga... Honouring Te Tiriti, He Whakaputanga, land back, just everything. When I think about systems changing, the systems of oppression need to be addressed and apologise and not just the verbal apology, apologising by actually fixing the problem. (RV2)

Addressing issues of climate need to be undertaken by members of each hapū or iwi, and tailored to the needs of te taiao, their land, their rivers or water bodies, the significant sites, and cultural spaces. Strong leadership was seen to be critical in working for positive steps to help address issues of climate change.

The use of mātauranga Māori and te reo Māori by mainstream agencies and services was considered to be an area of challenge. It was noted by participants that mainstream agencies were increasingly taking on Māori values, using Māori words and concepts in their work but they did not always know or understand the values or concepts.

> *They try and take on board Māori values, they actually don't know what the word. So the word kaitiaki, or kaitiakitanga, is the most important word. They don't know what it means. We know what it means, and we know what it means from a preservation of flax type thing or the work that we do. And the same with the water. How do you know, talking all of the time? (TW2D)*

> *We've got Te Whare Tapa Whā. Te Whare Tapa Whā is still relevant. Ki a au nei whakaaro it is still relevant today. Unfortunately, they utilise it as a tick box. That's the problem. They utilise it as an individual assessment tool. (TW7)*

One traditional Māori cultural system that had been implemented by a participant in the Māori social service organisation was Maramataka. This traditional system of living was seen as a credible prevention system to use within their organisation and service delivery.

> *[It is a] traditional system, but wholly able to be applicable today. And so what we know, because we've been working with it for a couple of years now, is you've got this... It's full-on scientific observation, okay? So it's not just the moon going around. It's this triangulation where it says when this star goes up, this is what should happen on the ground or in the trees or whatever. (TW2A)*

The participants believed that this was a Māori system that could be used in mainstream health agencies to help improve Māori health and wellbeing, however, they also had a caution around the need to protect Māori knowledge. Participants had experienced situations where Māori knowledge and language are not entirely understood and could be mis-used. A comment about internal staff capability and expectations in reference to the introduction of Whakamaua: Māori Health Action Plan were shared by one participant.

> *…[what] the Ministry needs to do, is actually look inside themselves. They cannot introduce frameworks when they don't understand the framework themselves. We're asking non-Māori to do things that they're not equipped to do. The government are asking of their own ministries to do things that they haven't been resourced to do. (TW7)*

Te Tiriti o Waitangi forms the basis of Whakamaua, the Māori Health Action Plan and participants believed that it offered the opportunity to implement Te Tiriti in practice within the health system.

> *And that's where it sits beautifully. It's not outside of health. It's very much, if your environment's not healthy and your water and that, nothing is. So, it fits really well in there. (TW2C)*

Public health service delivery was viewed as an issue for some of the participants because the services had been invisible to the community. While public health had oversight of many aspects that were important for Māori health and wellbeing such as the environment and water, there had been no relationship between Māori providers and public health. Participants had suggested a Māori Public Health Unit to better meet their needs.

While tāngata whenua participants were hopeful that a Māori Health Authority would help bypass some of the interpretation difficulties, some strong opinions were shared by rangatahi. The quotes below were in response to a query about government documents they had read;

> *The Emissions Reduction Plan is pathetic as it stands... It was all individual action, white privilege, money. You've got to have access to all these things. And there's no sense of community, no sense of honouring tangata whenua. It was sad... (RV2)*

> *My mahi with [youth climate change group] is mostly in te ao Pākehā, being policy for the government, policy for environmental organisations, trying to figure out how can we keep the government accountable to upholding tino rangatiratanga, to giving Māori voices rather than consultation… Within [our group] too we work in the international indigenous environmental space, so doing activities with Indigenous whānaunga from around the world. So for example, our whānaunga in the Arctic Circle, their ice is melting, our seas are rising so our stories are inherently connected and how can we uplift and support each other. (RV5)*

When it came to connecting to māturanga Māori, the most passionate, and least forgiving, arguments were shared by rangatahi. Perhaps it was the seasoned perspective of tāngata whenua who understood the complexity and amount of energy it takes to make incremental change, that meant they were more patient with Ministries and their strategic plans. Rangatahi passions were conveyed in their expectations for rights to be wronged immediately but those who caused the harm or damage.

Weaknesses of current policy

Working collaboratively across sectors was an area that participants believed needed improvement as the health issues they dealt with required agencies to work together to resolve issues for whanau and this did not occur. Agencies did not work with iwi or hapū either meaning broader community issues were not dealt with. However, participants had experienced greater collaboration with the COVID-19 response so they knew that cross agency, cross sector collaboration could occur to provide a whole of government approach. They wanted to see a similar approach used within the health sector to better deal with health issues. Many whanau needed help with repair to homes which required cross sectoral collaboration.

There was generally also no preparation or planning for emergencies or disasters as could occur with a climate weather event. Māori communities and health providers were often expected to respond and assist at times of need in an emergency or disaster.

> *We leave it until there's a big disaster, around the motu. Hey, who do they call on? It's always the Māori who open up the doors to house everybody. It just amazes me, but they don't go and talk to them beforehand. (TW2B)*

One participant described the regular community forum held to facilitate sharing of information from across their region.

> *…there's also a strategic planning forum, where there are other councils throughout the region, mainly focused on [the] region, there's the regional council, and there's pretty much DHB representation on that. We have had NZTA on board for that … the police have been on there, but there's other agencies that are on that, so some NGOs … that's a forum where people will come along, talk about whatever projects that may be of interest to all those representatives. (TW3)*

This type of forum where iwi and hapū can also attend, participate, contribute and be heard could provide a whole of rohe in which sharing of information and addressing issues can contribute to positive change.

Two additional themes regarding policy weaknesses are presented. The first spoke to the importance of planning. Participants felt that DHBs need to work with Māori *before* a crisis occurs in order to develop appropriate plans and policies that will help communities to be proactive in their preparations. Prevention and forward planning comments were aligned with our research value that action before a crisis was preferred. Responding to health needs during a crisis contributed unnecessary additional stress for Māori DHB staff and Māori community health service providers. Participants agreed that Māori groups and providers working together added strength to their efforts.

> *…to clearly define what the issues are and how we practice and how we engage … and if we do that with force, and not to say that we all come together and stay there … it's dynamic … it comes out depending on the kaupapa. But when we're able to do that in unison then it's actually unbeatable. (TW2D)*

The second weakness discussed pertained to the ways in which Indigenous voices are ignored or silenced. Examples of both tāngata whenua and rangatahi speaking up as a voice for Māori on environment, climate change issues while advocating for change were viewed negatively by people in decision making positions.

> *There's some really, really good advocates for that, but they don't have a voice. They go to council, and they go wherever, and they look like activists. Well, but their voice is sort of being heard. (TW2D)*

> *Going into policy spaces, what does that mean? It means we get to be a little bit cheeky sometimes, it means we get to push the boundaries on things. It*

means asking why, just being a pesky brat, being like "Why? That's not good enough, tell me why you've come up with this solution and tell me why we can't use this solution". It's really being able to push the boat because I mean from that too comes privilege in that I don't have responsibilities, like I don't have to look after my whānau, I just have to look after myself. I've got a roof over my head, I've got kai in the fridge, it's acknowledging all of that too so I am not scared that I'm not going to have my needs met if I push the boat in policy spaces like that. (RV5)

This whakaaro by the rangatahi participant highlights the value of rangatahi within decision-making environments who can advocate strongly without fear of push back. This rangatahi participant considers their contributions as a privilege of rangatahi to push boundaries as they have a family safety net.

Frustration at meetings that do not provide meaningful opportunities for feedback, nor a process for ensuring that contributed information to a council or health institution has a real process through which information is fed back to the person or community who took the step to speak up and seek change.

Well, in place for Māori communities, actually to have a voice, to be listened to, for health institutions to actually take notice of what Māori communities have to say. (TW3)

A suggestion offered by tangata whenua was presented as a metaphor of a bus.

one of the [iwi] guys says, well we want to drive the bus. We don't want to be a passenger. (TW2D)

Designing the bus was the final addition to this idea.

Participants' suggested contributions to climate change policy

Suggestions for climate change policy reflected the experiences of the participants and ranged in scope from those based in mātauranga Māori, examples of hapū and iwi already undertaking work to address climate change, to those that were practically oriented in relationships between health institutions and iwi, hapū organisations.

The first suggestion stemmed from the participant's experiences of COVID-19 level 4 lockdown when the closing of many aspects of life created a general slowing down of life. To the time when businesses and factories were closed, travel was limited and these changes corresponded with observed effects on the environment and the birdsong returned. The second comment proffers the notion that people need to reconnect with the environment.

Now we saw so many positives happen where factories had to stop. That had a massive effect on our climate, climate change, and what was happening. I believe it had a massive effect on our environment. (TW7)

What I'd like to see first and foremost for New Zealand te taiao is tino rangatiratanga, mana motuhake, constitutional transformation. We need to stop talking about electric vehicles and construction industries and start talking about land back. Literally it's as simple as that, because land back isn't just 'land back', it's bringing whānau to the whenua, it's helping restore the relationship between humans and the environment. Because we're so detached from the natural environment. (RV5)

This participant also acknowledged the positive impacts on health and wellbeing from slowing down and suggested changing emphasis and taking the opportunity to support people to take time, consider reducing trading hours to create more free time.

We look at our late-night shopping. All of those things, if we start to actually create policies around people, we'll notice those things. Those are the policies I'd like to see. Supporting people to be, and to be one with each other and with their environment. (TW7)

Whakapapa, cultural heritage and knowledge were key aspects to be considered when planning to address climate change and impacts on marae and urupā. Health institutions need to be aware of the impact of the steps needed to resolve issues created by damage from a climate weather event. The whakapapa, the history, the knowledge for future generations becomes part of any negotiation that will determine the future of a marae, urupā or other culturally significant site.

Strengthening whakapapa can also help to build whānau connection to te taiao and therefore to climate change. The example was provided by one participant who used the PWC scheme where staff are paid for one-days voluntary work per year. Applying that to other organisations where staff could be given time off to work in the community or on their hapū land to give back to the environment.

Imagine if they were able to say to every single one of their workers, "For five days a year, we're actually going to send you out and plant trees along those awa, along those streams to increase the health and wellbeing of the environment." (TW7)

There could be added mental health benefits if staff of participating organisations would work in their own rohe – assuming their iwi or hapū organisations had active environmental activities in operation.

… you imagine the lot of those whānau being able to go out into their own whenua and work. Their own marae area around the awa that's connected to their whakapapa, to be able to give back to that. Imagine what that would do for their mental health, for their Mauri, for their own connections to their space, as well as the taiao. (TW7)

There were examples of iwi and hapū undertaking environmental work in their area, some re-establishing the vibrancy of the awa and others directly addressing impacts of climate weather events.

Environmental activities for one hapū aimed to re-establish their connection to the awa, work to restore eels, watercress restoration to sustain their whanau, as well as for Poukai. Another goal was to continue to restore their land and forest areas through planting and had started to develop a plant nursery. These activities were part of the overall hauora for the hapū and fitted in with the Papakāinga development, health and wellbeing, and education activities.

An iwi organisation had been working with hapū where marae and urupā had been damaged by river flooding and loss of riverbank. Work had already begun to address the physical and structural issues, however, there had been no contact with health institutions in terms of directly addressing health and wellbeing of hapū members. The onus for making that connection was not clear although one participant felt that the health institution had the responsibility to initiate the conversations with iwi, hapū and Māori community health providers to establish relationships and consider the health impacts for Māori communities. Recognition was given to potential barriers for iwi, hapū organisations and Māori community health providers.

> *Too busy. So not enough capacity for Māori health providers or iwi authorities. They're only pretty much a small entity compared to a DHB, which has got many staff. We find that at council, we're a huge organisation but when we're talking with other iwi authorities or trust boards, they've only got so much they can give, advice. (TW3)*

Participants recommended that when working on any climate change activities, there was a value in having a champion - someone who could lead the policy progression and provide leadership during consultation. This person could then be the conduit for any work or development with other organisations such as health institutions. Conversely, health institutions need to recognise that iwi and hapū organisations have work underway in the climate change field and need to be open to working alongside to prepare for and address impacts of climate change.

Tāngata whenua participants explored the nature of relationships with health services to understand how climate health adaptation needs might be addressed in health institution policy. The experiences of some iwi/Māori governance board representatives had been challenging. There was an expectation Māori input into DHB governance would reflect partnership. However, tāngata whenua participants highlighted some weaknesses, particularly in relation to steps towards climate adaptation.

Strategic Positioning

Some participants talked about their role in the health sector and more recently part of that role had been to contribute to health institution documentation. However, it was pointed out that while the DHB had highlighted their commitment to support Māori input there was a gap in that responsibility.

> *DHB Board supports and advocates for the application of mātauranga Māori. Evidence-based, healthy built environment principles dah, dah. But it doesn't mention anything about our role as iwi governance in that mahi. (TW2B)*

Participants acknowledged that a lot of change was occurring (at the time of the research) in response to COVID-19 with vaccination mandates, the focus on improved health outcomes in terms

of the health system and an increasing focus on Māori equity in health services. As a result of these recognised changes, the demand on the health roles that the participants held remained high even though their capacity was noted as limited. An example provided centred on what participants called the "new health phrase – co-design" (TW2D). The view of this new idea was just another form of ineffective 'consultation', that is, being told what was going to happen.

> *I think that the co-design phrase is probably going to change too, because co-design is still where they have come up with something, and oh well, let's see how we can do it and co-design it. (TW2B)*

Co-design was a strategy that participants had experienced that they thought was a "buzz term" and which they approached with some scepticism. Previous co-design experiences had not been very collaborative. Observed health institution staff developing an idea and reporting to participants expectations of how the idea was going to work created a negative perception of co-design. Tāngata whenua wanted to actively participate in developing ideas and making those ideas relevant and appropriate to their communities.

According to one group of participants, there is a group of voices that are overlooked, or under-recognised, for their valuable contribution to climate change. As rangatahi, their perspectives were formed as those who have to survive any climate change failures.

> *…young people have the ability to see the world differently, to see all of its possibilities, all the possibilities that the future holds because they still have the rest of their life to live. And I think we aren't held down by the way things are, the way things have always been. I think we have that ability to challenge the status quo and say hey, can we do things differently, because we haven't lived in these systems for that long. We have fresh eyes to the world around us, we're like "Why is it like this? Why is it like that?" That natural curiosity and questioning. (RV2)*

> *If you think about it, rangatahi are the people who are most likely going to experience the severity [of climate change], if it does go really bad and would experience it more than the people who are older than us. But on top of that, our [future] family is going to go through with that kind of hardship. And that's not necessarily something that you want. That's what really got me into looking on to our environment and ways to protect it. (RV1)*

Although studies do show rangatahi Māori participate less in traditional colonial democratic systems (Tawhai & Cheyne, 2009), further research explains that "youth disengagement from traditional political systems does not equate to youth apathy or lack of interest in politics" (Tawhai, 2015, p. 511). Moss (2021) when discussing rangatahi Māori leadership, draws on literature that describes youth leaders as key stakeholders of their communities that challenge action in the pursuit of needs. Youth perceived as leaders is not commonly acknowledged but, as Tawhai (2016) explains, rangatahi leadership in te ao Māori isn't an unfamiliar concept. Furthermore, Tawhai draws on the examples of predominant leaders in Māori history such as Whina Cooper, Apirana Ngata and Ngā Tamatoa. Those whose activism and roles in political change began during their time as rangatahi. To close the section on tāngata whenua and rangatahi interviews we present a whakatauākī by Dame Te

Atairangikaahu that speaks to the importance of paying attention to the voice of rangatahi. This whakatauāki echoes the sentiment that if we are to ignore our rangatahi we are going to be stuck in the past.

> *Kei te huri te ao, ki te kore taatou e aro atu ki te rangatahi me oo raatou whakaaro, ka noho taatou ki roto i te poouri i ngaa raa o nehe (Tapiata et al., 2020, p. 188)*

DHB staff

The level of attention within this report to DHB policy development means that we have purposefully been brief with our presentation of their interview findings.

It was acknowledged that the level of knowledge and understanding about climate change (mitigation and adaptation) among DHB staff was low (DHB6C; DHB6D). Knowledge amongst DHB staff generally centred around ideas of sea level rise, changing weather patterns and seasons, and increasing occurrences of extreme weather events. These events were understood to have impacts on different parts of the community that would require management.

DHB staff suggested key areas that were important to consider when introducing climate change into DHB policy. The following is a summary of points raised and suggestions made.

- Introduce climate change mitigation and adaptation was a challenging process that needed to 'fit' into the organisational structures, processes, as well as the personal stance and knowledge levels of staff.
- Introduce education and training about climate change is necessary (DHB6C), although self-education could also be encouraged by joining groups such as Ora Taiao (SME1).
- Acknowledge that those involved in climate change policy development have their own jobs/roles and tasks. Thus, addressing the impacts of climate change in health is over and above existing roles (DHB6D).
- Policy staff have previously encountered resistance to change and suggested that focusing on the 'why' was an approach to addressing such resistance; "… tell them… why wouldn't you? ... given them the evidence behind it and how this is really important and a priority, and then make them feel like that this is the best thing and why wouldn't they? Because they then have to argue why they would" (DHB6D).
- There was a positive response to the promotion of the health institution as taking on a social responsibility. Participants provided suggestions for climate change policy implementation, all utilising social responsibility messaging to ensure a coherent communication strategy. Staff encouraged proactively addressing the impacts of climate change on Māori communities and designing an appropriate climate mitigation and adaptation response. It was thought that with positive messaging and communication, health institutions can convey the societal benefits.
- It was thought that incorporating climate change and building institutional knowledge about climate change in policies would be best across all aspects and operations of the institution - at governance and executive levels, in clinical areas, in administration processes and in operational policies and processes. This would support the social responsibility messaging.
- Climate change messages need to be approached with caution so as not to overwhelm staff with large amounts of confusing information. Regular communication will assist staff to

manage changes in process-related activities. To increase active participation in policy acceptance among staff, training and education about climate change was thought to be a useful step in raising the general level of climate change knowledge.

- A progression through small, practical steps focused on activities that had meaning to staff members was advised. For example, initially starting with a focus on waste disposal from offices or departments using a well-known Māori culturally based programme, Para Kore. This programme had been used at many marae and was thought to be well suited for introduction to health institutions. The programme has resources and information available to support the introduction of a waste management strategy within organisations. For some participants the introduction of Para Kore at their work sites had highlighted the use of bins for food waste, plastic, and general rubbish to encourage staff to separate out their waste items (DHB1; DHB3). This would be seen as a tautuutu (reciprocity) approach of the DHB in the community (DHB1). The use of the Para Kore programme incorporated the existing expectation of getting rid of the use of plastic cups in government agencies that had been a government recommended activity (DHB3).
- Staged steps can then build on these initial ones to broaden mitigation and adaptation activities to consider other larger areas of operation that need attention. One example given was to consider the possibility of sending food waste from the hospital kitchens to a composting facility rather than sending it to landfill (DHB1). This could then open the possibility of establishing hospital gardens to make use of the compost or contribute the compost to existing community and/or commercial food suppliers in the local community (DHB1). These steps can be linked to the focus of social responsibility through encouraging healthy nutrition, healthy lifestyles, and mental wellbeing, along with contributing to the institution's zero carbon goals.

- It was suggested that to help incorporate aspects of climate change mitigation or adaptation into policy, policy writers need to have some understanding of climate change to know the questions to ask, and to know the people to talk to for the development of policy.

Other suggestions included:

- examining fleet cars with a shift to environmentally friendly vehicles
- preparing and planning for damaging weather events to ensure access to and availability of health services
- increasing collaborative work with agencies from other sectors to address social issues that impact upon the health and wellbeing such as housing, access to health service and transport
- building relationships with Māori communities to facilitate appropriate and responsive health services.

In order to understand the policy process within a health institution, it requires understanding the relationships and interactions that occur to facilitate policy development (Hallsworth, 2011; Palfrey, Thomas & Phillips, 2012). By understanding the relationships and interactions of the policy process, we can identify areas in which to make improvements. Leadership within a health institution can influence policy development decisions (Department of Prime Minister & Cabinet, 2021). Participants suggested that most of the policy directives for the DHB had arisen through the Minister of Health's Letter of Expectation to the Chair of the DHB Board/Commissioners and requirements set out in the Crown Funding Agreement (Nationwide Service Framework Library, 2019). These directives are translated into instructions for the DHB Annual and Strategic planning documents that

form the basis of policy development within the DHB. The directives describe the nature of outputs and outcomes expected from health services. Policies aim to ensure the implementation of the directives.

The internal policy development process described by DHB staff conveyed a linear process (interpreted and presented in Figure 2 below) with regards to the development and implementation of any policies. All policies are directed through and by the Policy Committee who oversee the development of new policy, review and revise existing policy and monitor policy effectiveness. We noted six distinct phases: internal design, specialist input, Māori input (via Māori staff who hold clinical or managerial positions in the DHB such that the policy work becomes additional kaupapa), committee oversight, approval and delivery. This process is guided by health institution internal policy guidelines (Waikato DHB, 2016) and templates that dictate the steps to be undertaken when a policy, procedure or guideline is developed.

A recently introduced draft Sustainability Policy (DHB staff, personal communication, August 2021) provides an example of policy development that informs the basis of our framework. During staff interviews we heard how early commissioning conversations entailed extensive consultation with specialist knowledge holders who shaped the draft policy. Those conversations helped shape the final policy that was approved for implementation. According to staff, the process of developing this policy illustrated clear leadership and the importance of key people involved throughout all stages. The following phases explain the policy development process as it was described to our research team:

Section Two: Environmental scan

The following is a presentation of the patterns observed through the process of the scan. More detail can be found the student thesis upon its completion later this year.

Regional similarities

There were a number of common climate change actions identified across DHB regions:

- Those DHBs that appeared more established in their climate change work were registered with Toitū Envirocare. Toitū Envirocare programmes provide support for measurement and reduction of emissions for DHBs.
- Most DHBs were introducing electric vehicles into the fleet cars. This work was partially funded through the Carbon Neutral Government Programme.
- DHBs often presented their work in the climate change space by discussing emissions reduction. DHBs also listed awards and recognition they had received for their work to reduce emissions and move to more energy efficient options. These DHBs were taking good steps to reduce their impact on the environment. However, what was missing from the documents was a discussion of how reducing emissions, and moving to more efficient methods of energy and transport, would impact the communities accessing healthcare and those most vulnerable to the impacts of climate change.
- Some DHBs were partnering with community groups through waste initiatives, had plans to work closely with local Iwi to identify the needs of Māori in relation to climate change and

assess climate change risk for vulnerable populations. This goes some way towards acknowledging the importance of Indigenous practices as a response to climate change. It would be beneficial to apply unique approaches to meet the needs of a particular community.

These positive climate change actions provide scope to build on and create a unified response to climate change across regions. However, there was also stark variation in the climate change action presented on DHB websites. This emphasises a lack of cohesion and direction within the health sector in its response to climate change.

Regional variation

The environmental scan highlighted a lack of cohesion in the DHBs response to climate change across regions. There was also variation in the response to Māori health as a part of climate change policies or strategies. Inconsistencies lead to disparities and inequities across regions as the DHB's response will have a direct impact on the health and wellbeing of people in the community. The positive examples of Māori responsiveness identified above can provide a guide for those DHBs with less developed climate change policy, especially those which fail to consider Māori health as integral to climate change policies.

A limited number of DHBs had dedicated sustainability plans or strategies in place. Those that did have specific documents were most often DHBs that had a Sustainability Manager or working group dedicated to sustainability at the DHB. It appeared that the employment of a Sustainability Manager was related to a more cohesive DHB response to climate change. A dedicated Sustainability Manager was able to work at a strategic level to enact sustainability policies. However, this was not consistent across all DHBs. Some DHBs had staff that volunteered to support the area of sustainability. Volunteer groups often worked on activities such as campaigns for staff to use active modes of transport, recycling initiatives and small garden projects. This variation gave an indication of the level of commitment from a particular DHB.

For one participant, the values of the DHB at times opposed addressing climate change. The participant described their frustration at the values of the DHB in the way that they operated, causing high levels of waste and energy consumption.

> *so frustrated by opening up packets upon packets of this pristine packaging, throwing it away, using this gadget which costs $200 for like five minutes, and then throwing it away. You know what it's like in a... I assume you know in the health setting, we used so much stuff, consumables, chemicals, electricity, water. (ES3)*

'Sustainability' was commonly used to describe DHB responses to climate change. However, the language used within documents was variable and would change depending on the year that an annual plan or strategy was produced. The words 'climate change' were not often used within any DHB documents. DHBs would rarely overtly highlight that 'climate change' would have an impact on health, and it was even less common that a direct link would be made between 'climate change' and Māori health.

For those working in the climate change space, additional effort was required when navigating the culture of the DHB to demonstrate the importance of climate change. Participant three described the way that they used the financial benefits to introduce climate work to the DHB.

> *You couldn't mention climate change in meetings with ELT and stuff like that. It was a taboo word because they were climate change deniers, and it would just infuriate them. "Don't mention it." "Right, okay." So what we did talk about was we talked about efficiency. What's good for the environment is good for the finances. What's good for the finances is good for the planet. What's good for the planet is good for health. (ES3)*

Further financial benefits to encourage action with DHBs were proposed. Emphasising savings through energy efficiency was considered a simple yet effective climate change initiative.

> *And actually, if you look at electricity and energy savings, there's quite a bit of money that can be saved, so if you want to put a few scores and wins on the board, then it's quite good to look at those areas as well. (ES1)*

The extent to which DHBs had developed specific sustainability policies was not always consistent. DHBs that were more developed in their response to climate change had sustainability policies in place. Whereas those DHBs that appeared less developed had no specific policy, did not mention sustainability or climate change in any of their annual plans or strategies, or did not have any relevant documents appear on their webpage. It is possible that these latter DHBs do have sustainability policies in place, however an environmental scan of their websites did not produce any evidence of this.

Response to Māori health across regions

The extent of discussion pertaining to Māori health needs, partnering with Iwi Māori, and recognising the importance of Māori knowledge in addressing climate change demonstrated variation in the responsiveness to Māori health across DHB regions. Few DHBs identified Māori health needs or assessed these in relation to climate related risk. Clearly outlining Māori health needs in relation to climate change would support, not only the DHB response, but also communities accessing these policies to understand the way that Māori health will be impacted by climate change.

Kaitiakitanga was referred to by some DHBs to describe their level of responsibility in caring for the environment. For example, Hawkes Bay DHB includes the following statement in their Sustainability Policy[8] "HBDHB recognises its responsibility to tāngata whenua to act together as kaitiaki in the active management of our operations in an environmentally sustainable way." (p. 1). There is some recognition here of the important role that tāngata whenua have as kaitiaki. The discussion of kaitiakitanga within policies would be enhanced if more DHBs committed to an active role in

[8] Hawkes Bay DHB (2018). *Sustainability Policy* http://ourhealthhb.nz/assets/Uploads/Sustainability-Policy-OPM121.pdf

supporting Māori to be kaitiaki of the environment, while also doing their part to reduce the impact on the environment.

Māori health concepts within Climate Change documents

We found that within climate change policies Māori health concepts were absent. Other than reference to Wai Ora as a part of He Korowai Oranga strategy, there was no reference to Māori health frameworks. Wai Ora represents the link between Hauora and the environment that Māori live in. The health of the natural environment is intrinsically connected to Hauora. Therefore, it was expected that Wai Ora would be included in climate change policies. However, when discussed within DHB policy, Wai Ora seemed misunderstood and did not reflect the intrinsic relationship between the natural environment and Māori health. Rather, Wai Ora was discussed in relation to immediate physical environments, such as including green spaces inside hospitals, creating safe environments for staff, or the need for dry and warm homes. These elements are important aspects of health, however the absence of the natural environment as a key part of Māori health is a significant gap within the documents in the scan.

The 2020-2023 Whanganui DHB Strategy[9] started with a mihi to acknowledge the Whanganui River as a significant part of the area "I am the river and the river is me". This presents an opportunity to create a link between the Whanganui River that has been given legal personhood and the health of the people living in Whanganui. The DHB has the chance to work with stakeholders such as Iwi or the Council to protect the River in order to support health. However, this opportunity to centre Māori concepts of health seems to have been missed. The strategy is focused on equitable outcomes, integrated care and partnering for community well-being. Despite this, any reference to Wai Ora within the strategy is focused on the immediate environment.

Identification of the link between Climate Change and Māori health

The environmental scan demonstrated very little recognition of the impacts of climate change on Māori health, or indeed how the DHB would respond to Māori health needs while ensuring the protection of the environment as an important aspect of Māori health. It was rare for the natural environment to be discussed within DHB documents. There were limited instances where DHBs had connected the environment and Māori health. However, these did not consider the flow on impacts of climate change. For example, one DHB discussed the use of waka ama to connect Māori people to the environment and therefore improve their health. This initiative provided an example of a DHB considering the natural environment as a part of a person's mental and physical health. Using waka ama within the mental health and addictions service demonstrates a more holistic approach to mental health care. However, when considering the environment in this example there was an

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[9] Whanganui District Health Board. (2020). *He Hāpori Ora: Thriving Communities*. Whānganui. Retrieved from https://www.wdhb.org.nz/assets/Thriving-Communities/Thriving-Communities-2020_compressed.pdf

opportunity to go further and create a response to climate change. For example, this DHB could have worked alongside councils and Iwi to ensure the areas that waka ama takes place are protected in light of its health benefits.

Enhancing DHB initiatives to respond to Māori health and Climate Change

Māori health initiatives were discussed within DHB documents. Most often, initiatives were not developed to respond to the impacts of climate change. However, these Māori health initiatives presented a holistic way of addressing health needs within which the environment was considered and therefore links could be made to climate change. It is these examples which DHBs could draw on to strengthen their response to climate change impacts on health.

The MidCentral DHB 2005 Respiratory Service Plan[10] stated that environmental factors including air quality are risks for respiratory disease. The document also acknowledges that Māori experience asthma at higher rates than non-Māori, leading to inequitable respiratory outcomes for Māori. The plan describes targeted prevention and screening initiatives based within marae and community settings. Furthermore, the DHB planned to work across sectors and partner with Horizons Regional Council to support policy that reduces air pollution and supports improved housing initiatives. Although there was no direct link made between climate change and Māori health within this document, responses to inequity, respiratory health and the impact of the environment were all discussed as aspects of this plan. Therefore, there is potential for the initiative described to respond to Māori health and climate change in the context of respiratory health.

Similarly, an initiative responding to Māori health needs was identified within the Taranaki DHB Public Health Unit Strategic Plan[11]. The planned initiative addressed environmental health, Māori health and whānau, hapū and iwi community development. It focused on working with the Parihaka Community and was discussed under the Wai Ora principle of He Korowai Oranga. The specific focus of the initiative was to work with the Parihaka community to enhance sustainable infrastructure. Specifically, to support Parihaka to identify sustainable water supply and waste water systems. The initiative addresses a specific environmental health need, while also working to improve Māori health. However, similar to the previous example, the link is not made between the way that climate change might impact Parihaka, or the intrinsic link between Māori health and the environment.

These two examples represent common features throughout Māori health initiatives identified in the scan. Māori health policy, strategies and plans respond to the needs of Māori using a more holistic approach, however, there is a need to elucidate the interconnectedness of climate change and Māori health. Even without intent these sorts of initiatives can work to respond to climate change and improve health access for Māori. Māori health initiatives provide the scope to meet the

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[10] http://www.midcentraldhb.govt.nz/Publications/AllPublications/Documents/Respiratory-Service-Plan-November-2005.pdf

[11] Taranaki District Health Board. (2017). *Taranaki Public Health Unit Strategic Plan*. Taranaki. Retrieved from https://www.tdhb.org.nz/misc/documents/PHU_Strategic_Plan.pdf

needs of multiple facets of health, ensuring healthcare equity while responding to climate change. Recognising and responding to the intrinsic link between the environment and Māori health could strengthen the alignment between climate policy and Māori health policy.

Despite a clear lack of climate change policies, the tāngata whenua and rangatahi interviews describe ways that climate change is impacting Māori communities. The impact of climate change on Māori cultural values illustrates the absolute need to address climate change in a way that is responsive to Māori health.

> *Because the urupa for the marae is, again, right down on the... Right by the sea. So we couldn't go to the marae anyway. We were allowed to go to the urupa, but we thought actually, no. In a big storm, you'll get driftwood on the outside of the urupa now. So the whānau decided to take that into account and created a new urupa back up on the farm. So that's kind of a couple of things. (ES2)*

> *It's for Māori sites of significance. Like I was saying, our urupā and these kinds of things tend to be particular places, and our marae sites. It's kai. It's kai access to kai and wai sovereignty. So, yeah. It's kind of everything that we are a part of, just usually not in that space. Well there wasn't even a space that long ago, really. (ES2)*

Despite the negative impacts on cultural values as a result of climate change, Māori cultural values were discussed as providing strong guidance for addressing the issue of climate change in the future.

> *Mātauranga Māori will play a big part for our people in the future, because we already had those systems. Well, that's the same out at Awahou It always used to be abundant with watercress, but now you'd be lucky if you can get anything. (ES2)*

Closing comments

Interview findings and environmental scan data suggested that sustainability was primarily focused on areas such as waste, procurement, energy use, transport and water management. As with many of the DHB responses, these key areas were primarily motivated by Government responses and legislation regarding climate change. The focus areas listed above were important responses for DHBs to reduce their impact on the environment. However, they displayed a focus on measurable outputs rather than responses that focused on the needs of the community.

Implementation of sustainability initiatives were at times mentioned in interviews and DHB website documents, however did not appear to be consistent across DHBs. Examples provided through interviews created an understanding of how climate change initiatives within DHBs could be strengthened to address multiple needs, such as equity, climate change and health. Alongside the use of Māori health strategies like He Korowai Oranga, there is potential to develop Climate Change Policy that aligns with the needs of Māori health. By ensuring DHB Climate Change Policy strives to support Māori health, DHBs could take a step closer to reaching the overall aim of Pae Ora, Healthy Māori futures.

The environmental scan demonstrated difficulties in layperson access to DHB climate change policies, as well as multiple gaps in the way climate change policy responds to Māori health. There was significant inconsistency in policy across regions, and the policies identified failed to capture the significant health impacts that climate change will have for Māori already experiencing health inequity. There is potential for Māori cultural values and strategies to lead a positive shift in policy, if DHBs recognise the importance of a holistic approach to the issue of climate change and health.

Section Three: The current policy process

This section presents a summarised description of the current policy process within DHBs. The information provided has primarily been informed by our interviews with DHB staff. While specific names of positions may vary across DHBs, the general process was noted as common for all. We describe here the six phases of policy implementation within a DHB setting before making suggestions for improvement in the following sections (in the Discussion).

Phase 1: Internal design

Generally speaking, this is the phase when the need for a policy is determined. The decision-making process about the initial development of policies was not clearly distinguishable amongst participants. They also noted that policy had been drafted only to be told one was not needed; to instead follow standards or guidelines for staff. Despite frustrating previous experiences, there was general agreement amongst DHB participants that the flexibility of policies to be developed as and when needed within the different departments, units, or work areas was useful.

Those generally charged with writing policies were members of staff that did not have roles related to writing policy. This meant that policy DHB writers were not trained or experienced. There appeared to be no clear process or recommendation guiding staff about the knowledge or skills needed to write policy. However, the research team obtained documents that provide guidance in the development and management of policies (including procedures and guidelines) that identifies key personnel (such as Document Owners or Document Facilitators) as key to managing and having responsibility for progressing a policy (Waikato DHB, 2016). Responsibilities of these types of personnel are the development, review, and monitoring of the policy. They are fundamental to ensuring that the appropriate informants and advisors are included in the policy development process.

Phase 2: Specialist (including technical or interagency) input

This phase of the policy development process highlights that different departments, units and work teams (including Public Health) can develop policy with input sought from those within their own specialty area. While each speciality area can utilise their knowledge and experience to shape policies, we recognise the need to value the contributions from those with different worldviews, experiences and as likely stakeholders impacted by policy change. While specialist knowledge and expertise is vital for policy and can ensure a compelling argument is made, consideration of equity is

essential. The inclusion of Māori equity or Treaty relevant information was not consistent, and Māori policy staff often had to add this retrospectively at later phases.

Phase 3: Māori input

While there had been some steps to improve processes to include Māori in health institution policy, there were calls for more commitment to equity and Te Tiriti o Waitangi. Within their Crown Funding Agreements, DHBs are obliged to “reduce health disparities by improving health outcomes for Māori” (Waitangi Tribunal, 2019, p.61). This expectation is supported in the Operational Policy Framework of the Ministry of Health (2022). In order for health institutions to meet their obligations of partnership under Te Tiriti o Waitangi and to achieve Māori responsiveness, input from Māori staff is required. However, not having input into policy development is an ongoing issue for Māori staff.

Iwi/Māori governance boards have enabled a pathway for Māori input to DHB operations. However, the complex dynamics of relationship management, interactions and sharing information from Māori communities through the iwi/Māori governance boards to the health institution Executive was not straightforward and that affected the effectiveness of this input process. There were key barriers that hindered the flow of information from the iwi/Māori governance boards such as low Māori staff numbers to support information use, poor understanding among non-Māori staff about equity and Te Tiriti o Waitangi, and resistance to Māori staff involvement in strategic policy work.

Māori DHB staff maintained that input was an area of concern that needed attention. Existing policy development did not have consistent processes to ensure Māori input. At the planning phase, Māori responsiveness can be incorporated but this is not a consistent nor widespread approach. While Māori staff felt strongly about meeting the obligations of partnership, the absence of a requirement undermines Māori input. Māori staff did note an ability to contribute at the Policy Committee stage, however during interviews, staff shared their frustrations of policies bypassing Māori input before being submitted to the Policy Committee. Māori staff were hopeful that the implementation of the Ministry of Health’s (2020) Whakamaua: Māori Health Action Plan and embedding of new equity strategies would reduce resistance to Māori input.

Māori staff talked about demands placed upon them, often with short notice, to review draft policy documents. Expectations to ensure Māori input and for Māori to offer strategies to address any gaps was especially stressful on the small pool of Māori staff. These expectations created workload and time management tensions. Furthermore, health institution policies cover multiple areas. In order to effectively contribute to policy development, Māori staff need to have a firm understanding of different areas of the health institution. Until more Māori staff are employed, the pressure will not be relieved.

Phase 4: Committee oversight

The Policy Committee usually comprises staff whose work on the Committee is additional to the duties related to their formal role (ie. the role they are employed to undertake, such as Clinical Director). Two types of formal roles on the Committee include a Director and a Policy Coordinator.

The Director aims to improve policy effectiveness, and the Coordinator manages and monitors policies. The Coordinator has oversight of all institution policies and guidelines.

The Policy Committee has recently established the role of a facilitator to oversee the development of a policy, to support the policy development process and to improve the quality of policy. Each new policy developed has a Policy Facilitator allocated. The Facilitator is charged with ensuring there is input from key parties in the policy development process to overcome the situation of one person working in a silo to develop policy (DHB6D). Because the position was so new at the time of our interviews, staff were uncertain about how successful the approach would be. Thus far, the new approach signalled greater cohesion through the policy development process and there is hope that "it becomes part of governance, part of the organisation" (DHB6D).

Those tasked with writing policies within health institutions are not necessarily experienced policy writers and thus required support and guidance in their work. Members of the Policy Committee provide feedback, guidance, and suggestions to ensure a high standard of writing was maintained. Policy Writers are given an opportunity to present and discuss their draft policy with the Policy Committee. Any changes, improvements, and additions were made at this point (before proceeding to the Approval phase). Health institution policy guidelines stipulate expectations within draft policy documentation. The inclusion of guidelines, standards, procedures, protocols, monitoring steps and evaluation are standard. Once policy documentation is submitted, Policy Committee members determine the robustness of evidence and research supporting the draft policy, the measures and/or tools for monitoring and relevance, as well as consider the policy's appropriateness for improving Māori health outcomes.

Phase 5: Approval

Before final approval, Policy Writers and Document Owners may work to address any recommendations for revision. Once amended, the revised policy is resubmitted to the Policy Committee as part of its formal approval. However, not all policies are created equal. Any policies relating to governance and the whole institution require approval by the Board/Commissioners and/or Executive Leadership Team. Others can be approved by the Policy Committee and forwarded to health institution management. Once finalised and approved policies are disseminated through internal systems for implementation. Approval for Public Health policy was provided by the Medical Officer of Health.

Phase 6: Delivery

Participants suggested that the implementation of policy could be more effective than it is. Once policies are available through the organisational intranet, staff are able to utilise them as needed. As stated in the policy guidelines (Waikato DHB, 2016), staff take responsibility for acquainting themselves with the policies. Relying upon staff, their availability, motivation and desire to learn about policies leaves implementation vulnerable. Not all staff are equally interested in organisational policies. Furthermore, it was suggested that a high level of staff turnover contributes to poorer policy implementation. Despite those in leadership positions remaining relatively static,

and possibly changing only during a restructuring process, participants highlighted that policy implementation could be slowed due to accessibility issues for new staff. It was indicated that the size of DHBs, with over 8000 employees, present a challenge to effective policy implementation.

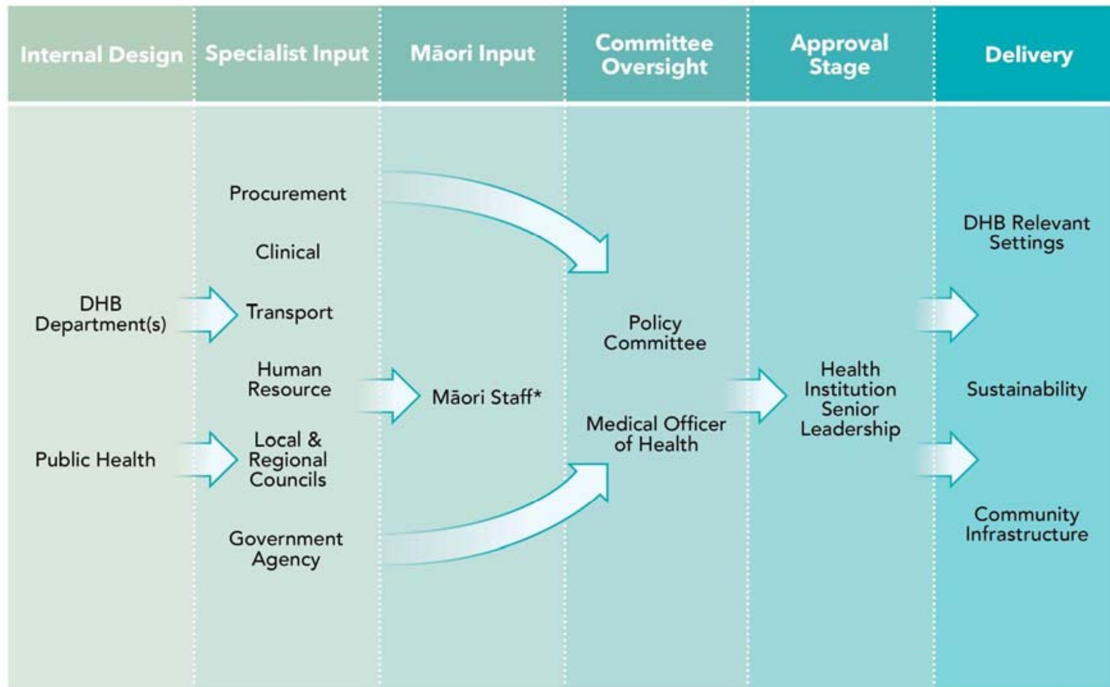


Figure 2: The existing policy process as described by DHB staff

Discussion

In this part of the report we draw from all of the information gathered and build on the existing policy process to present a policy framework that is representative of a more effective policy process through which to introduce climate change, mitigation and adaptation into policy and operations.

The focus here is to take a fully refined ideal policy framework and consider key intervention points. These intervention points act as pathways for addressing Māori health needs in climate health. Our observations are at the fore of making wider considerations to the Pae Ora Healthy Futures Act and the implications given the changing health structure. To conclude the discussion, we consider the need for a broader review of health infrastructure, the necessity to build relationships with iwi, hapū and whānau Māori, and barriers that might hamper the implementation of our recommended policy framework and intervention points.

Three stages of policy development

Given what we have heard from DHB staff regarding the existing policy process and from tāngata whenua about the relationships with the DHB there are some clear gaps which fail Māori. To begin to address these gaps we present an ideal policy framework (see Figure 3 below) that builds on the existing policy process reported by DHB staff. In the ideal policy framework, we have included the six phases of the internal policy development process described by DHB staff under three overarching stages of policy development. That is, we have identified three distinct stages, commissioning, refining and monitoring, within which the six phases of internal policy development occur.

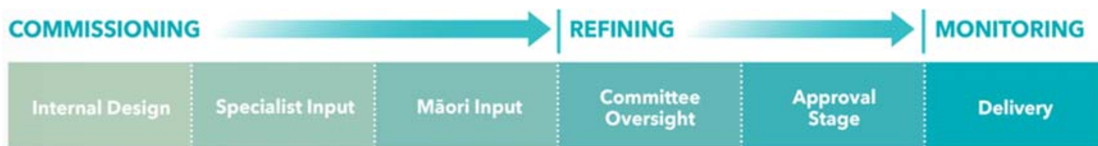


Figure 3: Introduction of three stages

Commissioning is the first stage of the policy development process within which the internal design, specialist input and any Māori input occurs. Committee oversight and the approval phase form the refining stage. Finally, the monitoring stage is made up of delivery/implementation, however, with an additional phase of evaluation (see Figure 4 below). The evaluation phase was not identified as part of the existing policy process but is a key part of delivering reflective and appropriate policy and as such we have developed it as part of the ideal policy framework.

Figure 4:Refined policy process diagram that includes an evaluation stage

Ideally, Māori input into the policy development process will be included in all policy phases, especially at the commissioning stage. In the current policy process framework there is a demonstrable lack of consistent Māori input. Though Māori input is considered in the existing policy process, it is often excluded, with specialist input progressing to the committee oversight phase immediately. Sometimes there is a retrospective addition of Māori input. However, these inconsistencies deliver health policy that is not conducive to equitable and effective health outcomes for Māori.

Commissioning Stage

The Policy Project (Department of the Prime Minister and Cabinet, 2021) identified commissioning conversations as essential. With that advice in mind, we consider that the health institution policy process of identifying a Facilitator to manage policy development will provide an important coordination role. The importance of commissioning conversations at the outset of policy development ensures the following can be considered: context and purpose; resource and funding requirements; any benefits, disadvantages or risks; and the potential impacts (both intended and unintended). These commissioning conversations enable risk management planning. Three key groups need to be included in the commissioning stage (see figure 5).

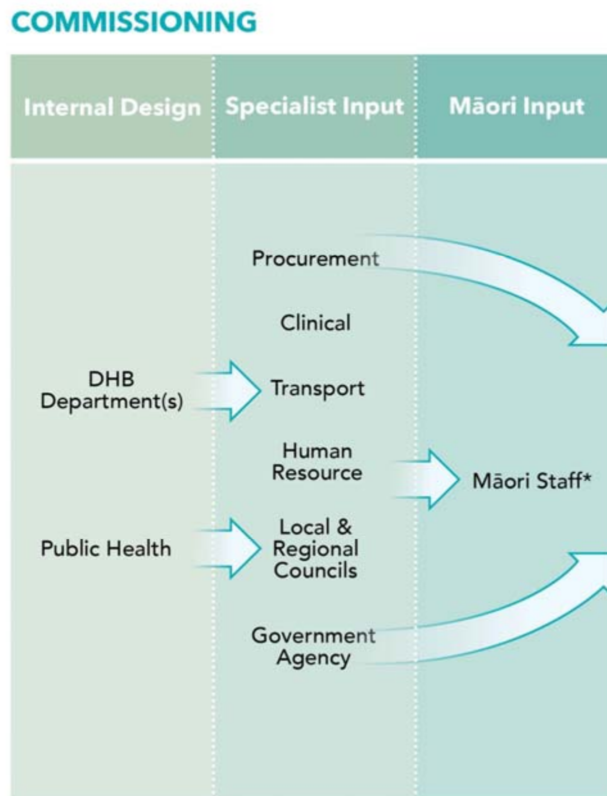


Figure 5:Identification of key elements of the Commissioning Stage

An appropriate commissioning stage at the outset will support policy development as well as clarify any financial and resourcing factors relevant for policy implementation (Department of the Prime Minister and Cabinet, 2021). The introduction of a policy commissioning phase will provide a clear signal of an intent and, with appropriate checks, will ensure that the necessary factors are considered to make a policy effective. Introducing Māori responsive climate health adaptation to the health institution policy process will involve consideration of decision-making factors, climate adaptation, Māori health delivery and outcomes, as well as the social determinants of health. Consideration of these four areas in a commissioning stage of policy development clearly sets out the expectations for all new health institution policy. Within each of these areas there are questions that when answered will complement the specialty knowledge for the area or department in which the policy is being developed (to be expanded on below).

Refining Stage

The challenge of incorporating cultural values and concepts into policy will take time and continuous effort to achieve. Recognising that success will not be obtained in the first or possibly fourth attempt, means recognising that refinements will need to be part of the ongoing implementation of a policy cycle. While the first step in policy formation is the commissioning stage, in alignment with the need to modify, adapt and edit policies before 'approval', we suggest the importance of a refining stage. Within the refining stage efforts to ensure processes are responsive to contemporary agenda while being cognisant of both historical influences and future context are essential. In reflecting upon research, Smith (2012) argued that decolonising methodology encourages researchers to reflect and question the knowledge they learn. More specifically, the purpose is to ask questions and learn to locate where the research perspective comes from, such as who is producing the knowledge and whose knowledge and voice is being ignored (Smith, 2012).

In recognition of the ongoing commitment needed to ensure relevance and appropriateness of policy, we conceptualise the need for ongoing cycles of policy refinement and monitoring.

Figure 6: Cycles of interactive policy evolution

Monitoring Stage

The monitoring stage is important because it enhances the value of evaluative work by assisting the development of a framework to evaluate the work being done (De Boer, 2001). This stage provides the opportunity to reflect on decisions almost immediately after they have been made. In doing so,

evaluations can be specifically planned to target areas in need of attention. Monitoring and evaluation are considered critical components to achieving better outcomes (WHO, 2010). That is,

> *the monitoring and evaluation framework shows how health inputs and processes (e.g., health workforce and infrastructure) are reflected in outputs (e.g., interventions and available services) that in turn are reflected in outcomes (e.g., coverage) and impact (morbidity and mortality) (WHO, 2010, p. viii).*

For Indigenous communities the inputs need to be grounded in an Indigenous worldview to ensure that the outputs and outcomes achieved reflect the particular health and wellbeing of that community.

Evaluation has evolved in response to the influence of social and political agenda (Mathison, 2005). While the funding, focus and orientation tend to be highly informed by political tides (Scriven, 2001), the importance of evaluation as a tool for enabling scrutiny against proposed plans and outcomes remains (Friedman, 2005).

Documentation guiding health institution services for Māori set out the fundamental elements to be used for monitoring and assessing the effectiveness of the relationships with Māori communities and the nature of the health responses to address Māori health climate adaptation needs. However, there needs to be a rigorous and consistent application of such guidelines in an evaluation phase in order to meet those needs.

As set out in the documentation, achieving Pae Ora (healthy futures for Māori), includes Mauri Ora (health individuals), Whānau Ora (health families) and Wai Ora (healthy environments). However, Boulton and Gifford (2014) identified there is no “one-size fits all” or single approach to work with Māori whānau when seeking to achieve whānau ora, as whānau goals are tailored to address the variety of need. It is likely that Māori community health climate adaptation needs will also vary as the situations for each community reflect their history, circumstance, location, and economic base. In the initial stages, identifying climate change, climate adaptation risks to be planned for and addressed, needs to take these community characteristics into account. Developing goals to be achieved with milestones and outcomes identified can contribute to measures of achievement.

In light of our observations of the current policy process and the need to incorporate stages that enable inclusion of evaluation and Māori voices throughout, we have conceptualised a refined policy process (Figure 7). A high level of input is required at the commissioning phase; from the internal design as well as specialist and Māori input. Having these voices at the commissioning phase will ensure that diverse experiences and goals will have been considered before policies arrive on the desk of the Policy Committee. The level of importance given to Māori input is highlighted by removing previous options that went around Māori staff. By only having one exit point, the level of importance to ensure Māori inclusion is secured. With the addition of evaluation into the monitoring phase, we have considered key demonstration areas that will be relevant to climate change policy areas and beyond.

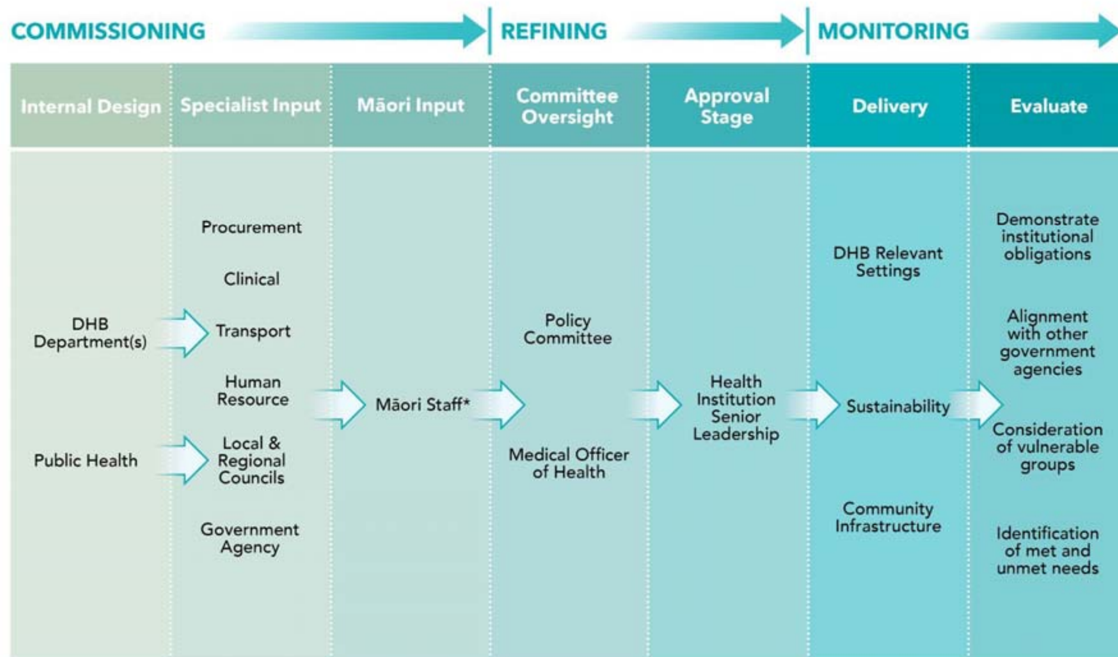


Figure 7: Refined policy process

Now that a clearer and more robust policy process has been determined, some consideration needs to be directed towards the people who will be involved. Our interviews with staff from different DHBs identified the types of positions and roles that could be adjusted to fit into the refined process. Our interviews also revealed that many currently in the policy relevant roles do not have the knowledge or training to understand policy development and refinement. Because no one mentioned evaluation and monitoring, it is clear that training will be needed in that area as well. As such workforce development in the policy and evaluation areas will be important.

Within DHBs there are several positions of responsibility that can adjust to include the policy process. Examples of these familiar positions can be found in the five rows of people in the policy, sustainability, leadership, medical Māori (internal or staff) rows. New to this process, and essential are the addition of the Māori (external) and Vulnerable groups members (see Figure 8 below).

	Commissioning	Refining	Monitoring
Policy	Policy Writer Policy Advocate	Policy Coordinator Policy Committee Chair	Policy Facilitator Policy Committee Member
Sustainability	Sustainability Officer	Sustainability Manager or Coordinator	Sustainability Leadership
Leadership	Iwi Māori Council	Executive Leadership	Director of Māori Health
Medical	Medical Officer of Health Nominee	Medical Officer of Health	Medical Officer of Health Nominee
Māori (internal)	Māori Health Team Member	Māori Equity Coordinator Māori Equity Strategy	Māori Strategy & Research
Māori (external)	Iwi / Tāngata whenua	Iwi / Tāngata whenua	Iwi / Tāngata whenua
Vulnerable Groups	An SME* on the relevant group issue(s) – can be internal	An SME on the relevant group issue(s) – can be external	An SME on the relevant group issue(s) – can be internal or external

*SME = Subject matter expert

Figure 8: Examples of people involved at different policy stages

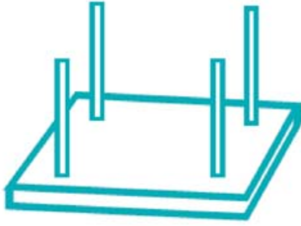
Now that the policy process has been refined and key people who can be involved throughout the process identified, our team has focused on identifying key intervention points that will enhance the policy process even further.

Policy framework intervention points

Here we consider how the introduction of climate change, mitigation and adaptation into policy and operations can be accommodated. Identified as 'intervention points' within the ideal policy framework, we suggest pathways for addressing Māori health needs in climate health.

The key intervention points draw upon the current policy process that has been identified as well as the views of both DHB staff and tāngata whenua participants with regards to climate change policy. Here we offer factors that can positively influence the introduction of Māori health outcomes into climate change policy. Five areas are presented as intervention points that can be inserted into the ideal policy framework; ensuring foundation alignment, enhancing access to care, engaging with vulnerable communities, building capacity and capability and demonstrating institution obligations.

A. Ensure foundation alignment



Ensuring foundation alignment is centrally related to having an effective commissioning stage of policy development. In this stage of policy development, we have suggested that it is imperative to consider decision-making factors, climate adaptation, Māori health delivery and outcomes, as well as the social determinants of health. Consideration of these four areas in a Commissioning phase of policy development clearly sets out the expectations for all new health institution policy.

Decision-making factors

There are some general administration type questions about the policy development process that aim to ensure the reviewer of the policy works towards greater cohesion of the policy in line with all other Māori responsive climate health adaptation policies. The factors to cover here include:

- What is the role/interests of those commissioning this policy?
- Identify if this policy is for governance, operational, or administration?
- What are the benefits and risks to Māori for this policy?
- Does this policy have a Facilitator who will oversee a policy process?
- How has climate change (mitigation, adaptation) been considered?

Climate adaptation

People we spoke to were unfamiliar with climate change literature and policies and thus did not understand the difference between mitigation and adaptation. One of the first tasks for health institutions, and their staff, is to determine whether the organisation is working towards mitigation or adaptation. From there the policy can be situated appropriately. The Health National Adaptation Plan Synthesis report (Bolton, et.al., 2019) highlights some key aspects of adaptation. Bolton et al (2019) suggest that;

- adaptation is a process of adjustment to actual or expected the effects of climate events,
- adaptation seeks to moderate or avoid harm or exploit beneficial opportunities,
- health adaptation can be equated to prevention,
- adaptation a key component to reduce risk by means of climate policies in a health context (p.6).

Mitigation on the other hand covers the steps taken to address the causes of climate change such as reducing greenhouse gases from activities in the health sector (Bolton, et.al., 2019. p. 6).

Climate health adaptation decisions need to consider the impacts of climate change on Māori. New and existing policies are accessed for their contribution to both meeting current need and preparation for likely increased need. (Policies related to health institution preparation for climate adaptation would be referred to the infrastructure and service policy development work to meet the climate health adaptation needs of Māori patients and whānau.)

- Does this policy relate to climate mitigation or climate adaptation?
- Does this policy relate to health institution preparation for climate adaptation? (Refer to Health Institution preparation)
- Does this policy relate to climate health adaptation where impacts involve dealing with an injury or existing condition or illness?
- Does this policy relate to climate health adaptation where a weather event has impacted on a Māori community leading to public health issues?
- In considering the policy under review – how well do the staff (in the area related to the policy) understand climate change, mitigation, and adaptation in relation to Māori responsiveness? Is there a need for training in climate change? Is there a need for training in the role and place of Te Tiriti o Waitangi?

Māori health delivery and outcomes

A shortage of Māori staff and high expectations to respond or contribute to policy requests places undue stress upon Māori staff. While the points here are to ensure a base of equity is threaded throughout the policy, non-Māori staff can and should be able answer them:

- How does the policy respond to legislation/Treaty of Waitangi obligations?
- What are the implications for whanau, hapū or iwi/Māori governance?
- Are there relevant mātauranga Māori or Māori models that can be utilised?
- How will this improve Māori health (e.g. unmet needs, access, treatment, outcome)?

Social determinants of health

Introducing checks with Māori patients/whānau was a suggestion made to better target the social determinants of health and ensure that indicators of need could be followed up and addressed, thereby contributing to health treatment and improved health outcomes for Māori. The disadvantage experienced by some, including Māori, means that the impacts of climate change will disproportionately have adverse effects on Māori health and wellbeing. By including a focus on the social determinants, any referrals can be considered from the outset of policy design.

- What social determinants of health are relevant to the policy?
- How have pathways to health and wellbeing been included?
- How does the policy ensure Māori climate health adaptation needs be met?
- Is there a referral pathway to appropriate supports (e.g. Whānau Ora)?

B. Enhance access to care

Indigenous people are disproportionately experiencing the negative impacts of climate change (Abate & Kronk, 2013; Wildcat, 2013; Nursey-Bray et al, 2020), despite generally contributing little to emissions (Abate & Kronk, 2013). As Parker et al (2006) put it, “Indigenous peoples are the “miner’s canary” of global climate change for the rest of humanity” (p. 1) (see also Nakashima, Rubis & Krupnik, 2018). Accounts of Indigenous vulnerability are widespread in the literature, accounting for Indigenous people from all around the world (Ford, 2012; Abate & Kronk, 2013; Neef et al, 2018;

Jones, Macmillan & Reid, 2020; Ford et al, 2020; Smith and Rhiney, 2016; Parraguez-Vergara et al., 2016; Gautam et al., 2013; Green et al., 2012, Beer et al., 2013, Green and Raygorndetsky, 2010; Berrang-Ford et al, 2012; Hovelsrud & Smit, 2010; Craighead & Yacelga, 2021). This literature recognises the disproportionately heavy burden of health, and other, impacts that Indigenous people will carry as a result of climate change (United Nations Department of Economic and Social Affairs, 2009; Ford, 2012; Jones et al, 2014; Royal Society of New Zealand/Te Apārangi, 2017; Climate Change Adaptation Technical Working Group, 2018; Neef et al, 2018; Jones, Macmillan & Reid, 2020; Ford et al, 2020; Peters & Schneider, 2021).

Health, as well as access to healthcare, can be linked to socioeconomic deprivation (Ellison-Loschmann & Pearce, 2006; Lee & North, 2013). Socioeconomic deprivation only partly explains health disparities (Ellison-Loschmann & Pearce, 2006), nevertheless, it is a key consideration given that increased mortality and morbidity rates are associated with increasing deprivation (Ellison-Loschmann & Pearce, 2006).

Inadequate specialist and healthcare services at local and regional health facilities necessitates long distance travel for rurally-located patients (Stephens & Waldegrave, 1997; Kiro & St John, 1997; Masters-Awatere et al., 2019). Māori who live in urban environments, have less distance to travel for health care services, but may be facing economic challenges that are presented by living in the higher cost environment (Brewer, Pearce, Day & Borman, 2012; McKinny, 2006; Reid, Cormack & Crowe, 2016). Both of these situations contribute to the cost burden Māori carry (Masters-Awatere, 2017; Masters-Awatere, Murphy, Rimu, Helmhout & Cormack, 2020).

While some Māori communities have the capacity to provide evacuation and support centres for whānau, offering shelter and food, following flooding and other weather events, many Māori communities operate with limited means. Tāngata whenua participants identified that the resourcing and positioning for Māori communities can be reflective of the status of their Waitangi Tribunal claim settlements. Not all Māori communities have submitted a claim to the Waitangi Tribunal, however, for those that have completed their claims and settled, they are more likely to have access to some resources. The differences can impact upon the community’s ability to address climate adaptation health needs.

The deepening climate crisis generates specific impacts that will exacerbate the already disproportionately negative health impacts on Māori. These disparate health outcomes have not spontaneously emerged, but rather have been foreshadowed by existing inequities. In collaborative partnership these climate change events can be proactively prepared for by enhancing access to care. As an intervention point, enhancing access to care becomes part of the commissioning stage and ensuring the appropriate questions are being asked, however it should also be a key reflection in the monitoring stage of the policy process.

Beyond the policy process itself, enhancing access to care is an intervention that necessitates consideration of the wider health institution preparedness. Determining an institution’s preparedness for adaptation to climate weather events while ensuring continuation of health service

delivery to Māori and other vulnerable groups is essential. Participants suggested that a review of the infrastructure is necessary.

Health institution infrastructure covers a number of areas: buildings, heating, lighting, ventilation, maintenance, office space, equipment, information technology (IT), water supply, waste disposal/waste management (including biowaste), drainage – storm water/sewage, roading, car parking, and grounds maintenance. Assessment of an institution's ability to remain operational during and following a climate event warrants consideration of inclusion. Preparing facilities and infrastructure to be robust and withstand storms, rain events, flooding, and/or increasing temperatures to ensure services continue to be provided to Māori and other vulnerable patients whose health is more likely to be exacerbated by climate events is fundamental.

Reviewing infrastructure implies taking a proactive approach to planning, assessing risk and determining the likelihood of damage and disruption to infrastructure during a climate event. For example, questions can be asked, such as, will buildings remain weather tight in a storm, sustained heavy rainfall, or be impacted by flood waters? Will buildings be damaged by high winds, or have adequate cooling methods to withstand high temperatures to maintain safe environments for treatment of patients and staff work areas? The emphasis here is on ensuring the continuation of health service delivery for Māori and vulnerable groups who are at a greater risk from those same climate conditions. A formal climate change risk assessment tool is still to be developed. In the meantime, the National Climate Change Risk Assessment Framework (Ministry for the Environment, 2019) and the National Climate Change Risk Assessment (Ministry for the Environment, 2020) can provide guidance. However, it is incumbent upon health institutions to proactively work towards identifying health risks from the impacts of climate change for all populations of their community, including Māori communities.

C. Engage with vulnerable communities

It is recognised that Māori are particularly impacted by climate change and are already experiencing distinct challenges (King, Penny & Severne, 2010; Climate Change Adaptation Technical Working Group, 2018). Māori are enduring specific vulnerabilities spanning most social structures in the context of Aotearoa. Māori experience high rates of economic hardship, with just over half of Māori considered economically deprived (King, Penny & Severne, 2010; Miner-Williams, 2017; Walsh & Grey, 2019). Economic insecurity and deprivation substantially hinder capacities to respond to climate change impacts or seek health assistance (Ellison-Loschmann & Pearce, 2006; Lee & North, 2013).

Access to adequate housing can be related to socio-economic status but is also a separate issue driving vulnerability for Māori in the face of climate change:

- Māori experience decreased rates of home ownership compared to non-Māori (Houkamau & Sibley, 2015; Goodyear, 2017).
- a large amount of Māori land is remote.

- Māori experience restricted access to finance and tend to be located in areas with low investment in infrastructure resulting in increased exposure to climate hazards (Ministry for the Environment, 2001; King, Penny & Severne, 2010; Kukutai, 2013).

Māori have strong cultural, social and economic connections to the land and natural environment (King, Penny & Severne, 2010; Watene, 2016; Tassell-Matamua, Lindsay, Bennett & Masters-Awatere, 2021), creating a unique set of vulnerabilities as te taiao comes under threat due to climate change. Māori labour market participation also contributes to vulnerability to climate change impacts. Māori are overrepresented in low skilled occupations, which includes labourers with outdoor work environments (Jones et al, 2014; Ministry of Business, Innovation and Employment (MBIE); Hikina Whakatutuki, 2017). That is, Māori are more likely to be employed in work environments with greater heat exposure and air pollution causing increased risk of NCDs and other illness (Jones et al, 2014; Borg & Bi, 2020).

This makes it vital that vulnerable communities are engaged in and contribute to health institution planning and decision making. Given our finding that there is, at best, inconsistent Māori input into the existing policy process, engaging with vulnerable communities is a key intervention point. Although Māori staff were sometimes consulted in the early phases, or retrospectively in the refining stage, the process as a whole was not set up to consider and meet the broader health perspectives and needs of Māori communities. This engagement should be particularly pronounced in the commissioning stage; however, every stage should be replete with engagement with vulnerable communities, particularly including vulnerable Māori.

This intervention point proposes systematic engagement with Māori communities by health institutions to methodically gather accounts of risks from climate health adaptation in preparation for climate weather events. Beyond this, health institutions should be engaging with Māori in partnership so Māori communities can determine risks and solutions. This information can be used in partnership to plan and design appropriate responses for those communities.

To support engagement with Māori communities, health institutions need to commit to establishing relationships with Māori communities. Initially, this requires commissioning and developing the necessary policy to ensure that funding, resourcing, and personnel are sufficient to do this appropriately. In recognition of the limited capacity and capability in some iwi/Māori communities, health institutions need to support and resource the processes to establish relationships with the communities. It is imperative that health institutions acknowledge that there are multiple Māori life realities and these need to be incorporated into the community relationships to ensure that iwi, hapū and whānau are supported to ensure that those who have become disconnected from their whakapapa relations do not miss out on access to climate health adaptation services.

Establishing relationships with Māori communities needs to be guided by fundamental principles of respect, trust, and transparency, with a goal of improving Māori health outcomes. Factors that need to be considered in building relationships processes between health institutions and Māori communities include:

- Decisions about the department, team or unit that has responsibility for establishing and maintaining the ongoing relationships with Māori communities recognises the importance of leadership in managing and maintaining these connections;

- Relationship pathways be guided by a kaumatua, or someone in a position based in the health institution who has relevant cultural knowledge, skills, and existing relationships with the local Māori communities. This role is essential and has a number of functions from setting the tenor and grounding for the relationship building, avoiding cultural mishaps, ensuring appropriate parameters in place for ongoing interactions, and is culturally correct;
- Ensuring that Māori staff from the health institution play a role in determining the purpose and pathways for the ongoing relationships with iwi/hapū/Māori communities to identify Māori health impacts from climate adaptation and the health institution responses are clear; and,
- Ensuring that Māori staff are involved in the establishing and maintaining of relationships with Māori communities. With tacit cultural knowledge, Māori staff will provide support for members of Māori communities in ensuring the climate risk assessments and responses to climate adaptation health need are appropriate.

D. Build capacity and capability

The need to implement climate change as core business across health services to build capacity and capability to strengthen leadership and delivery is an intervention point that is pertinent to the entirety of the policy process. Building capacity and capability will strengthen all phases of policy development, in turn generating more effective policy outcomes. Climate change was reportedly not well understood by health institution staff and participants emphasised the need for strategies to help to increase knowledge and understanding:

- Each health institution develops their own climate change plan that leads to the inclusion of climate change and the adaptation steps needed into all aspects of health institution planning, documentation, processes, and function. The climate change plan would be required to set out milestones to be achieved within a timeframe that can then be linked to Key Performance Indicators (KPIs). This will then set expectations, outputs and outcomes that are measurable and achievable to demonstrate adoption from the top echelons of the organisation through all levels of staffing. These same expectations would also be included in service contracts. It was suggested that HR staff utilise templates to enable staff to ensure that climate change features in all documents.
- Climate change needs to be made as core business for health institutions so that it sits on the organisation's website, is dominant in publicity material, is contained in all Human Resource documents, employment contracts, processes, and features in KPIs. Making climate change messaging part of business ensures that staff know they need to deliver on this and informs the general public about the health institution's leadership role in climate change actions.
- Build climate change into training and development for all in-house programmes to build capacity and capability across the health institution staff. This would require that Māori

climate health adaptation needs are included along with all other information about climate change, mitigation, adaptation, and sustainability in every programme delivered.
- Encourage the development of climate change funded projects that could be set up as part of health institution workforce development. This suggestion could become a strategy to fit into future climate change health risk research and be developed to focus on Māori climate health adaptation needs.

E. Demonstrate institution obligations

There is a growing recognition that Māori are particularly impacted by climate change and are already experiencing distinct challenges (King, Penny & Severne, 2010; Climate Change Adaptation Technical Working Group, 2018). Climate change will exacerbate existing inequalities between Māori and non-Māori. Multiple factors intersect to create the present conjuncture that defines both Māori vulnerability and resilience (King, Penny & Severne, 2010). Different whānau, hapū and iwi will have different capacities to respond (King, Penny & Severne, 2010). However, legacies of colonisation, have systematically eroded Māori political, sociocultural and economic systems that have often gone unrecognised or undervalued in today's society. With the current socioeconomic standing being defined in part by a loss of resources, Māori are known to experience high rates of economic hardship (King, Penny & Severne, 2010; Miner-Williams, 2017; Walsh & Grey, 2019). According to King, Penny and Severne (2010) "with some 52% of Māori regarded as economically deprived" (Statistics New Zealand, 2007). Based largely on household incomes (and high unemployment) this figure reflects to a large degree the limited financial capacity of Māori families to respond to everyday issues" (p. 102) let alone have sufficient resources to prepare responses to climate change threats in advance.

The Waitangi Tribunal has found that Māori are systematically limited by and viewed negatively in the health system (2021) that is "patronizing, paternalistic, and racist" (Smith, 2020, p. 335). The health care system in Aotearoa has been based on colonial Britain's ideologies on medicine, science and care, marginalising mātauranga Māori (Came, Herbert & McCreanor, 2021; Came, McCreanor, Haenga-Collins & Cornes, 2019; Masters-Awatere, et al, 2019; Prussing & Newbury, 2016; Reid, Cormack & Paine, 2019; Williams, 2018; Wilson-Hokowhitu, 2012). Māori models of health are profoundly dissimilar to the colonial health care system imposed during colonisation (Masters-Awatere, Cormack, Graham & Brown, 2020). One of the glaring dichotomies is evidenced in that Māori models of health "acknowledge seamless and uncontrived linkages between the metaphysical (mind, spirit), physical, and relational world(s)" (Masters-Awatere, Cormack, Graham & Brown, 2020, p.1; see also Harmsworth & Awatere, 2013; Robertson & Masters-Awatere, 2007; Jones, Bennett, Keating & Blaiklock, 2014; Reid, Varona, Fisher & Smith, 2016b; Masters-Awatere et al., 2019; Koia & Shepherd, 2020), while a colonial model considers these as discrete realms (Masters-Awatere, Cormack, Graham & Brown, 2020).

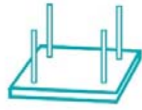
Not only are colonial health models disruptive of, and dissimilar to, Māori models of health, they perpetuate an enduring legacy of colonialism which has known health impacts and outcomes for

Indigenous people (Brown, 2018; Came, Herbert & McCreanor, 2021; Cormack, Stanley & Harris, 2018; Graham & Masters-Awatere, 2020; Harris et al., 2012; Kidd, Gibbons, Kara, Blundell, & Berryman, 2013; Kupferberg, 2021; Miner-Williams, 2017; Walsh & Grey, 2019; Zambas & Wright, 2016). Māori are aware of negative perceptions health professionals hold towards them (Graham & Masters-Awatere, 2020). Graham and Masters-Awatere (2020) find that "ongoing exclusion… Experiences of coldness, micro-aggressions, discriminatory behaviour and shaming communicate a sense of 'not-belonging' and result in Māori patients and whānau disengaging and/or actively avoiding healthcare-related interactions as much as possible" (p. 199) (see also Ellison-Loshmann & Pearce 2006; Reid, Varona, Fisher & Smith, 2016b; Zambas & Wright, 2016).

Health institutions such as DHBs and other providers have an obligation to ensure they are responsive to Māori health needs. The Waitangi Tribunal Wai2575 report (Waitangi Tribunal, 2021) highlights areas the Crown needs to work on to improve Māori health outcomes. This gives rise to the need for Māori community health service provision and for Māori models of health and wellbeing to be included more readily in health institution policy, process, and ultimately, in service delivery. Ensuring consistent Māori input in the policy process offers greater potential for such a vision to be realised. Our intention is to strengthen health institution preparedness to mitigate risk to Māori health in the context of climate change, and it is clear that there is substantial mahi to do in this space.

These intervention points speak to the gaps identified in the current policy framework. That is, there needs to be a clear commitment to a strategic direction that meets varied obligations in the space of climate health needs. Demonstrating these institutional obligations is a key part of effective implementation. It requires consideration of vulnerable groups and identifying met and unmet needs for these groups. Each of our intervention points has emerged after our examination of the current policy formulation process, and consideration of where intervention of Māori health considerations within the context of climate change can be implemented (see Figure 9 below).

Five key intervention points to enhance the current policy framework include:



A. ENSURE FOUNDATION ALIGNMENT
Ensure the alignment of Māori responsive climate health adaptation to health institution policy, legislation and strategic direction

B. ENHANCE ACCESS TO CARE
Enhance services to reduce unmet health needs through preparedness for the impacts of climate change

C. ENGAGE WITH VULNERABLE COMMUNITIES
Meet climate health adaptation needs through authentic relationships with Māori and other vulnerable communities

D. BUILD CAPACITY AND CAPABILITY
Implement climate change as core business across health services to build capacity and capability to strengthen leadership and delivery

E. DEMONSTRATE INSTITUTION COMMITMENT
Determine a strategic direction that recognises relevant obligations and considers diverse climate change needs

Figure 9: Policy framework intervention points

Increase overall awareness and knowledge

In order to deliver on the potential of the proposed policy framework and intervention points, there is a need to increase the awareness of and knowledge about climate change and the impacts on Māori health within health institutions.

> *"Climate change has come along because it's a thing". (DHB3)*

This statement from one interviewee underpins the premise for a proposed social marketing approach: providing focus and purpose for communications and activities for the campaign.

Social marketing approaches have been shown to have potential in Public Health with increasing awareness and introducing behavioural changes within a population (Lefebvre, 2013; Ling, 1992). Increasing awareness and understanding among health institution staff about the impacts of climate change, mitigation, and adaptation will facilitate greater compliance with steps to adhere to Carbon Zero requirements to reduce emissions, prepare the health institution for weather related events, and support and assist patients and whānau with health-related impacts from climate adaptation. Understanding that the impacts of climate change are likely to create greater burden for Māori communities that experience chronic illness and disease (Bennett, et.al., 2014) will also support steps to work with Māori communities.

It has been established that climate change and environmental risk factors are increasing the rates and prevalence of non-communicable diseases (NCDs) (Kjellstrom, Butler, Lucas & Bonita, 2010; Prüss-Ustün et al, 2019; Demaio, Jamieson, Horn, de Courten, & Tellier, 2013). Given the increase in NCDs driven by climate change it is necessary to bring to the forefront the existent disparities between Māori and non-Māori in this space, which is only set to be exacerbated under climate change. The prevalence of six key NCDs (cardiovascular disease, respiratory disease, obesity, cancer, diabetes and kidney disease) is far greater among Māori than non-Māori (Ministry of Health, 2018c; 2018d; 2018e; 2018f; 2021; Collins, 2010). Thus, demonstrating the need for a culturally responsive targeted policy prevention scheme.

DHB participants had limited understanding about the impacts of climate change on health and wellbeing for Māori. It is assumed this reflected the level of climate change knowledge for much of the health institution staff. Participants similarly acknowledged that climate change was a significant area of knowledge to grasp and described their experiences of resistance by some staff to accept changes and/or new ways of doing things within their jobs. Introducing climate change was seen to be an area of new learning what would likely be resisted or ignored which could negate any steps to include climate mitigation and adaptation into policies and/or procedures. Comments reflected their experiences dealing with the COVID-19 pandemic and resistance to changes (happening at the time of interviews). Participants thought that any changes expected within the workspace in dealing with the impacts of climate change, ongoing weather events and seasonal changes was likely to be met with resistance.

In a social marketing strategy, the emphasis would be on raising awareness that climate change is real by consistently presenting messages and/or statements about climate change, mitigation, and adaptation, holding activities for staff, and once planned and organised, advertising the addition of climate adaptation to policy and procedures. Using the introduction of the Pare Kore waste management scheme as an example, all aspects of the social marketing approach can encourage staff to take responsibility for disposing of their personal food waste and rubbish while at work. Encouragement to follow the same methods at home can build and work towards reducing feelings of futility that some individuals may feel given the enormity of the task to reduce emissions and global warming/climate change (DHB1; Ojala, et.al., 2021).

The principle underpinning a social marketing approach is to embed the climate change, mitigation and adaptation information and activities into the health institution, a normal, usual part of organisational planning, thinking, and operating. Health institution leadership needs to endorse implementation to ensure communications and activities are supported and resourced across the organisation (Department of the Prime Minister and Cabinet, 2021). Finding climate change

champions from within the organisation can help to support and guide the activities of the social marketing approach.

A developing context

Our suggested policy framework should be regarded as an amenable and living framework that can be readily applied to a shifting health context in Aotearoa. That is, the essence of a robust commissioning, refining and monitoring stage of policy development that ensures substantive Māori input at all stages can be applied to a changing governance structure; as might be seen with the introduction of Health New Zealand and the Māori Health Authority. Treating this policy framework as a living document also provides the opportunity to refine and update the framework to reflect unmet needs or contemporary concerns.

DHBs, as part of the larger health system, have had responsibility for maintaining health delivery in primary, secondary, and tertiary health funding, and service provision through Primary Health Organisations (PHO), hospitals, and community health and allied services. Following claims put before the Waitangi Tribunal stating that health services had not met the health needs of Māori the WAI2575 “Hauora report”, was released.

The Hauora report (Waitangi Tribunal, 2019) highlighted the structural and functional inadequacies of the DHBs to meet Māori health needs and made recommendations for changes. These recommendations were accepted by the Crown and during the course of this research new legislation (the Pae Ora Healthy Futures Act) was passed. The health system structures that will be in operation by July 2022 will include the establishment of:

- Health New Zealand
- The Māori Health Authority
- Iwi Māori locality Boards
- A Public Health Agency as a standalone business unit in the Ministry of Health.

While the establishment of the new health structure has no direct impact upon the conduct of the research, it offered the research participants an opportunity to consider the possibility of different ways of operating in their future workplace. Furthermore, this context necessitates the reiteration that the stages of a policy development process and necessary intervention points identified in this research can be transmutable to different system structures.

During the course of this research, Whakamaua: Māori Heath Action Plan was implemented. Whakamaua was developed and produced by the Ministry of Health (2020) following consultation with Māori academics, health professionals and community health service providers to improve equity in health outcomes for Māori. This plan was implemented at the two participating DHBs and created changes in staff roles and tasks in order to address equity issues at the DHBs. Steps to improve health outcomes for Māori had been included in He Korowai Oranga, the Māori health strategy (Ministry of Health, 2002; 2014), and Whakamaua aimed to build on that strategy.

There is increased legislative attention on climate change which supports the mahi of Haumanu Hauora. In support of the Climate change Response Act, 2002, and the Climate Change Response (Zero Carbon) Amendment Act 2019, the Government has implemented the Carbon Neutral

Government programme to encourage activities in the public sector to work towards reducing carbon emissions. From this legislation the Minister of Health provides Letters of Expectation to the Chairs of the DHBs which outline directions for strategic planning and policy work. While there is no climate change documentation that informs health institutions about the likely health impacts from climate weather events, other documentation provides guidance about risk assessment and adaptation planning.

The Arotakenga Huringa Ahuarangi framework (Ministry for the Environment, 2019) states that there is a need to understand present and future impacts of climate change to be able to plan for the changes that will continue to occur. Within these adaptive steps there is also a need to build and/or enhance "our adaptive capacity and resilience to reduce, adjust to and take advantage of the consequences of change" (p. 14). They highlight Article 8 of the Paris Climate Agreement of 2015 that recommends working to reduce the risk of loss and damage from weather events. The intervention points we have identified above will be key to making these adaptive steps with DHBs and other health institutions.

Meeting Māori needs through relationships with Māori communities

Improving health outcomes for Māori will be a challenge for health institutions. Additional to the obligations for health institutions set out in Te Tiriti o Waitangi, there are requirements set out in Ministry of Health documents: He Korowai Oranga: Māori Health Strategy (Ministry of Health, 2014), Whakamaua: Māori Health Action Plan (Ministry of Health, 2020), and the Operational Policy Framework (Ministry of Health, 2022). This last document contains a section on improving health outcomes for Māori – Section 3.1.3 making a clear statement that "DHBs health relationships with iwi/Māori must continue within the context of partnership and participation of iwi, hapū and other Māori communities" (Ministry of Health, 2022, p. 9), and that the relationships with these communities "is vital to enhancing Māori health and the health of all New Zealanders" (Ministry of Health, 2022, p.9). The need to engage with vulnerable communities was identified as a key intervention point above. However, engaging with Māori under the current structures will fail to elicit the fullest expression of proactive policy that is responsive to Māori needs in the face of climate change. This is because the health system as a structure, historically and currently, fails to prioritise Māori.

For the last 21 years, the nature of relationships with Māori communities has been facilitated through the Iwi-Māori Governance Boards within the DHBs with little to no direct relationship between the health institutions and iwi-Māori communities. This policy framework centres upon the building of relationships to facilitate health institution responses to give greater voice to Māori communities to address climate adaptation health needs in Māori communities, which will require a substantial shift in the structure of the health system.

In considering Māori community preparedness for climate adaptation, tāngata whenua participants talked about climate change related experiences of marae, urupā and significant sites being impacted by flooding and storms. These events raised issues of whakapapa, cultural participation, and community function and had created difficulties for the communities' raising conflicts and affecting relationships as repairs and resolutions were discussed. These situations provided some

illustration of the types of impacts upon Māori communities from climate related events and how they highlight a broader view of health and wellbeing that captures Māori cultural values, beliefs, and practices (Boulton & Gifford, 2014) which are largely invisibilised in the prevailing health system.

Some of the participants also spoke about the challenges their communities faced in finding and gaining access to pathways and resources that could have supported efforts to address the issues left by some of the damage. One participant described a situation whereby a local council had worked with some of the community to repair damage from a storm. Another participant provided another example where the services of an engineer were being sought to help that community find technical solutions for possible relocation of a marae. Along with cultural issues, issues of public health such as water quality, waste and sewer management were areas that raised questions about how these were managed following climate events. There were no apparent, straight forward guidelines for how Māori communities could deal with the impacts of weather events. Developing linkages between health institutions and the community requires some structural devolution.

A group of tāngata whenua spoke about their experiences with organising a 'health expo' in their hapū community to raise awareness of health issues, childhood illnesses and vaccinations, and providing access for community/hapū members to health screening. This event was organised with a health institution and was thought to be a useful health experience for the community. This type of event is a good example of what could be part of a strategy of relationship building between Māori community and health institutions. Tāngata whenua participants identified that trust is a significant issue for many Māori and overcoming this to build trusting relationships takes time and seeing positive outcomes for members of Māori communities does help. Holding regular health events in iwi, hapū, and Māori communities is one way of helping build trust relationships.

Alternative pathways for health service delivery

Participants highlighted several issues for Māori community health service provision that reflected poorly on health institution policy development and implementation. As a component of the provision of equitable services, to contribute to improving Māori health outcomes, Māori community health service providers are contracted through PHOs to deliver health services to a population (Waitangi Tribunal, 2021, p. 44). The process of DHB planning, managing, and purchasing health services was criticised by claimants to the WAI2575 tribunal hearing as inadequate with health entities not meeting their responsibilities to Māori (Waitangi Tribunal, 2021, p. 44). Claimants wanted "greater input into and control of the design and implementation of primary health services in ways that are not facilitated by the structure of the primary health care system as wet out by the Act" (Waitangi Tribunal, 2021, p. 47).

Participants acknowledged that Māori community health service providers have input into health services but countered that the service contracts were clinically based which would primarily elicit clinically based outputs and outcomes. Many Māori community health service providers utilise mātauranga Māori in their operations and delivery of services, an approach that better meets the health needs of whanau who attend their services.

Negotiating changes to health service contracts to include mātauranga Māori would require Māori staff to participate in the contracting decisions to help non-Māori decision makers to overcome their

reticence to shift away from having only clinical components in the service contracts. There would also need to be acceptance of relevant and appropriate measures to capture the outputs and outcomes that indicate effectiveness of a mātauranga Māori approach in health service provision. This indicates that appropriate implementation, monitoring, and review of policy is useful in contributing to the achievement of improvements in Māori health outcomes.

Participants had worked with Māori health providers whose service contracts had been under-funded and under-resourced and this had created barriers to service effectiveness and to achieve the clauses outlined in policy. This was a situation that participants believed needed to be rectified as the providers are presented with a wide range of needs as an ongoing impact of colonising activities. To meet the multiple and sometimes complex needs some, providers had adapted to the under-funding and under-resourcing and worked across agencies to deliver services that better met the health and wellbeing needs of whānau.

Low levels of staffing capacity and capability, while reflective of the sector as a whole, was also an issue that arose from inadequate funding and resourcing. To work within a Māori community health service, kaimahi (employees) are expected to have knowledge and skill in mātauranga Māori to help better meet the needs of Māori communities that they service. However, mātauranga Māori knowledge and skills was not an expectation for DHB service contracts.

Participants provided two examples of health services being set up differently to improve access for whānau. The first was an example of health services being delivered in the city centre where many whānau had fewer barriers to accessing services. Introducing delivery of health services off-campus not only increases access to services but also contributes to the health institutions carbon zero goals and reduction of emissions. The second example was for health services to travel to smaller centres where there are high Māori populations; where clinics could be held for patients increasing their access to follow-up care and saving on travel expenses. This approach complements the experiences of tāngata whenua participants of holding health expo days in hapū communities where screening for a range of health conditions was undertaken.

Establishing alternative pathways to access health services offers options to Māori in situations when events reduce ability to access health services. Because climate change weather events are likely to exacerbate the conditions of Māori and other vulnerable groups, offering health services in a way that eliminates some of the barriers works for greater equity of health outcomes for Māori.

In the current health care system Māori are overrepresented as patients and underrepresented as professionals (Johnstone & Read, 2000; Ratima et al, 2007; Reid, Cormack & Paine, 2019). Despite being a universal and publicly funded health care system (Graham & Masters-Awatere, 2020), it is where both colonial and neoliberal agenda intersect to disadvantage Māori (Reid, Cormack & Crowe, 2016; Barnett & Bagshaw, 2020). Māori disproportionately experience neoliberal driven health risks (Barnett & Bagshaw, 2020; Masters-Awatere, 2021); risks which are intensified by “cultural loss, colonisation and racism” (Barnett & Bagshaw, 2020, p. 79; see also Reid, Cormack & Crowe, 2016).

Not only are colonial health models disruptive of, and dissimilar to, Māori models of health, they also perpetuate racism as an enduring legacy of colonialism which impacts health outcomes (Harris et al, 2012; Zambas & Wright, 2016; Miner-Williams, 2017; Brown, 2018; Cormack, Stanley & Harris, 2018; Walsh & Grey, 2019; Graham & Masters-Awatere, 2020; Came, Herbert & McCreanor, 2021).

Māori are aware of negative perceptions health professionals hold towards them (Graham & Masters-Awatere, 2020).

Part of the solution to improving health outcomes can arguably be found in building “more socially cohesive institutions and more communitarian, less individualistic societies” (Mooney, 2012, p. 385); the building of which Māori worldviews can contribute to extensively, while colonial and neoliberal models only serve to incumber. Despite the proclaimed ‘right to health’ (Zambas & Wright, 2016) there are profound disparities between Māori and non-Māori in health experiences and outcomes, exacerbated by the neoliberal health care system which is simply the latest iteration of the colonial model of health care. These wider structural considerations emphasise the need for responsive policy that is robust, involves partnered input from Māori at all stages and recognises the need for the five key intervention points described in this report.

Conclusion

There is a clear deficit in the existing policy process that will fail to prepare for the intersecting health crises that vulnerable Māori will experience in the face of climate change. Despite resilience and adaptation strategies among Māori communities, structural disadvantage needs to be prepared for by strengthening health institution responsiveness to Māori health needs. Our findings have demonstrated that there is substantial work to be done in DHBs to develop Māori responsive policy as a preparatory step in anticipation of climate change impacts on Māori health. Participant interviews with DHB staff informed us that understanding and knowledge of climate change among staff was largely limited to common themes around sea level rise and extreme weather events. There is a resounding need to increase knowledge and awareness about the deeper implications of this, particularly the impacts on Māori. The Environmental Scan of DHB websites highlighted a problematic absence of either climate change or Treaty of Waitangi policy, and a marked invisibility of the linkages between the two. Hence, we have proposed a social marketing approach to be implemented in DHBs to centre climate change in the forefront of business as usual.

Key to our project was elucidating the existing policy processes within DHBs. DHB staff presented a picture of a policy process which left much to be desired. Namely, there was a concerning lack of consistent Māori input and an absence of an evaluation stage. We proposed an ideal policy framework that encompasses three key stages, commissioning, refining and monitoring that stipulates a consistent phase of Māori input, with an associated expectation that this input should be in partnership throughout all phases of policy development. The ideal policy framework should be understood as a living document that can be applied to evolving health structures and responsive to obligations and unmet needs.

With an ideal policy framework established we then identified five key intervention points that should strengthen health institutions’ responsiveness to climate change by developing Māori responsive policy. Our intervention points were to ensure foundation alignment, enhance access to care, engage with vulnerable communities, build capacity and capability and demonstrate institution obligations. Some of these intervention points are tightly linked to the policy framework we

developed. For example, ensuring foundation alignment necessitates a thorough commissioning phase that includes appropriate Māori input.

Interviews with tāngata whenua spoke to experiences of climate change, and the economic and cultural impacts that have been felt. Furthermore, we heard that demands on their time to contribute to policy yields little in terms of partnership, and this can be disappointing for iwi representatives. Those tāngata whenua who were also staff spoke of the burden of carrying their non-Māori colleagues. Concern about the lack of known policy processes amongst those responsible for developing policies and implementing them places unnecessary strain upon staff. There was a resounding cry from all staff to increase the capability and capacity of staff. Although, we heard caution about the way in which such training and the wider implementation of climate change policy was approached.

The truncated narrative of the climate change implications on Māori health presented as part of this technical report contextualises the necessity of a proactive and inclusive policy response from health institutions. Central to this is the building of relationships between health institutions and Māori communities. This will not be without its challenges. Potential barriers to this policy suggestion could include:

- Low Māori staff numbers within health institutions hindering relationship building work with Māori communities.
- Distrust on the part of some Māori communities to establish a relationship with a health institution. Building trust is essential to facilitate working relationships.
- Some Māori communities may be limited in their resourcing with capacity and capability constraints. Recognising and working with these constraints may require the health institution offering additional resources to “save face” and nurture the working relationship.

The revised policy framework that we recommend centres upon building relationships to facilitate health institution responses to give opportunity for Māori communities to insert their voices to address climate adaptation health needs within Māori communities. A clear national policy to mitigate the impact of climate change on Maori health is sorely needed. Health institutions need to do adaptation preparedness better, while also engaging simultaneously with mitigation and prevention. Change will require a substantial shift in the structure of the health system that challenges the legacies of colonisation and centres Kaupapa Māori centred and whānau focused policy.

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Appendices

Appendix 1 – Tāngata whenua information sheet

Within the Ministry of Health's national strategy (2014), He Korowai Oranga, Pae Ora – Health Futures an absence of guidance has been identified with regard to the impact of climate change and how public and private investment is to be managed. This project aims to address this gap in information by speaking with public health and tāngata whenua involved with two DHBs, Waikato and Lakes, regions about responses to climate adaptation with respect to vulnerable urban Māori populations. Both regions have high Māori populations giving opportunities to engage with urban and rural Māori groups.

The growing number of Māori who live in precarious urban settings necessitate the focus on developing institutional responses to climate adaptation. Many whānau living in urban settings experience difficulties with employment, overcrowded housing, homelessness, and these situations are exacerbated when adding adaptation to climate change.

Participation in this project aims to enable focused conversations about the need for development of co-designed pathways as a response to climate change. These conversations will be exploring effective strategies in DHB policy development for preparing urban health institutions to be more responsive to Māori needs within the context of climate change.

Invitation: We would like to invite you as tāngata whenua to share your knowledge, views and experiences of climate change, health policy development with respect to how DHB's Māori responsiveness to climate change could be strengthened.

What's involved? Taking part in a hui with the research team who will facilitate a discussion about how, in the context of adaptation to climate change, the needs of urban Māori can be better addressed through DHB policy responses. We are interested in determining the strategic intervention points and how Māori experiences and perspectives can contribute to and strengthen the institution's Māori responsiveness to climate change.

It is expected that the hui/interview will continue for approximately 1 to 1.5 hours.

Is my participation voluntary? Yes, participation in this hui/interview is voluntary. You may withdraw even after you have agreed to take part.

What will be done with the information gathered? The information from all participant groups will contribute to the development of a policy framework and be compiled into a report. This report will be presented to the Waikato and Lakes DHBs and tāngata whenua who participate.

What if I have questions? If you have any questions about this research and/or my participation in an interview or hui, you can contact [the research team]

Appendix 2 - DHB staff information sheet

Within the Ministry of Health's national strategy (2014), He Korowai Oranga, Pae Ora – Health Futures an absence of guidance has been identified with regard to the impact of climate change and how public and private investment is to be managed. This project aims to address this gap in information by speaking with public health and iwi/hapū representatives involved with two DHBs, Waikato and Lakes, regions about responses to climate adaptation with respect to vulnerable urban Māori populations. Both of these regions have high Māori populations giving opportunities to engage with urban and rural Māori groups

The growing number of Māori who live in precarious urban settings necessitate the focus on developing institutional responses to climate adaptation. Many whānau living in urban settings experience difficulties with employment, overcrowded housing, homelessness, and these situations are exacerbated when adding adaptation to climate change.

Participation in this project aims to enable focused conversations about the need for development of co-designed pathways as a response to climate change. These conversations will be exploring effective strategies in DHB policy development for preparing urban health institutions to be more responsive to Māori needs within the context of climate change.

Invitation: As a DHB Staff representative we would like to invite you to share your knowledge, views and experiences of DHB policy development with respect to how DHB's Māori responsiveness to climate change could be strengthened.

What's involved? Taking part in an interview/group interview with the research team who will facilitate a discussion about how, in the context of adaptation to climate change, the needs of urban Māori can be better addressed through DHB policy responses. We are interested in determining the strategic intervention points and how Māori experiences and perspectives can contribute to and strengthen the institution's Māori responsiveness to climate change. It is expected that the interview/group interview will last approximately 1-1 ½ hours.

Is my participation voluntary? Yes, participation in this hui is voluntary. You may withdraw even after you have agreed to take part. You will not be named in the research report, but you may be identified by the role you hold.

What will be done with the information gathered? The information from all participant groups will contribute to the development of a policy framework and be compiled into a report. This report will be presented to the Waikato and Lakes DHBs and participating Iwi/M Lakes and Māori governance boards.

What if I have questions? If you have any questions about this research and/or my participation in an interview/group interview, you can contact [the research team]

Appendix 3 - Tāngata whenua consent form

- The researcher has explained to me the purpose of the research and I have had the chance to ask any questions about the evaluation.
- I know that taking part in the research is voluntary and can withdraw at any time
- I understand that all information will be kept confidential and will only be used for research purposes. What I say may be included in a research report, and the development of a policy framework.
- I understand that any digital recording of interviews will be deleted, and any other data destroyed within 2 years.

	Yes ☑
• I agree to be interviewed for this research study	☐
• I agree that the interview may be digitally recorded	☐
• I agree for my views to be linked to my role as agreed	☐

Name ……………………………………………………………

Signed …………………………………………………………… Date ……………………

	Yes ☑
Please tick if you would like a summary of the research findings	☐
Please provide the best email to deliver your summary	

Appendix 4 - DHB staff consent form

- The researcher has explained to me the purpose of the research and I have had the chance to ask any questions about the evaluation.
- I know that taking part in the research is voluntary and can withdraw at any time
- I understand that what I say in an interview may be included in the research report and for the development of a policy framework.
- I understand that while my name will not be used in the research, I may be identified by the role I hold in the DHB.
- all information will be kept confidential and will only be used for research purposes. What I say may be included in a research report, and the development of a policy framework.
- I understand that any digital recording of interviews will be deleted, and any other data destroyed within 2 years.

	Yes ☑
• I agree to be interviewed for this research study	☐
• I agree that the interview may be digitally recorded	☐
• I agree for my views to be linked to my role as agreed	☐

Name ……………………………………………………………

Signed …………………………………………………………… Date ……………………

	Yes ☑
Please tick if you would like a summary of the research findings	☐
Please provide the best email to deliver your summary	

Appendix 5 - Tāngata whenua interview guide

Introduction

Describe the purpose of the project to the tāngata whenua participants, answer any queries, explain the process for co-design of a policy framework and planned dissemination upon completion of the project.

- Explain the participants rights that are set out on the consent form and confirm that all questions have been answered
- Ensure all consent forms are signed and that participants have information sheets to retain that have the researchers' names and contact details for future reference.

Explain interview process

- Confirm when the hui/interview process is expected to finish and ensure that suits all participants
- Explain the key areas to be covered in the hui/interview and the process will be a discussion and the research lead will use prompts to highlight areas of interest or relevance
- Ask if there are any questions before commencing the hui/interview

Guide for key question areas

1. Experiences of climate change

What are tāngata whenua participants experiences with climate change? Prompts

- What has been noticed?
- Has this impacted on the lives of members of their particular community? How?
- Have there been any impacts specifically on the health of members of the communities? Describe

2. Tāngata whenua input of experiences into policy and/or health institution response

How might you like to see Maori experiences of climate change incorporated into health institution climate change policy? Prompts

- What, if any, are the current processes or pathways for input into health institution policy?
- Do you have experience of having input? Describe
- How easy was it to provide input to health institution function or policy development?
- Did you experience any difficulties with that process? Describe
- How could that experience have been improved? Describe

Tāngata whenua aspirations in the context of climate change

What are Maori aspirations in the context of climate change? Prompts

- What would you like to see in place (in terms of policy by health institutions) for members of your community?
- Are there aspects of Māori cultural values, beliefs and practices that need to be considered? Describe what and why.
- What would be helpful to ensuring these aspirational ideas are used in policy development?
- Do you know of any barriers to these aspirational ideas being taken up by the health institutions?

3. Tāngata whenua input of aspirations into policy and/or health institution response

How might Māori aspirations in the context of climate change be input to health institution policy? Prompts

- Given the responses above in relation to climate change policy – how can those pathways or processes be used for the input of Māori aspirations in the context to climate change?
- Can current processes or pathways for input into health institution policy?
- How easy do you think it might be to input these aspirational ideas into health institution function or policy development?
- Do you feel there may be any difficulties with inputting Māori aspirations? Describe
- How could that experience have been improved? Describe

4. Tāngata whenua views of climate change policy implementation

How might the implementation of health institution policy where Māori have had input be effectively accomplished? Prompts

- How do you see this happening?
- What would you like to see in place?
- What types of relationships need to be in place?
- Can you identify factors that may assist, support or enhance implementation?
- Do you see barriers or gaps that may hinder implementation?

Closing

Check if participants have any questions or further comments to add.

Explain the research process (transcriptions and approvals) and timeline for reporting going forward.

If no questions or concerns, close interview in appropriate manner.

Appendix 6 - DHB staff interview guide

Introduction

Describe the purpose of the project to the DHB staff/managers, answer any queries, explain the process for co-design of a policy framework and planned dissemination upon completion of the project.

- Explain participants' rights that are set out on the consent form and confirm that any questions they had have been answered
- Ensure all consent forms are signed and that participants have information sheets to retain that have the researchers' names and contact details for future reference.

Explain interview process

- Confirm when the group interview process is expected to finish and ensure that suits all participants
- Explain the key areas to be covered in the group interview and the process will be a discussion and the research lead will use prompts to highlight areas of interest or relevance
- Ask if there are any questions before commencing the hui/interview

Guide for key question areas

The following questions follow a line of thinking from climate change, to climate adaptation to meeting the needs of Māori in relation to climate adaptation. The focus of the questions will be about the DHB policy development and implementation processes with a focus on Māori experience of climate change. Māori are more likely to experience negative impacts from climate change so we wish to explore how to make certain that DHB Māori responsiveness to climate adaptation brings about better outcomes for Māori communities.

Experiences of climate change

What are DHB staff/manager experiences with planning for, incorporating climate change into policy? This can cover a broad range of aspects of climate change but what has been noticed to have some type of impact on themselves or people they engage with.

- A sub-question is given your understanding and/or experience of climate change, what is your understanding about climate adaptation?

Prompts

- What change(s) in practice have been noticed or absent?
- Has this impacted on the lives of members of people they engage with? How?
- Have there been any impacts specifically on the health of people they engage with? Describe
    - If none so far, what are the envisaged impacts (in the future) -explore intent

DHB staff/managers input of experiences into policy and/or health institution responses

(This set of questions is about how, given your experiences and thoughts about climate change, those might be applied to DHB policy)

How might you like to see those experiences that you have had of climate change incorporated into health institution climate change policy? And here the focus is more on climate adaptation – how might DHB policy address climate adaptation? Prompts

- What, if any, are the current processes or pathways for input into health institution policy? In particular when it relates to new areas of policy like climate change and climate adaptation?
- From your experience of policy development and implementation for the DHB, how do you see that understanding of climate change influence and move into to policy? Describe
- How easy would it be to provide input to policy that addresses the impacts of climate change through to implementation?
- Are there facilitators (or enabling factors) to policies in relation to climate change?
- Would there be any difficulties or barriers to that (ie policy in relation to climate change)? Describe. What would some solutions be to those difficulties or barriers?
- How could that experience have been improved? Describe

Inclusion of tāngata whenua in DHB policy – Māori responsiveness in relation to climate change

(This set of questions is about how DHB climate adaptation policies might best meet the needs of Māori) How does the DHB ensure that Māori perspectives and understanding of their world is incorporated into policy? Especially policy that impacts of a Māori way of life (locally, regionally and nationally)?

What is the current process for ensuring Māori perspectives are included in policy development and implementation? Prompts

- Who has input into Māori responsiveness policy development and implementation?
- How easy is it to ensure that Māori perspectives and/or worldview is incorporated into Māori responsiveness policy?
- Are there clear processes or pathways for Māori perspectives to have input into policy? At what point do those processes or pathways start in the policy development cycle?
- Are there any difficulties or barriers to developing Māori responsiveness policy to implementation? Describe. What might some of the solutions be to those difficulties or barriers?
- What could be put in place to improve the Māori responsiveness policy development cycle through to implementation and even evaluation?

Closing

Check if participants have any questions or further comments to add.

Explain the research process (transcriptions and approvals) and timeline for reporting going forward.

If no questions or concerns, close interview in appropriate manner

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WAIKATO
Te Whare Wānanga o Waikato

WE CAN ADAPT, WE'VE DONE IT BEFORE, WE CAN DO IT AGAIN