Pacific Healthy Homes Pilot Evaluation

31 October 2025

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Executive Summary

Background

The Pacific Healthy Homes (PHH) pilot was a one-year initiative (2024–2025) commissioned by the Ministry for Pacific Peoples (MPP) to address housing-related health issues among older Pacific peoples (aged 45+) in Porirua and South Auckland. The programme built on the Healthy Homes Initiative (HHI), which targets children at risk of housing-related illness, by focusing on older Pacific adults—a group previously underserved by existing housing interventions. The programme was delivered by experienced local Pacific and HHI providers. The PHH pilot provided tailored housing interventions to improve health. These included healthy housing education, insulation, heating, ventilation, curtains, draught-stopping, minor repairs and referral to relevant health and social services. The PHH also provided additional funding to support home repair, which was not included in the HHI.

Evaluation Approach

A mixed-methods evaluation was conducted:

- **Quantitative Analysis:** Due to the recency of PHH, it was not possible to evaluate outcomes quantitatively. Instead, the evaluation analysed five-year outcomes for older Pacific people and their households who had participated in the HHI using a pre-post design and data from the Integrated Data Infrastructure (IDI).
- **Qualitative Analysis:** Semi-structured interviews were conducted with PHH clients and staff to explore lived experiences, perceived benefits, and implementation challenges. All clients interviewed were homeowners. Due to the short period of time available for conducting the evaluation, the interviews could only capture short-term outcomes and for some client participants the PHH interventions were not fully complete at the time of the interview.

Key Findings

Qualitative Results (from PHH participants)

1. **Prior to PHH, many participants lived in poor-quality housing:** High energy costs and disrepair meant that homes were cold and damp. In some cases, inadequate space and lack of accessibility caused additional discomfort.
2. **PHH improved their housing:** Participants reported warmer, drier and safer homes due to PHH interventions such as heat pumps, insulation and window repairs. As a result, they experienced improved comfort, reduced mould and enhanced fire safety.
3. **PHH improved health and wellbeing:** Participants reported better health, reduced stress, reduced energy bills and ability to use more parts of the house due to the improved temperature. Some had expectations of further benefits during winter.

4. **Support for the programme:** Participants expressed deep gratitude for the programme and its respectful delivery.
5. **Challenges Identified:** Limited funding per household constrained the scope of repairs. Landlord reluctance to make improvements hindered outcomes for renters. Some staff perceived that repairs took too long due to lack of contractor availability; however, no client participants raised this as a problem.

Quantitative Results (from HHI data)

1. **Health Outcomes:** The HHI intervention was associated with a 25% reduction in hospitalisations among households of older Pacific peoples. No significant change in hospitalisation rates was found for older Pacific adults themselves. Similarly, the HHI intervention was associated with decreased GP visits for households but not for older adults individually. Pharmaceutical use associated with the HHI intervention was estimated to have increased for both older Pacific adults and their households.
2. **Economic Outcomes:** The HHI intervention was associated with slight income decreases for both Pacific older adults and their households. Meanwhile, the HHI intervention was associated with slight increases in benefit receipt for households of Pacific older adults but not Pacific older adults themselves.

These findings suggest that while the HHI positively impacted households, it did not significantly improve outcomes for older Pacific adults themselves. This highlights the need for the additional funding for home repairs provided by PHH.

Conclusions

The PHH pilot addressed a critical gap in housing support for older Pacific peoples. Qualitative findings from PHH participants indicate meaningful improvements in housing conditions and wellbeing. The quantitative analysis of HHI data showed that the households of older Pacific peoples, but not older Pacific peoples themselves, benefitted from HHI intervention. This underlines the importance of the broader PHH intervention, which provided additional funding for home repairs to improve health for older Pacific peoples. It also emphasised the need for long-term quantitative evaluation of the PHH.

Recommendations:

1. **Longitudinal Evaluation:** Conduct 1-, 3-, and 5-year outcome evaluations of PHH to assess long-term impacts on health and economic outcomes.
2. **Increased Funding:** Expand funding to address more extensive repairs and structural issues.
3. **Landlord Engagement:** Develop strategies to improve landlord compliance with healthy housing standards.
4. **Programme Expansion:** Scale up PHH to reach more households given the high demand, positive reception and positive impact on health and wellbeing.

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1. Introduction

In late 2024 the Ministry of Pacific Peoples (MPP) commissioned the research team to evaluate their one-year pilot programme, Pacific Healthy Homes (PHH). In this programme older Pacific peoples at risk of housing-related illness are provided with healthy housing education, interventions, advocacy and referrals to improve their home environment. We carried out a mixed-methods evaluation, drawing on the methods used in our previous work to evaluate the Healthy Homes Initiative (HHI).

We draw on qualitative data to answer the following research questions:

> What are staff and clients' experiences of housing and of Pacific Healthy Homes?
> What impact does participation in Pacific Healthy Homes have on housing and wellbeing outcomes?
> What are the key challenges to improving housing-related health outcomes via Pacific Healthy Homes?

We draw on quantitative data to answer the following research questions:

> What is the long-term impact of a healthy homes intervention for older Pacific peoples' health outcomes measured by hospitalisations, GP visits and pharmaceutical use?
> What is the impact on economic outcomes measured by incomes and benefit rates?

In this report we first provide context to the study by outlining the PHH pilot, the connections between housing and health, and describe housing conditions and priorities for Pacific peoples in New Zealand. We then introduce the methods of the qualitative and quantitative studies that make up the evaluation. The next chapter sets out the results of the two studies. The final chapter discusses and explains the results, discusses the strengths and limitations of the studies, and places them in the context of the international and local literature.

2. Background to the study

2.1 Pacific Healthy Homes

Pacific Healthy Homes (PHH) is a pilot programme carried out from July 2024. It is aimed at improving housing for older Pacific peoples (aged 45+) at risk of housing-related illness in South Auckland and Porirua. This programme was led by the Ministry for Pacific Peoples (MPP). It is an expansion of the Healthy Homes Initiative (HHI), a nationwide programme funded by the Ministry of Health and supported by grant funding, which aims to reduce housing-related hospitalisations for children.

The goals of PHH were to:

- **Improve housing quality and safety.** The PHH sought to ensure homes were warmer, drier, safer and more accessible. Interventions aimed to address dampness, mould, poor insulation and structural issues such as broken windows and inadequate ventilation.
- **Improve health and wellbeing**. The PHH aimed to reduce exposure to housing-related health risks, lowering hospitalisations, reducing stress and improving comfort.
- **Increase access to healthy housing interventions for underserved populations**. The PHH specifically targeted older Pacific peoples who are not eligible for the HHI but have high housing and health needs.

The eligibility criteria for participating in PHH was:

- being a Pacific person aged 45 years or over
- having experienced an Ambulatory Sensitive Hospitalisation (ASH) condition such as pneumonia, bronchiolitis, rheumatic fever or meningitis
- being a New Zealand citizen or permanent resident
- having a low income
- renting or living in a home you own
- living in Porirua or South Auckland.

MPP delivered the PHH by partnering with two organisations, Habitat and Sustainability Trust, who help families make their homes warm, dry, and healthy. These organisations are also HHI providers. Similar to HHI participants, people that took part in PHH were visited by a trained housing assessor who assessed the home to provide interventions tailored to the occupants' needs, which included heating and insulation (via access to Energy Efficiency and Conservation grants), advice, and referrals to help improve the housing environment. In addition to the usual HHI package, the PHH provided funding for home repairs. MPP also provided a contingency fund to cover any top-ups required to the Warmer Kiwi Homes grant.

MPP partnered with Pacific providers (Pasifika Futures Limited and The Cause Collective) to amplify referrals of Pacific households to PHH. These organisations also provided wrap-around support, including cultural support and education and navigation to other health and social services to PHH households.

Additional referrals were generated from the organisations' existing connections, including Vaka Tautua, Ora Toa, Wesley, Age Concern, Pacific health services, the Porirua Pacific Services Network (which includes Citizens Advice Bureau, police and schools), and from presentations to a range of community groups, including churches and elderly exercise groups.

After referral to PHH, staff arranged 1-2 visits with PHH clients. Staff assessed the home and household needs. Staff provided interventions tailored to the household needs, including:

- mould cleaning kits
- heaters
- bedding
- hot water bottles
- tailored healthy housing advice (i.e. moisture/mould control, heating, ventilation)
- written information on keeping the home environment healthy
- hygrometer (for measuring moisture in the air)
- wrapping hot water cylinder
- advice on using and maintaining heat pumps
- checking and installing smoke alarms
- installing draught tape
- installing curtains or referring to curtain installation service
- "scoopee" (for collecting window condensation)
- referral to other services

In August 2025, the Government announced that PHH was being extended an additional year to 30 June 2026. The announcement noted that over 300 Pacific households had been supported in the past year, with more than 5,200 interventions such as insulation, heating and minor repairs delivered. 200 more households were expected to benefit over the next year (Reti, 2025).

2.2 The effects of housing on health

Poor quality or substandard housing is an enormous global problem that harms population health (Alidoust & Huang, 2023; Howden-Chapman et al., 2023; Krieger & Jacobs, 2011; World Health Organization, 2018). Health harm results from several mechanisms. Physical harm results from toxic substances in the home's air or structure, injury hazards, overly hot or cold temperatures that place pressure on cardiovascular or respiratory symptoms, and crowded living conditions that promote the spread of infectious disease (World Health Organization, 2018). Mental health is harmed by the stress and anxiety caused by crowded, substandard and insecure housing, by high housing and energy costs, and by managing health in difficult living situations (World Health Organization, 2018). Reviews of the literature show that housing that meets quality standards is essential for population health (Alidoust & Huang, 2023; Howden-Chapman et al., 2023; World Health Organization, 2018).

Reflecting this, there is strong evidence that improving housing improves health (Alidoust & Huang, 2023; Thomson et al., 2013; World Health Organization, 2018). Studies carried out in New Zealand show that interventions including installing insulation, providing heating, preventing draughts and subsidising energy bills improve health (Howden-Chapman et al., 2007, 2008, 2021; Rangiwhetu et

al., 2017). Some of the strongest evidence comes from the HHI, aimed at households with children at risk of housing-related illness. The HHI provides a range of interventions, referrals, advice and advocacy, including referring clients to other government-funded programmes, such as insulation subsidies. The HHI reduces hospitalisations, improves income and education attendance, and provides a 507% return on investment (Pierse et al., 2024). Interviews with HHI families show that there a range of benefits to quality of life beyond health and education. After intervention, HHI families report being able to use more parts of their house, feeling happier and more at home, and getting along better with family members (Chisholm et al., 2020, 2024; McKay & Eggleton, 2023).

Despite the success of the HHI, there are limitations. Some HHI families remain in dangerously cold housing, even after HHI intervention, because they often cannot afford to pay energy bills (Beukes et al., 2023; Chisholm et al., 2024). Another important issue is housing problems that go beyond the minor repairs HHI assessors can carry out, such as leaky roofs. HHI staff can support renters to advocate for the landlord to make home repairs and meet residential tenancy standards. However, in some case, tenants are unwilling to do this due to fear of damaging the relationship with the landlord and losing their tenancy (Chisholm et al., 2017, 2020). The case of homeowners in the HHI also presents challenges. Government subsidies were limited to heat pumps and insulation, but there was nothing available for structural repairs that were often desperately needed (Chisholm et al., 2020). There is some funding and support for interest-free loans for owner-occupied home repairs available through Te Puni Kokiri and organisations including Ryhaven Trust, Tuanui and Habitat for Humanity; however, the demand for such services far exceeds the funding available (Stewart, 2025).

2.3 Housing for Pacific peoples in New Zealand

As of 2023, there were 464,200 Pacific peoples in New Zealand, comprising 8.9% of the total population. This population had a median age of 24.9 years compared to 38.1 years for the general population (Stats NZ: Tatauranga Aotearoa, 2025). Pacific peoples are highly diverse, with 43.3% identifying with more than one ethnic group, including 21.1% who also identify as Māori. Most (72.3%) Pacific peoples live in one-family households. However Pacific peoples are much more likely than other New Zealanders to live in multi-family households. 18.2% of Pacific peoples in New Zealand live in two-family households, compared to 7.7% of the New Zealand population, and 3% live in three-family households, compared to 0.8% of the New Zealand population. Rates of disability for Pacific peoples are similar to other ethnic groups, but they are more likely to report an unmet need for support (MOH & MPP, 2025).

The 2023 census showed that Pacific peoples are less likely than other ethnic groups to own their own home. 19.9% of adults own their own home, compared to 58.6% of NZ Europeans, 42.6% of Asians, and 30.4% of Māori. Not only are Pacific peoples more likely to rent, but they are also more likely to pay a high proportion of their income in rent. 69.4% of Pacific renters pay more than 30% of their income in rent, compared to the New Zealand total for renting households of 49.2%. 39% of Pacific peoples lived in damp housing, and 35.5% lived in homes with visible mould over an A4 size; figures for the NZ European population were 18.3% and 13.8 respectively. Pacific peoples experience the highest rates of household crowding in New Zealand, at 38.5%, compared with 12.2% of the total population. 6% of the Pacific population are living in severe housing deprivation- higher than other

ethnic groups in New Zealand. This includes people who were sharing someone else's private dwelling and living in uninhabitable housing (housing without amenities) (Goodyear et al., 2025). The General Social Survey showed that 14.4% of Pacific households report not being able to afford to heat their homes, compared to 5.7% of the total population (MBIE, 2022). High housing costs cause Pacific peoples to go without heating or food (Cheer et al., 2002). Lack of knowledge and language proficiency contributes to Pacific peoples not seeking social housing assistance and not accessing their rights to quality housing in the private rental market (Teariki, 2017).

Reflecting these poor housing conditions, Pacific peoples are more likely than other population groups to experience preventable housing-related illness (Ministry for Pacific Peoples, 2025). Housing affects health through several pathways; key among these in New Zealand is crowding, which exposes people to infectious disease, and cold and damp, which exacerbates respiratory and cardiovascular systems (Riggs et al., 2021; World Health Organization, 2018). Pacific peoples experience the highest burden of respiratory diseases among all ethnic groups in New Zealand. Across every age group, their rates of hospitalisation for these conditions are 2.6 times higher than those of other ethnic groups (Tautolo et al., 2020). For Pacific peoples, exposure to crowding is estimated to contribute to 25% of infectious disease hospital admissions per year; for other ethnic groups, the figure was between 5-17% (Baker et al., 2013). Acute rheumatic fever is an infectious disease associated with crowding and poor housing conditions that can lead to death and lifelong cardiovascular problems (Baker et al., 2022; Oliver et al., 2017). Pacific children are 80 times more likely (Māori 36 times more likely) to develop acute rheumatic fever than non-Māori and non-Pacific children (Bennett et al., 2021). According to the General Social Survey, Pacific peoples who report housing problems are more likely to report poor physical health, poor mental wellbeing, and low life satisfaction (StatsNZ, 2023).

While each Pacific ethnic group is unique, scholars have observed that there are commonalities in what matters to Pacific peoples' wellbeing. These include the importance of family, spirituality, and connection to culture, heritage, ancestors, and language (Tamasese & Parsons, 2019; Teariki & Leau, 2023). For Pacific peoples living in Aotearoa New Zealand, the island home remains an important source of identity, even if they have never been there (McGavin, 2017). Connection to the natural world, and a strong sense of the importance of kinship links are important to many Pacific peoples (Anae, 2019; Teariki & Leau, 2023). In the context of housing, providing care and hospitality to extended family, and living intergenerationally is important to many Pacific peoples (Allen et al., 2025; Fistonich & Kiroff, 2024; Pene, Howden-Chapman, et al., 2009; Rohorua et al., 2022). Yet often the layout and size of the home make living this way difficult or uncomfortable (Gray & McIntosh, 2011; Macpherson, 2019; Pene, Peita, et al., 2009). Homes provide a space for cultural practices and may be adjusted to enable this; for example, using a garage for village council meetings, church services and other social events (Macpherson, 2019). For Pacific peoples, "housing is not only a physical space, but also a spiritual place that creates a sense of belonging; it is also a place where people gather and find 'home'" (Tamasese & Parsons, 2019, p. 64).

The vision of Fale mo Aiga, the Pacific Housing Strategy, is that people live in healthy homes that support their wellbeing (Ministry for Pacific Peoples, 2022). Some factors identified as critical for achieving that vision include tailored support for Pacific peoples, deep engagement with Pacific families, a place-based approach, a capable Pacific housing sector, and collaboration within the

housing system (Ministry for Pacific Peoples, 2022). Improving health for Pacific peoples, feasible under improved housing conditions, is a current government priority (Ministry for Pacific Peoples, 2025).

3. Methods

This is a mixed methods project aimed at understanding the effect of PHH. It draws on qualitative methods to explore the effects of involvement in the PHH in its first year of operation. Since it is too soon to assess social outcomes associated with PHH quantitatively, we conducted a quantitative analysis of long-term outcomes for older Pacific peoples and their households who participated in the HHI, a child-focussed service which provides a similar suite of interventions to PHH.

Using both qualitative and quantitative approaches enhances the validity and depth of the evaluation. Quantitative data provide objective measures of outcomes, while qualitative data offer rich insights into participants' experiences and perspectives. Triangulating these approaches helps confirm findings across different data sources, while the qualitative data complement the quantitative results by explaining the underlying reasons behind trends. This combined approach ensures a more comprehensive and nuanced understanding of the impact of PHH.

3.1 Qualitative research

Research Design

Qualitative research is an important component to evaluating housing interventions, revealing effects undetectable by quantitative studies, and giving insight into confounders and pathways that help explain why health impacts vary, and supporting service improvement (Thomson et al., 2009). We conducted a qualitative descriptive study, which aims to provide a straightforward, rich, and accurate description of a phenomenon, event, or experience. This type of research is especially useful for pragmatic research such as our own, particularly when researchers want to stay close to the data and participants' own words without heavy interpretation or theorising (Sandelowski, 2000).

Data Collection

Data were gathered through semi-structured, open-ended interviews—an approach that maintains focus on the research objectives while allowing participants the freedom to express their perspectives on their terms (Liamputtong, 2013). We interviewed staff and clients of the PHH. Our interview schedule drew on the existing knowledge about the effects of healthy housing intervention, and Pacific housing experiences (see Chapter 2).

Staff participants were offered the choice of being interviewed online or (in the case of the Porirua providers) at their offices. Staff participants were recruited through already established relationships.

Client participants were recruited through staff participants. Client participants were offered the choice of being interviewed online, on the phone or, in the case of Porirua participants, at home or in the Pacific Healthy Homes hub. Following a suggestion from South Auckland staff, they attended client interviews to help translate for clients for whom English was a second language. These interviews were conducted through online video conference between the Vaka Tautua office and the

University of Otago. All client participants were posted a $50 supermarket voucher to compensate their time.

Data Analysis

We transcribed the interviews and conducted template analysis, a type of thematic analysis which is ideal for applied research such as this study (Braun & Clarke, 2020). All interviews were audio-recorded and subsequently transcribed. To ensure confidentiality, any identifying information was removed. The transcripts were then imported into NVivo, a qualitative data analysis software.

We then carried our template analysis, a form of thematic analysis (Brooks et al., 2015; Crabtree & Miller, 1992; King, 2004). In this flexible method, data can be coded inductively or deductively, with or without the use of a priori codes and themes (Brooks et al., 2015). We carried out the six steps proposed by Brooks et al (2015). After familiarisation with the data (step 1), and, through the process of preliminary inductive coding (step 2), we organised our codes into "meaningful clusters" (Step 3) (Brooks et al., 2015, p. 203). Codes and themes were then organised into an initial coding template which enabled the representation of the hierarchical and lateral relationships between different codes and themes (Step 4). As more interviews were coded, the template was refined to incorporate new insights (Step 5). This iterative process continued until all relevant data could be coded to it This represented the final codebook and was applied to the full dataset (step 6).

Ethical approval

The qualitative aspects of this project received ethics approval from the University of Otago (ethics number 24/0508).

3.2 Quantitative research

Research Design

The HHI is a natural experiment of a multi-dimensional and individualised housing intervention and wrap-around support service. To evaluate the impact of a healthy housing intervention on older Pacific peoples we drew on a simple pre/post analysis of HHI participation. This compares outcomes for older Pacific peoples involved in the HHI in the five years preceding and following the intervention period, adjusting for age and service changes during the pandemic.

Data Collection

The source data for this evaluation is the HHI referral data generously gifted to the evaluation team by HHI community providers. This data is collected by HHIs and contains the National Health Index number for the referred person, as well as the information collected during the home assessment, and intervention data (what was provided, when it was provided, and whether the requirements were satisfied). Referral data was subsequently uploaded to the Statistics NZ Integrated Data Infrastructure (IDI) database and deidentified.

Ethnicity and outcome data were retrieved from the IDI. The ethnicity data was sourced from IDI personal information tables. This was measured using the multiple ethnicity method. Hospitalisation and pharmaceutical evaluations utilised Ministry of Health data tables while income and benefit evaluations utilised IDI income calendar year summaries tables.

Data Analysis

Methods for this analysis were adapted from the five-year outcomes evaluation report which drew on the IDI. In the report a cohort was developed of individuals and their whānau who had participated in a HHI intervention (referred to from here onwards as the "HHI linked cohort") (Pierse et al., 2024).

To develop the PHH study cohorts, we first identified eligible adults from the HHI linked cohort. Eligible adults were identified and defined as people with Pacific ethnicity aged 45 years and over. Identified individuals were then linked back to their census households to form the linked PHH study cohort. In this evaluation, we have utilised both cohorts. Study cohort 1 is the cohort of just the identified individuals who met the criteria of Pacific ethnicity and aged 45 and above – this is the "Pacific Older Adults" cohort. This cohort is used a proxy for individuals who met the criteria for participating in the PHH pilot study. Study cohort 2 includes the Pacific Older Adults and their households – this is the "Pacific Older Adults' Households Cohort".

Health outcomes were evaluated using similar techniques. Firstly, the intervention period was defined as 90 days from the assessment date. These are distinct timeframes for each household and are dependent on the assessment date of the referral. For hospitalisations, each datapoint in the source data is treated as a separate hospitalisation event. The total number of events were calculated for everyone for each year of the five years prior to and following their HHI intervention period. For pharmaceuticals, each datapoint represented a separate dispensation event. For GP visits, non-repeat pharmaceutical dispensations were used as a proxy. Person-year event totals were also calculated for pharmaceutical and GP events. Statistical modelling of this data employed a Poisson regression framework with adjustments for key confounding variables including age.

Economic outcomes were evaluated similarly to health outcomes above. Both benefit and wage and salary information were sourced from IRD data available in the IDI. For each person, totals were calculated for each year for two years preceding and following the HHI intervention. These totals were calculated for income from wages and salaries and separately for income from benefits. For individuals with no data, totals were imputed as $0 values. Income and benefit analyses were restricted to individuals aged 18 to 64 to eliminate potential confounding due to retirement and superannuation events.

Ethical approval

The quantitative analysis carried out in this project was covered by existing ethics and approval from our previous HHI work. The data is housed by Stats NZ and subject to strict Stats NZ five safe protocols (Pierse et al., 2024).

4. Qualitative results

In this chapter we present the results of the qualitative analysis. This chapter is divided into four. We first provide context through describing the PHH service as described by staff. Second, we present summaries of the PHH client participants' households and experiences relating to the PHH. Template analysis, like all types of thematic analysis, in presenting the most salient parts of the data across all interviews, can be criticised of losing contextual detail or holistic understanding of individuals' stories. Individual case summaries help overcome this, while offering a useful reference for quotes from the analysis (Brooks et al., 2015). Finally, we present the results of the template analysis (Fig.2): key issues affecting PHH households prior to PHH intervention, and insights about PHH, its impact, and its challenges. All participant accounts are anonymised and distinguished by codes: staff (S01-05) and clients (C01-C12).

Fig.2: Template analysis of staff and client interviews

Issues affecting PHH households	Cold, damp, disrepair	Energy poverty
		Structural deficiencies
		Poor/absent insulation/heating
	Inaccessible home environment	
	Inadequate space	
	Inadequate fire safety measures	
	Impact of housing conditions on wellbeing	
PHH insights	Importance of trusting staff/client relationship	
	Improvements to home	Warmer
		Drier
		Improved fire safety
	Improvements to wellbeing	Improved health and happiness
		Reduced bills
		Able to use more parts of the home
	Limitations to PHH	Landlord reluctance to improve housing
		Limited funding per house

4.1 Individual case summaries

The participants' names as well as any identifying details have been excluded; each participant is described by a number. For example, C01 indicates client participant 1. Note that the fact that participants did not discuss particular interventions does not mean that they did not receive them.

- C01 is a male homeowner, living with his partner, her niece and her niece's three children in a three-bedroom home. One of the bathrooms, which also functions as a laundry, is unusable. He learned about PHH at "the centre" (not clear which). The PHH interventions he discussed were healthy housing education, smoke alarm provision, insulation, heat pump and window repairs.
- C02 is a male homeowner, living with his wife in 3-bedroom home. He learned about the PHH at a workshop run by the PHH assessor. Health issues in the household mentioned were chest flu. The PHH interventions he discussed were draught tape and window repairs.
- C03 is a female homeowner, living with her husband, who has cancer, and one of her adult children in a 4-bedroom house. One of the two bathrooms, which is also a laundry, is unusable due to disrepair. C03 heard about PHH through a friend who went through the programme. PHH interventions discussed were light bulbs, repairs to cladding and windows, draught tape, and curtains.
- C04 is a male homeowner, living with his wife and mother in a 4-bedroom home. His 4 children are grown up now. He learned about the PHH through Vaka Tautua. The PHH interventions he discussed were curtains; the PHP staff had measured for curtains, but these had not arrived yet.
- C05 is a female homeowner, living with her husband and two of their children in a 4-bedroom house; her daughter and grandchildren living in another dwelling, converted from a garage, on the property. The PHH interventions she discussed were a new bathroom (previously, they had to bathe at the public pool), a new heater and rangehood, repairs to windows, a door and the roof, and a heat pump (which had not been installed yet).
- C06 is a female homeowner, living with her brother in a 3-bedroom house. Both were unwell at the time of the interview. Her disabled father also lived in the home, before he died. She learned about PHH through her sister. The PHH interventions she discussed were a heat pump installation, repairs to windows and doors, and insulation. She was still waiting on some repairs and was not sure whether insulation installation was complete.
- C07 is a female homeowner living in a 5-bedroom house with her husband, two adult children, and her son's wife and child. She learned about PHH through her church. The PHH interventions she discussed were energy education, window repairs, new curtains, draught stoppers and smoke alarms.
- C08 is a female homeowner living in a 3-bedroom house with her husband, her daughter and her daughter's five children. She has arthritis and is recovering from a knee operation. She uses crutches and a walker. She heard about PHH through an Age Concern workshop. PHH interventions discussed were window repairs and replacements and repaired rangehood.

- C09 and C10 are a married couple living in a 4-bedroom (+ cabin) home. They live with one of their adult children and C09's sister. C09 heard about PHH through the assessor approaching him at work. PHH interventions discussed were lightbulbs, installation of bathroom extractor fan, new smoke alarms, rangehood installation (already had one, but assessor installed it for them), and cladding repair and replacement.
- C11 and C12 are a married couple who own their own home. They live with their 2 adult daughters and their three grandchildren, who have asthma, in a 5-bedroom house. C11 has mobility issues. The participants heard about PHH through a presentation at their Vaka Tautua cultural group. PHH interventions discussed were new curtains, smoke alarm, light bulbs, "scoopee" (to remove condensation) and mould cleaning kit.

These participant summaries draw our attention to several important things:

- Most of the participants lived in multi-generational households as defined by Allen and colleagues (2025, pp. 46–47): "where multiple generations of related adults live together, as well as multi-family households from the same generation".
- Only two of the 11 households represented lived with children aged under 18. This shows that our participants (at least) were quite distinct to the HHI population.
- All the participants were homeowners. Our study is limited because it does not include the perspectives of renters.
- The range of interventions varied significantly; the new bathroom received by one household indicates that the PHH referred them to another service, as such an extensive renovation is outside the scope of funding offered by PHH.
- Some people had not received all the planned interventions. This reflect the tight timeframe between the PHH being implemented for households and the report deadline.

4.2 Key issues affecting PHH households

All participants are anonymised. C01-C012 refer to client participants, and S01-S05 refer to staff participants.

Cold, damp and disrepair

Cold and damp was a major problem for many PHH families. Houses were: "very cold" (C06); "so cold" (C03); "black mould" (C03); "[inside] the house felt like you were sitting outside" (C01). Cold and damp conditions were the result of energy poverty, and structural deficiencies including disrepair, insufficient heating and insulation.

Energy poverty

Some people could not afford to heat their homes. They were careful about the electricity they used:

> I know it's very tough on, you know, when we come to pay our bill…. We have to be watch out. What is going to happen?... We can find it really…. expensive sometimes (C12).

> When it's winter, cold. Cold. Yeah. You have to have two blankets sitting watching TV. Too cold. We don't like it. We don't like using the heater (C05).

Another participant explained how they were careful to heat the home in the mornings for when the children were getting ready for school, but then they turned the heating off to save money:

> Every door is closed just to leave the heat inside so [that while] the kids [get] ready to go to school, they can all feel the warm…and the heat… We don't use much [electricity]. You know, the heat goes off. I know the consequence of…using too much power (C04).

Structural deficiencies

The cold conditions also resulted from lack of insulation, insufficient heating, ventilation and insulation, and structural deficiencies. Many of these issues are present in one home a staff member described:

> I knew that they had collapsing ceilings, so I knew that I was going into a pretty full-on one. Massive black mould infestation all down the hall…. Rotton floorboards. This roof has been leaking for years. Shower head no longer functioning. It's not even there. It's just got this constant dribble of water coming out. Hot water cylinder hasn't been working for two years. They're boiling water: boiling to have a wash or going to their friend's house. Broken windows everywhere. Two rooms not being used because they're mouldy and they've got broken windows…There's no insulation in the ceiling apart from the old stuff that was put in when it was built, so you know, it's like paper…That cold is coming down, and then they're constantly boiling the jug. Then they're all together. You know, and yeah, and the condensation's hitting the ceiling and yeah, it was just a perfect storm (S05).

However, for the most part, staff discussed disrepair as the main issue causing problems in the home.

> There's a lot of stuff going on this house, but the biggest problem they had was the leaking roof. They've got a faulty hot water cylinder and it's on the relief pipe, which is quite common, and it runs up the side of the roof and its constantly leaking water in[to] the kitchen. So it's just getting worse and worse. It's not like it only leaks when it rains. And that's just like the tip of iceberg with this whānau (S02).

> When it rained, she has to go – she's old, yeah, she's 80 – sometimes she has to go into another room and get the bucket and leave it under the hole (S03).

Windows and doors that did not close were of particular concern, resulting in homes that were impossible to heat:

> The biggest problem for whānau is windows and doors… If you cannot shut your windows then you're, stuffed in the winter (S05).

> It sounds like something small, but you know, if every single window has got a gap around it and can't shut properly, that's, you know, that equates to quite a big problem (S02).

This disrepair affected not only the warmth of the home, but people's ability to use the home. S05 described a house where two of the rooms were inaccessible due to disrepair. C03 noted that his home had two bathrooms, but one, which was also the laundry, was "out of action" as the floor was rotten: "we don't have a washing machine in there because of the floorboards that need to be done". Another client described bathing with a bucket or at the public swimming pool because of the bathroom's problems: "The wall is starting to fall, to get rot, and the shower too…So, we never use the shower" (C05). Describing one house, S02 said, "just accessing the house at the front step [is] not safe due to the deteriorated and poor condition".

Both staff and client interviews gave insight into why disrepair was such an issue. The primary issue was cost. Families could not afford to fix the problems:

> A lot of them that are been in the same family for 40 years, 50 years you know, and those houses are just quite run down, you know, because there's not a lot of money to get things fixed… There's not a lot of excess money to fix the bathroom floor (S04).

> I was talking to a whānau on Friday and it was, "yeah, okay, um, mum's bedroom window doesn't shut and she's sleeping right under that". And you've got this beautiful little old lady who, you know, has early onset dementia…. It's really easy to sort it. But for the whānau, it's just beyond their reach (S05).

> But money is the problem. If you've got the money, it's easier. But everything is money. If you got the money, no problem (C01).

> We try to save up for it (C10).

In addition, staff reflected that maintenance took a back seat because households had other pressures on them, including supporting family:

> Those kids are so busy looking after the family member that they just don't have time to be doing the maintenance to the house (S05).

> I think for a lot of whānau, though, the desire or need to create more space to house whānau, [is] always prioritise[d] [over] maintaining the house (S02)

Perhaps related to this, was an idea put forward by one participant – that because people are older, they prioritise other things over investing in the property:

> This is a nice place and we don't want to spend a lot of money. Because we know that once we pass away, our kids will probably sell and just get rid of this property and just go and do other things, does that makes sense? (C10).

Some people's houses were in such a state of disrepair that staff participants observed that it would make more sense to rebuild than to repair. Yet people's emotional connection to the home meant that this was unlikely to happen:

> Quite a few houses you walk in and you think, this house is beyond saving, it's going to take so much to actually bring it up to a decent standard. Why wouldn't you just move on? Or why wouldn't you just knock it over and start again? But, you know, I can understand. Because that is their, like, turangawaewae [place of belonging], that's where they've had so many memories, and their whole life is tied up into that place (S02).

> Mama and Papa probably need a whole new house because the house is not even liveable, but for them, they still want to live there because that's their pride and joy (S01)

Inaccessible living environment

Accessibility was another key concern of PHH clients. This was in some cases linked to disrepair, as already noted, where access ways are rotten and difficult for someone with mobility issues to access. For the most part however it came up in relation to how bathrooms that did not suit changing needs:

> [Accessibility is] often something they'll raise when we're there something they'll point out and it's I think for them it's quite often the priority (S02).

For C11, the second storey was difficult for him and his mother to access:

> [A] lift. That would be awesome. That would be so useful. Yeah. Yeah, my mum says that too. She wishes she had one because she has arthritis, so it's quite difficult for her to get around. But yeah, a lift would be great to have. But there's no room (C11).

C01 mentioned wanting to renovate the bathroom and that it was an issue he had raised with staff. His wife had a blood clot in her leg and had to use crutches. At times, when the swelling and pain was worse, they had to borrow a hospital wheelchair. Sometimes, "maybe not far away" he knew that would have to install an accessible shower. However, he could not currently afford to:

> She's asking me a lot of times. She wants a proper shower. So that's another thing. I'm still trying to finish the mortgage and trying to save some money, yeah (C01).

The shower was a priority for another participant. Both he and one of his children use a wheelchair:

> I'd love to change the shower…[to] make [it] easier so I can go in with my crutches, with my wheelchair (C04).

Access was also a problem for this participant. Some internal doors are too narrow for his wheelchair. Regarding external access, the house had had a ramp installed for his son, but it was not too narrow

for C04 to use safely. He cannot enter the house by himself, but needs a family member to be with him so that he does not roll backwards and hit his head:

> The ramp is not not big enough… I can manage because I'm a good driver…I can manage to go in instead of slipping to the side... I push myself… And I can manage to roll my wheelchair with care… if my wife or my kids can stay behind the back to make sure that I'm going in properly. Otherwise I'll reverse back and, you know, and fall and hit my head on the ground…Most of the time they'll be alright with [doing that for me] (C04).

It is notable that, despite the participant's positive framing – "I'm a good driver", "most of the time they'll be alright" – he is unable to access his home safely and independently.

C06's experience exemplifies how family's changing needs dictated housing investment decisions. This participant had bought the house with her father's needs in mind. She had renovated the bathroom when her father was alive, to make it accessible to his wheelchair. Now he had died she wanted to renovate it again, so that the bathroom and toilet were separate, to make the house more usable for her and her brother.

Inadequate space in the home

Staff observed that some PHH households had inadequate space – "most of our houses are overcrowded, so we're like 3 or 4 families in the homes: (S01). Another participant recalled a family that she'd recently visited "15 in a three-bedroom home" (S03). Staff observed that some households had renovated the house to accommodate more people:

> Quite often you see, like they might've done an informal, shall we say, extension or addition. Or might have converted a different space like a garage into a living space or a bedroom… There's a wide range of quality to what people do. Some of it's real bad, real dodgy, and some of it's like, more or less up to scratch (S02).

Many of the client participants lived in multi-family households. In most cases, however, the houses were sufficiently large to comfortable house the occupants. C06 for example described her "big house, very spacious", with an upper-storey extension. Multi-family living was valued by participants in most cases. For example, C08 had recently had an operation, and her child and family had moved in to help her:

> They are here to assist me with the food, washing and all that at the moment (C08).

There was one exception to this. C01 felt his home was not big enough for the extended family he lived with. He shared that he felt his home was crowded and stressful. While he wanted some family members to move out, in part so that the three children could have their own rooms, it was difficult because the children's parent was trying to save money.

The impact of housing conditions on people's wellbeing

Participants suffered from a range of health conditions. We did not ask specifically about health, but it came up in conversation – mentions of blood clots, cancer, COPD, strokes, disability, for example. We did ask if they thought their housing conditions affected their health. In response to this question, some participants spoke about the health of others in the households, in particular, children:

> Just the kids [are] always sick, they cough… because of the cold of the house. So, they're always sick and their mum always takes them to the hospital (C01).

> [My father] had blood cancer, but I'm not sure if anything's contributed in the house to that, like mould or anything… And our daughter had asthma, has asthma, but she's moved out. Yeah, but I don't know if there's contribution [from] the house (C03).

Two of the participants said that their children (who are now adult) had rheumatic fever due to the housing conditions:

> I don't really know. Yeah. That's how he got it [rheumatic fever] because of maybe the cold (S05)

> Our kids have suffered through skin conditions. I'm not too sure whether it's anything to do with the housing, but yeah. Ae honey, our kids, have they suffered much through the poor housing? (C09)
> Yeah, our daughter had [a] heart mover, rheumatic fever (C10)

Reflecting on the home already discussed, with the "collapsing ceilings", which housed an elderly couple, a staff participant reflected that the impact on the household went far beyond health or comfort:

> They've got a lot of extended whānau, …they can't have them in the house. Basically they can't have them the mokos [grandchildren] just stay over for the night because, you know, it's not safe for them. And I could just see that that was absolutely heart breaking…So for her to be able to have your grand babies to stay the night would be a dream come true…But at the same time, she's very aware that they can't be there because they've got all this black mould in the house and that's just not a healthy environment... The wairua [spirit] [was] completely bottomed out, you know, like not being able to have the family in the house (S05).

Not being able to have people, and particularly their grandchildren over to the home because of the conditions, was very difficult for these PHH clients.

4.3 Insights on PHH, its impact, and its limitations

The importance of a trusting relationship between staff and clients

Staff spoke about the importance of taking their time to form a trusting and comfortable relationship with clients to talk about their housing conditions – which could be a sensitive topic.

> I take my time with them (S03).
>
> You're welcomed into their house. And they're embarrassed about what's going on. You can't rush that conversation. It's just, yeah, it's just disrespectful to old folks (S05).
>
> You need to make them feel comfortable and just remember you're in their home. You should feel, I don't know, humbled by being invited into their home… And that means you better show respect (S04).
>
> So when I'm talking to the oldies and everything, it's with respect and with like, I'm talking to my grandma and my grandpa and everything… It's just making them comfortable (S01).

Several staff members talked about gaining that trust through sharing their own stories about housing:

> I don't have problems connecting with our people because I've been through [it]. I've lived in Kāinga Ora homes before. I've lived in run-down homes….I tell my story first, so they know where I'm coming from and then that's where the connection comes from (S01).
>
> I've got lots of lived experience. That's something that's massive. It's just being able to say to people, "why I used to live [where] the condensation dripped on my head in the middle of the night". People are like "oh!". It's like yeah, I know what you're talking about… I'm a real person. I'm here to help. (S05)

This helped overcome the feeling of shame that some clients had at the state of their homes. For some PHH participants, the house was in such bad condition that they did not usually have visitors. S05 reflected on one participant who almost cancelled their PHH visit because of his shame: "there's no bringing anybody in because they're just ashamed of what the inside of their house is like" (S05). S01 agreed:

> [The] challenge I guess for our families is just showing us where the repairs are and everything are, because they do like to hide everything. So it's just… if there's a hole in the wall, not to cover it. Or there's if there's broken steps outside… not to cover it (S01).

It was vital to be in the home to assess clients' needs, in part to overcome that shame and understand how people were living. One staff participant, who saw people in her office in her other roles, saw that it made a big difference to be in the home for PHH:

> When we actually sit in the home, see how they're living, go in the bedrooms, see how the kids are in everything, [it] tells a different story (S01)

The interviews with the clients showed that they indeed felt comfortable and at ease with the PHH staff:

> Very happy about [the assessor]. He knows our way. He was very open (C12).

> We were delighted with our interaction with the programme (C09).

> Just the guy that did the [assessment] was awesome… We felt he was just that type of guy that knew those sorts of things, and you feel comfortable as soon as you sat down and started talking about it. I was just like, "wow". You know, some people, you, you hold back. But this was really good. He did a really good job (C07).

> I was very happy to welcome [him] in and he [had a] very nice and warm welcome nature (C08).

Some staff members shared that it in their perspective, ideally the timeline should be more condensed: that the PHH assessment/s should occur soon after referral, and that follow-up repairs should occur soon after that assessment. This was not always possible because of the high demand for the services of tradespeople. Perhaps surprisingly, given this, none of the interviewed clients expressed disappointment or frustration at the speed of the process. Client perspectives on the PHH were uniformly positive.

This positive perception was shaped by a deep gratitude that the support was available: "just very, very grateful to have come across this service" (C10); "just really, really happy and blessed, you know, that I've got to go through this programme" (C07); "we never, ever thought we're going to get this kind of help." (C06). One participant, C01, described how when the heat pump installers arrived, he could not believe that this it was free to him, and would not let them begin until he called the office to check.

Home is now warmer, drier and safer

Most of the client participants described their homes as warmer and drier after PHH intervention. These positive changes were ascribed to the installation of curtains, heat pumps, insulation, extractor fans and repairs. Repairs were particularly important. Some draughts could be dealt with during the visit through installing draught tape or adjusting the window. Usually however it required a follow-up visit by a builder.

Improvements to warmth

One participant's account sums up some of the typical changes that improved the warmth of the home – fixing a heat pump, repairing windows, and topping up insulation:

> Before because it was cold before….Now we can feel that the house is warm all the time. My wife always says, "oh the house is warm" (C01).

Another participant account speaks to the importance of curtains to retaining warmth:

> No more black mould coming out of the wall in the bathroom as soon as the thermal curtains went up. The next morning I couldn't tell whether it was day or night, it was just a blackout and warm in every room. The outside of the house looks better with the holes done up…. There's a change in temperature in the house… The curtains, just instant warmth… The curtains make a huge difference… We didn't realise this before but our house was so cold before the curtains. So that's made a difference (C03).

Other participants attributed the increased warmth in the house primarily to window repairs:

> I always feel it when I walk downstairs. When I open the door from upstairs to go downstairs, you can actually feel the warmth. So those little things counted. It's not replacing the whole window, it's just getting it fixed by putting the rubber around the window itself and changing little things (C07).

For others, the heat pump made the difference:

> I'm really happy with what they've done. My home is warmer now, warmer than before… Thank God…this programme [gave us] a heat pump… It will be nice now, while we've got that heat pump and windows…all tightened, because…the old window was so hard to close (C06).

> The impact of the warm air [from] using [the] heat pump is a bit better (C08).

One participant, who regularly hosted church members in his home, pointed out how visitors to his home noticed the difference. Previously, they had worn layers of clothing and blankets when they visited, but now "it's like you're in the island, in a tropical island, you know, very warm, very nice, you know". He reflected:

> It's not only me who benefits from this, but also the members of the church and community and yeah, they come over here and they can…feel the warmth because of this programme (C01).

One participant remained concerned about the warmth, despite the new heat pump. She was concerned about the cold air that the unused fireplace let in: "Some nights I do need another heater for the cold months that are coming" (C08).

Dryness

Participants drew attention to changes that made it easier to manage moisture levels in the home and reduce mould:

> Since the replacement of the hinges, the window hinges. I'm happy to open the window… I open the doors so that I can get more fresh air (C08).

> The extract fan inside the bathroom was a huge help in terms of reducing mould (C10).

Fire safety

Fire safety was raised by some of the staff participants as a major concern:

> Just about every Pasifika whanāu-owned home either don't have smoke alarms or the alarms they do have the battery's gone or they're faulty… Just about every house to go into for this project, but I'm putting up to three smoke alarms (S02)

Some of the client participants discussed how they valued the smoke alarms that the assessors, and in one case, the fire brigade, put up or fixed smoke alarms:

> And then that a fella came and he said, "oh man, you should have some smoke alarm, with the kids"… Then the man came and put one smoke alarm in the hallway (C01)

This assessor also ensured that exit ways were cleared.

Health and wellbeing improved

Improved health

We asked clients if they had noticed differences to health. Some people noticed immediate health benefits:

> We have noticed that we obviously we feel healthier. Yeah, we do. We do feel healthy, and we were happy with the result (C02).

> Just the kids they always sick, they cough. And you know, because of the cold of the house. … So, they always sick and their mum always takes them to the hospital. Yeah, but now [they're] very good (C01).

> Yes, yes, much improvement. Specifically [in] wintertime they come, they sneeze and yeah. But now it's quite good. Must be the house, you know, insulation and this [heat pump] (C01).

This participant knew other households that had been through PHH and had observed how they seemed happier now:

> Some of them, they used to meet them down the centre, they looked sad and…unhappy. But now when you see them, they [are] smiling. Like my friend - yes, he used to talk to me about his house is quite cold and things like that. But now he's same…as me. His spirits are lifted (C01).

The participant also observed that being in a better home led to a more positive outlook on life:

> Thank you [to the programme]. Everything's really good. Really happy. Yeah. Once you're happy, no more stress, you know, and your life is all smooth. Everything's good. Because once your house [is] nice, it will affect the way you're thinking. You know, it's quite good. You know, you do things in good ways. You know, you keep away from troubles and things like that because you're quite happy (C01).

Other participants thought that it was too soon to tell whether PHH made a difference to health, given the worst of winter was still to come: "Still not winter. We hope that [the temperature] will be changed" (C12). Another participant thought it would help, though:

> My family is quite young and healthy, but I know with what [the PHH workers] have done, it'll keep us from going to visit the doctor… We won't be as sick like with the flu and all that. We'll be sleeping warmer at night…My family is in in good hands. You know, I'm sure we're good for a couple more years and not get really sick (C06).

Reduced bills

Participants thought that the improvements to the home would help reduce energy bills, although they would not know until winter:

> Winter's yet to come, but just with the way the curtains are, I believe they will save on our electricity bill (C03).

> We have to look out [for] that on our next bill (C12).

> I think by the time the winter comes, [the bill] may be a lot better. We'll wait and see (C08).

Able to use more parts of the home

Some participants were able to use the house differently due to the improved warmth: "my son will sleep downstairs" (C07). One participant, who had had her bathroom renovated, as well as other improvements, reflected on the change:

> I move around now. I don't stay in one room. I come here [dining area], enjoy the sunshine, have a cup of tea in the kitchen or in the bedroom too, you know. And then out here, I never stay in my room. Or sometimes I feel like going in my bathroom (laughs) (C05).

Finally, a participant mentioned that, now the house was warmer, the children in the household were happier to be in the living area:

> They're quite happy to do their homework and things like that in the sitting room and watch a little bit of kids' programme on TV. But before you know, they want to go in their rooms, when they get here (C01).

These accounts speak to the different ways wellbeing can be improved through improved housing.

Limitations to PHH

We identified two key limitations to the programme that challenged its effectiveness: working with private landlords, and the amount of funding available for a given household.

Landlord reluctance to implement housing improvements

Making change to rental housing presented other challenges. Staff came across houses which did not meet the healthy housing regulations: "it's like it's all very well having, you know, compulsory requirements. But who's actually enforcing it? And this is up to the likes of [us]: (S02). Yet in some cases, tenants did not want PHH staff to ask the landlord to make the improvements to meet legal standards:

> Some will like us to talk to the landlord about what we found and others are quite scared, if you get what I mean, because they don't want to ruffle the feathers with the landlord (S04).

In other cases, the renters had previously talked to the landlord about making improvements but they had not been made:

> They've raised this issue this problem with the landlord so many time and it's still not sorted (S02).

> They've talked to the owner, the homeowner, and he still hasn't come back to [them] to make it comfortable for him" (S04).

This finding supports research on the HHI which has found that private landlords' unwillingness to implement changes is a key barrier to improving housing (Chisholm et al., 2020, 2024).

If clients lived in Kainga Ora housing, however, it was easier to make improvements. One staff participant described a Kāinga Ora house with leaks and broken windows. She sent a report to Kāinga Ora and they did the repairs within two weeks: “they’re awesome to work alongside” (S01).

Limited funding per house

The second challenge to PHH’s effectiveness was that due to the extent of the problems in some homes, PHH funding was insufficient to resolve them all:

> The need…exceeds what we've got, right? I mean, you know, pretty normal situation but, if you're talking about windows and those types of repairs, like, you know, the house has a dozen windows, it might be a few $100 per window (S02)

In these cases, PHH staff had to prioritise the most urgent problems:

> It's like, we've only got limited funding. You know, I can’t. As much as I would love to be able to fix everything, we've got to prioritise what's going to be…the best thing to fix to then make everything else easier (S05).

> So you might have half a dozen things that that need fixing, but then we look to prioritise what is the most…urgent (S02)

Given this, it may seem possible that clients would feel disappointed by what PHH could not fund. However, none of the clients we interviewed expressed disappointment. PHH staff had given clients a clear understanding of this limitation from the beginning. As one client recalled,

> They just looked around and sort of like asked what I thought needed to be done. And then they said, “there's a restriction on the budget”… I couldn’t paint the house… Or even just do the roof (C09).

> So [they] have a look at the house first and what they can do. They can fix things. And they'll look at urgent things that needed to be done. But it's not that they're going to come and do everything for us. It's just little things that can help make the house warm (C06)

Despite this, this participant was pleased to receive advice on the roof and noted that, even though it couldn’t be funded, it was useful to know so they could plan for it: “in some ways, it's good for us to know… [from] professionals, not…Uncle Billy” (C09). As a staff participant put it:

> We might not necessarily be able to fix all of the problems in the house. But you've given them a start and you've given them information to go forward and make sure that their house is nice and tight and nice and healthy (S05).

Nevertheless, it was difficult for staff to see these problems and not help more:

> I feel for those families because I understand. Yeah, they've put how much money and blood and sweat into their home to see it like that now. And now there's no help out there (S01)

> It's just sort of hard to yeah confront the fact that you know we can't we're not going to be able to help everyone in the way they most need (S02).

> It's been good sad too, you know, sad too because some of the conditions of the homes that they live in is just so sad (S03).

One staff participant described an assessment visit where the roof had major problems. The client was grateful for the work the PHH had done. Reflecting on that gratitude, the staff participant said:

> It's really touching, but it was also like heartbreaking at the same time because there's no guarantees that we could help him. So that that really hit me quite hard, to be honest, and it's still quite hard for me to do… (S02)

Reflecting this, when asked for their ideas about how to improve the programme, staff participants wanted more funding to improve the homes:

> My hope is that the next funding [round], they're going to rethink and reconsider the amount and give them a bigger amount of funding to help our Pasifika people…You know, they don't have the money to fix what needs to be fixed (S03).

> Just more money, more money (S02).

> My hopes are that [PHH] gets extended and it gets more money (S05).

Our client participants did not share any disappointment in the PHH. However, it is worth noting that at the time of the interview some of our participants still experienced problems in their housing. Due to mobility issues, C01 could not easily enter his home or use his bathroom. C01 still lived in a home that was inadequate for the size of his extended family (it is not clear whether the assessor was aware of his dissatisfaction; it may have been that the PHH could have helped the family that lived with him access the social housing register). C08 still had a fireplace installed in her home that she felt let a lot of cold air in. These continued inadequacies in the homes of participants speak to the importance of increasing funding to the PHH.

Despite this, and given the benefits they discussed, clients' only significant feedback on the programme was that it be extended:

> I'm just saying to myself, man, you know if a lot of people out there knew this was offered. You know, this was out there to be offered to families. There will be a lot of happy families in Porirua if they had this done to their homes (C06).

> It would be great if people knew about the service. We've got a few family members who own their own home, but when you go to their homes, they usually need a lot of help. They don't know about these services (C10).

Participants' perspectives revealed deep support for the programme, its continuation and expansion.

5 Quantitative results

5.1 Cohort demographics

Table 1 Characteristics of Study Cohorts

		Pacific Older Adults Cohort		Pacific Older Adults' Households Cohort	
		Count*	Relative Percentage (%)	Count*	Relative Percentage (%)
Age at earliest intervention	<8	-	-	9,159	33.4%
	9-13	-	-	3,381	12.3%
	14-25	-	-	5,385	19.6%
	26-44	-	-	4,626	16.8%
	45-50	1,227	29.3%	1,488	5.4%
	51-64	2,100	50.2%	2,313	8.4%
	65+	855	20.4%	918	3.3%
	Born post-intervention	-	-	186	0.7%
Sex	Male	2,055	49.1%	13,029	47.5%
	Female	2,133	50.9%	14,427	52.5%
Ethnicity**	Māori	147	3.5%	6,642	24.2%
	Pacific	4,185	100%	22,395	81.6%
	European	141	3.4%	3,474	12.7%
	Asian	30	0.7%	639	2.3%
	MELAA	12	0.3%	228	0.8%
Tenure	Owner occupied	858	21.6%	4,782	23.7%
	Private market rental	1,170	29.4%	5,850	29.0%
	Kāinga Ora – Homes and Communities	1,848	46.5%	9,087	45.0%
	Other	99	2.5%	483	2.4%

Table notes: *Unweighted counts have been rounded for confidentiality **Total response; multiple ethnicities allowed.

Approximately 4,185 individuals aged 45 years and above and of Pacific identity were identified from the primary HHI cohort. Over half of the cohort were aged between 50 and 64 years of age and one in five were over retirement age. As expected from the inclusion criteria, everyone in the cohort identified as Pacific. Only a small number of individuals noted additional ethnicities. Participants were most likely to reside in social housing.

Linking these individuals to their census households generated a study cohort of 27,453 individuals. Whilst sex and tenure remained similar, the age and ethnicity distributions differ. For the linked study cohort, the Pacific Older Adults' Households Cohort, the age distribution is far younger and dominated by those aged under 25 years of age. Additionally, almost 200 individuals in this cohort were born following the household HHI intervention. Meanwhile, the ethnic distribution is far more

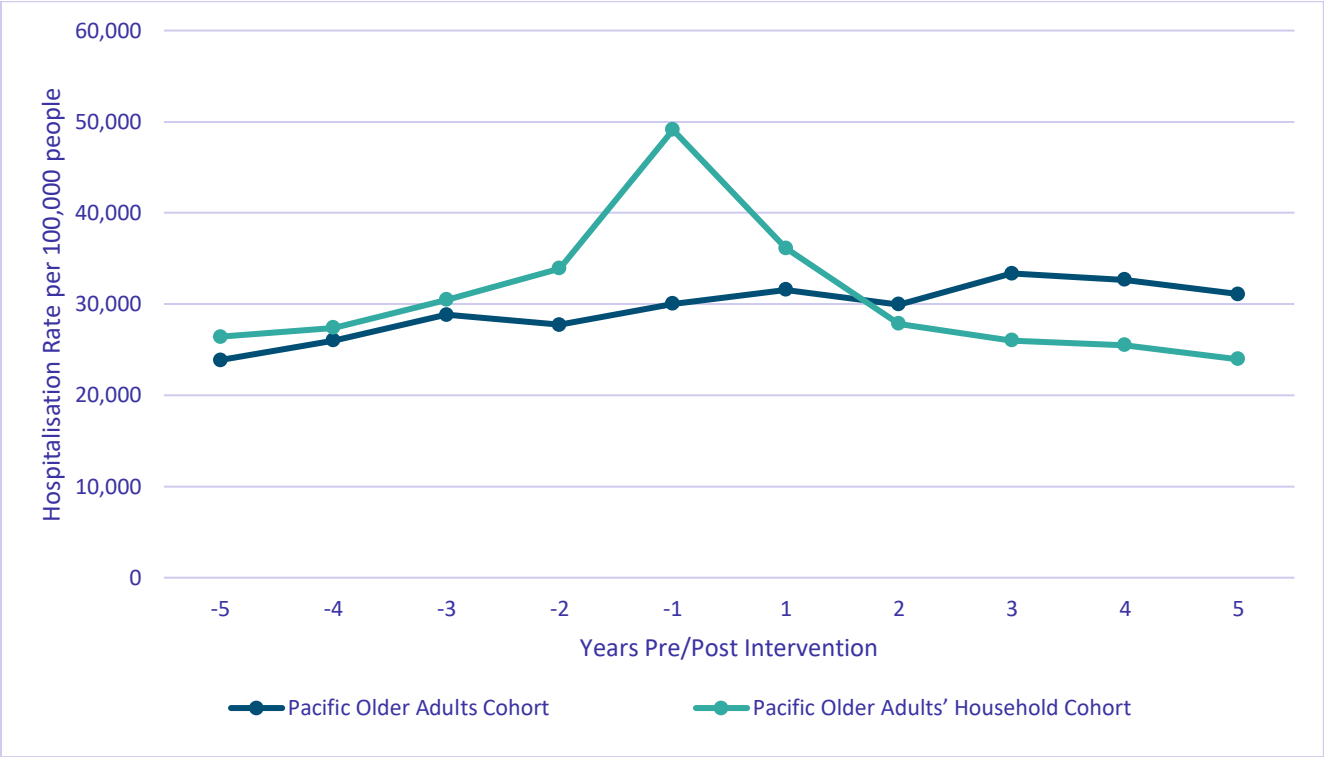
mixed. Over 80% of this cohort identify as Pacific peoples, and there is greater representation of both Māori and European individuals.

5.2 Health Outcomes

Hospitalisations

For individuals in the Pacific Older Adults' Households Cohort, hospitalisations reflect patterns observed in the five-year HHI outcomes evaluation (Pierse et al., 2024). Hospitalisations increased over the five-year pre-intervention period, reaching a maximum at one year pre-intervention of almost one hospitalisation per every two people. Post-intervention trends reflect a dramatic decrease, particularly in the first two years following the HHI intervention. Observed patterns for the Pacific Older Adults Cohort are notably different and showed a continuous increase over the ten-year study period with slight fluctuations.

Figure 1 Observed hospitalisation rate for study cohorts pre- and post-intervention



In the Pacific Older Adults' Households Cohort, the HHI was associated with an 18% average reduction in all-cause hospitalisations in the five years following an HHI intervention compared to the five years before (Table 2). This was reflected in the incident rate ratio (IRR) of 0.821 (CI: 0.80, 0.85) which was highly significant with a p-value of less than one in ten thousand. Analysing each year separately, the maximum reduction was in the third year of the post-intervention period with a reduction of over 25% attributed to the HHI programme (IRR: 0.739 [CI: 0.7, 0.78]). From years two to five post-intervention, confidence intervals indicate no significant differences associated with the HHI intervention.

Table 2 Results of modelling hospitalisation numbers for linked household cohort

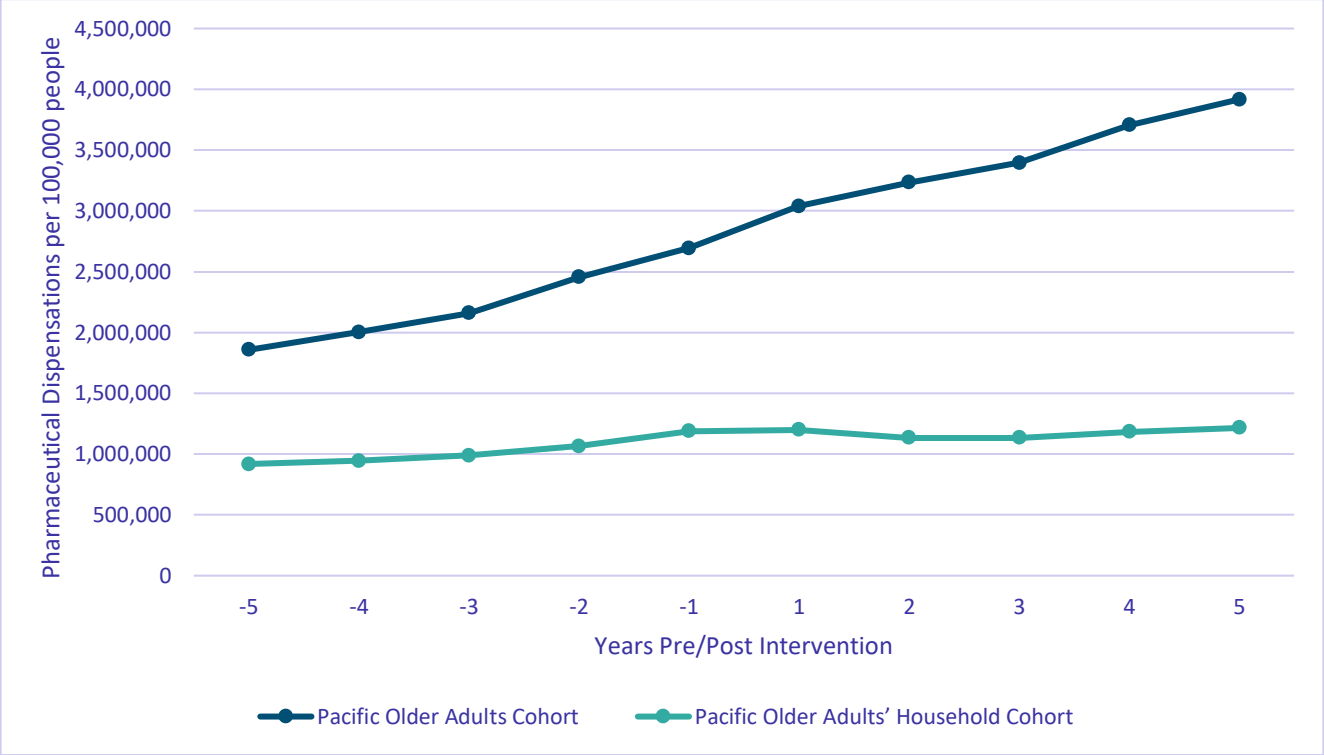
Model term	Incidence Rate Ratio (95% CI)	P-Value
Average HHI variable coefficient	0.821 (0.796, 0.846)	<1:10,000
HHI variable coefficient (+1 year)	0.963 (0.923, 1.00)	0.08
HHI variable coefficient (+2 years)	0.773 (0.735, 0.812)	<1:10,000
HHI variable coefficient (+3 years)	0.739 (0.700, 0.781)	<1:10,000
HHI variable coefficient (+4 years)	0.754 (0.711, 0.799)	<1:10,000
HHI variable coefficient (+5 years)	0.747 (0.698, 0.797)	<1:10,000

The 18% reduction in hospitalisations indicates that the HHI programme was associated with an estimated 8,778 hospitalisations prevented per year in the linked household cohort. Using the pilot programme size of 600, this model predicts that 959 hospitalisations will be averted in the five years following housing interventions.

In the Pacific Older Adults Cohort, modelling showed that the HHI was not associated with a significant change in all-cause hospitalisations over the ten-year study period.

Receipt of Pharmaceuticals

Figure 2 Observed pharmaceutical dispensation rate for study cohorts pre- and post-intervention



Trends showed that the observed number of pharmaceutical dispensations rose over the ten-year study period for both cohorts under investigation. Both patterns were approximately linear, however, the increase in dispensations per year was much higher for the Pacific Older Adults Cohort than the Pacific Older Adults' Households Cohort.

Statistical modelling showed that the HHI programme was associated with an 8% increase in pharmaceutical dispensations for the linked household cohort (Table 3). This is indicated by an IRR of 1.08 (CI: 1.06, 1.11) with an associated p-value of less than one in ten thousand. Furthermore, whilst estimates for the IRR appear to increase yearly, confidence intervals show that the variable estimates are not significantly increasing over time.

Table 3 Results of modelling pharmaceutical dispensations for Pacific Older Adults' Households Cohort

Model term	Incidence Rate Ratio (95% CI)	P-Value
Average HHI variable coefficient	1.08 (1.06, 1.10)	<1:10,000
HHI variable coefficient (+1 year)	1.08 (1.06, 1.11)	<1:10,000
HHI variable coefficient (+2 years)	1.06 (1.03, 1.08)	<1:10,000
HHI variable coefficient (+3 years)	1.06 (1.03, 1.09)	<1:10,000
HHI variable coefficient (+4 years)	1.10 (1.07, 1.13)	<1:10,000
HHI variable coefficient (+5 years)	1.13 (1.01, 1.17)	<1:10,000

The HHI variable was also attributed with an increase in pharmaceuticals in the older Pacific adults' study cohort (Table 4). As with the observed pharmaceutical dispensation rate, the coefficient associated with the HHI variable is estimated to be higher for this study cohort with an IRR of 1.14 (CI: 1.10, 1.18). This result infers that the HHI programme variable within the statistical model is associated with a 14% increase in pharmaceutical dispensations for Pacific older adults.

Table 4 Results of modelling pharmaceutical dispensations for Pacific Older Adults Cohort

Model term	Incidence Rate Ratio (95% CI)	P-Value
Average HHI variable coefficient	1.14 (1.10, 1.18)	<1:10,000
HHI variable coefficient (+1 year)	1.11 (1.06, 1.17)	<1:10,000
HHI variable coefficient (+2 years)	1.12 (1.07, 1.18)	<1:10,000
HHI variable coefficient (+3 years)	1.12 (1.06, 1.18)	<1:10,000
HHI variable coefficient (+4 years)	1.17 (1.11, 1.24)	<1:10,000
HHI variable coefficient (+5 years)	1.20 (1.14, 1.27)	<1:10,000

GP visits

Observed rates in GP visits over the ten-year study period shared similarities with both the observed hospitalisation rate and pharmaceutical dispensation rate. The shape of the trendlines reflected the patterns in hospitalisations. However, the observed gap between the two cohorts was comparable to trends displayed in the pharmaceuticals data.

Statistical modelling showed that the HHI variable was associated with a decrease in GP visits of approximately 3% for the Pacific Older Adults' Households Cohort with an IRR of 0.968 (CI: 0.96, 0.98) (Table 5). This was statistically significant with a p-value of less than one in ten thousand, indicating the result was unlikely due to chance. Further modelling showed that the HHI intervention may be most impactful in years two to five of the post-intervention period, reflecting an approximately 4 to 5% decrease in GP visits and non-overlapping confidence intervals. The first year of the post-intervention period was associated with a small decrease in GP visits (IRR: 0.992 [CI: 0.98, 1.0]) but this was non-significant with a p-value of 0.338.

Figure 3 Observed GP visit rate for study cohorts pre- and post-intervention

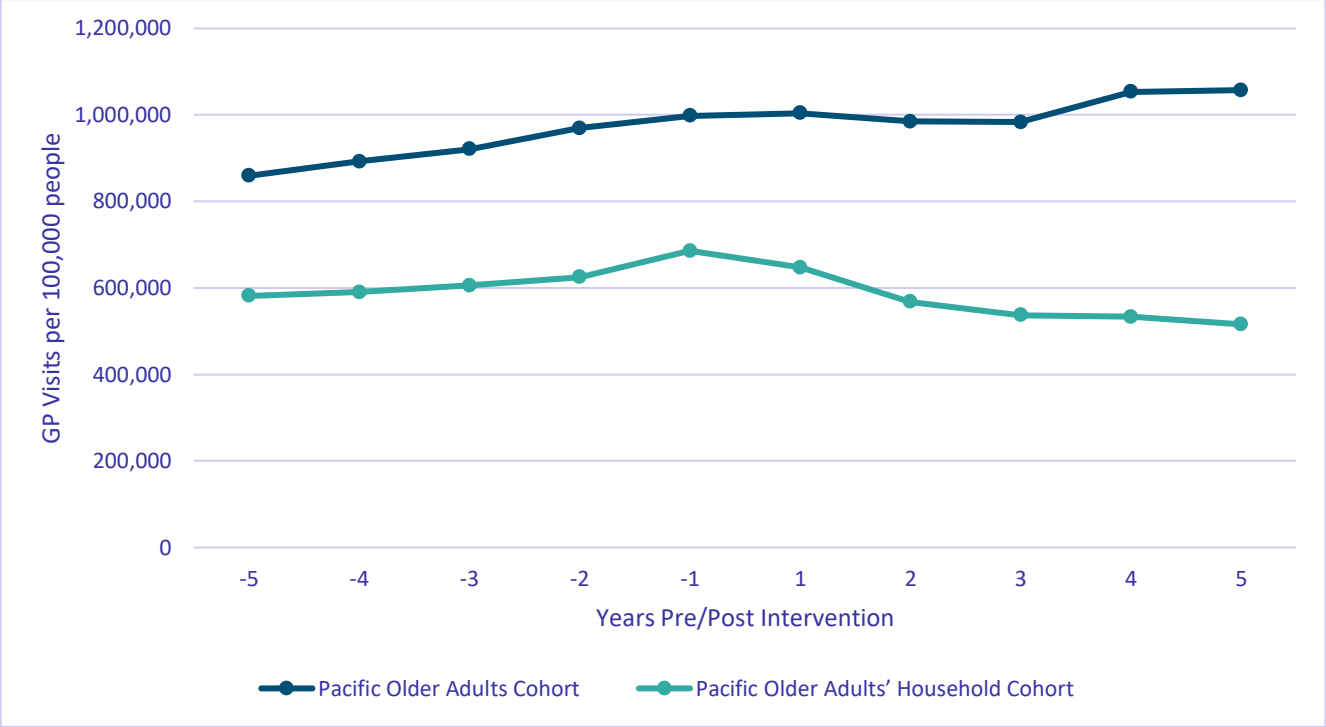


Table 5 Results of modelling GP visits for Pacific Older Adults' Households Cohort

Model term	Incidence Rate Ratio (95% CI)	P-Value
Average HHI variable coefficient	0.968 (0.957, 0.979)	<1:10,000
HHI variable coefficient (+1 year)	0.992 (0.977, 1.01)	0.338
HHI variable coefficient (+2 years)	0.952 (0.935, 0.968)	<1:10,000
HHI variable coefficient (+3 years)	0.953 (0.935, 0.971)	<1:10,000
HHI variable coefficient (+4 years)	0.966 (0.946, 0.985)	<1:1,000
HHI variable coefficient (+5 years)	0.959 (0.937, 0.981)	<1:1,000

As with hospitalisation modelling, no significant change attributable to the HHI effect was detected in the Pacific Older Adults Cohort over the ten-year study period.

5.3 Economic Outcomes

Income

Figure 4 Income received for study cohorts pre- and post-intervention

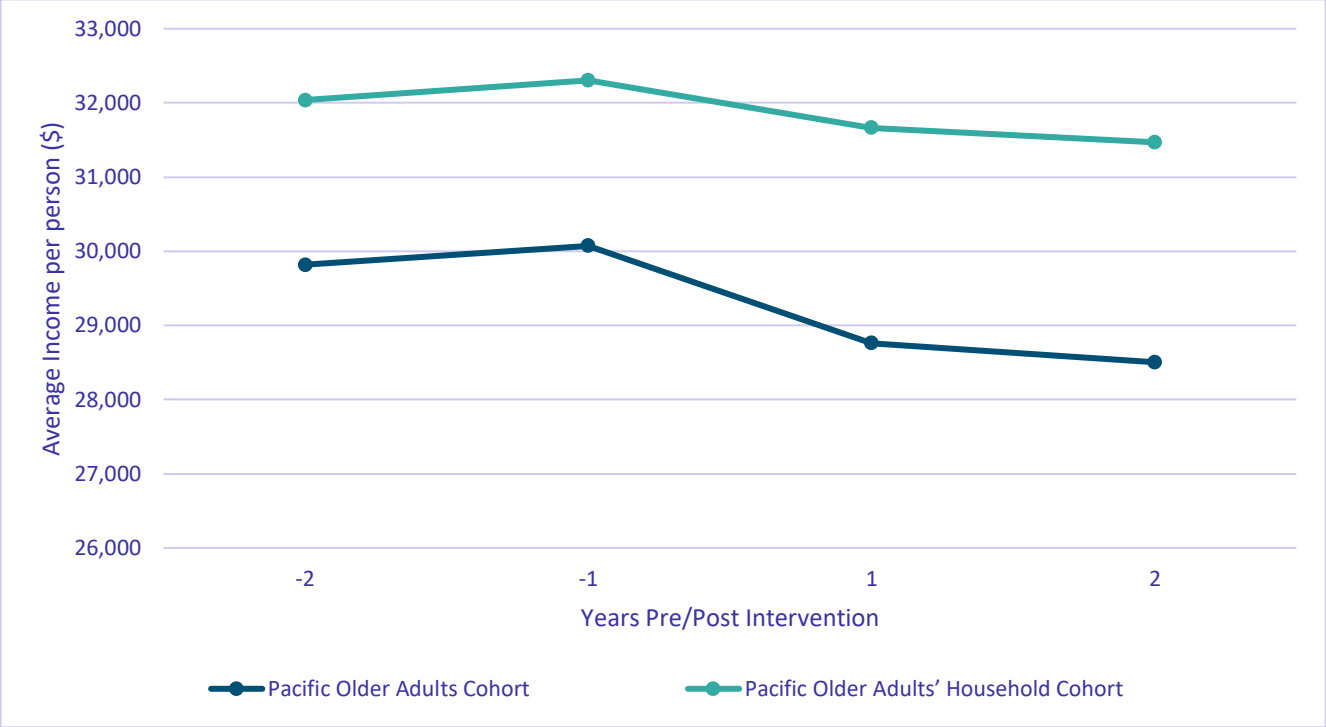


Table 6 Results of modelling recorded income for Pacific Older Adults' Households Cohort

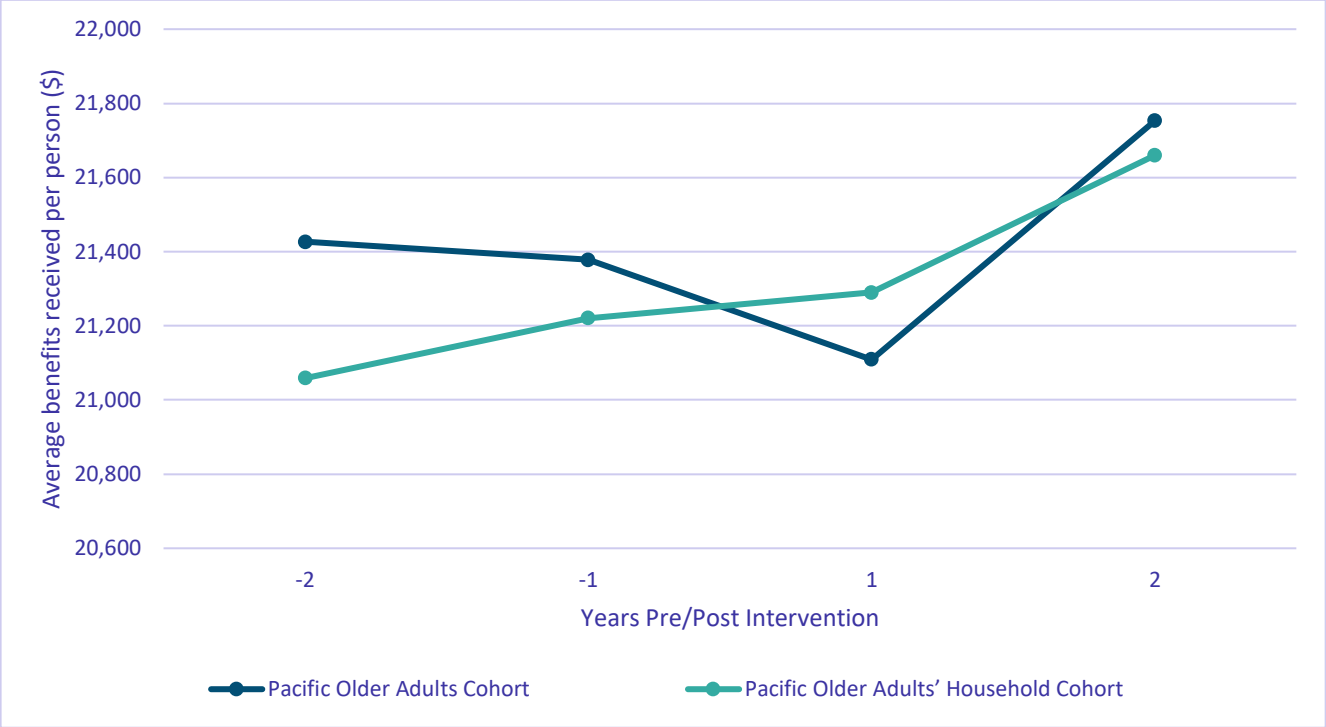
Model term	Incidence Rate Ratio (95% CI)	P-Value
Average HHI variable coefficient	0.984 (0.971, 0.998)	0.02

Income trends for individuals, measured by wages and salaries, were similar for the two study cohorts for the four study years evaluated. Despite a small increase in the pre-intervention period, general trends showed a fall in income. For the Pacific Older Adults' Households Cohort, the decrease in average income was roughly $500 per person per year. For the Pacific Older Adults Cohort, the decrease was approximately $1,300 per person per year.

Modelling of income showed that the HHI variable was associated with a less than 2% decrease in income. This was indicated by an IRR of almost 1 (IRR: 0.984 [CI: 0.971, 0.998] with an associated p-value of 0.02. The HHI variable coefficient for the Pacific Older Adults Cohort was estimated at less than 5% with an IRR of 0.961 (CI: 0.94, 0.98).

Benefits

Figure 5 Benefits received by study cohorts pre- and post-intervention



Trends in benefits received for individuals behaved differently to income received from wages and salaries. Whilst income, on average, trended downwards, benefits received trended upwards. For the Pacific Older Adults' Households Cohort, this is a monotonic trend (always increasing), whilst the Pacific older adult cohort saw a decrease of approximately $300 between the pre- and post-intervention periods (years minus 1 to plus 1), before increasing.

Table 7 Results of modelling benefits received for linked household cohort

Model term	Incidence Ratio (95% CI)	P-Value
Average HHI variable coefficient	1.01 (1.00, 1.02)	0.01

Statistical modelling of benefit data estimated that the HHI variable was associated with a 1% increase in benefits received for the linked household cohort. This is indicated by the IRR of 1.01 (CI: 1.00, 1.02) which was statistically significant with a p-value of 0.01. For the Pacific Older Adults Cohort, the HHI was not associated with any significant changes in benefits received over the four-year study period.

6 Discussion

This evaluation showed that healthy housing interventions improves the wellbeing of Pacific peoples and their families. Such initiatives are in line with the strategic focus of the Ministry of Pacific Peoples (Ministry for Pacific Peoples, 2025).

Qualitative evaluation

The qualitative analysis drew on interviews with staff and clients involved in the year-long PHH pilot. The analysis showed that, prior to PHH intervention, older Pacific peoples were living in housing that did not meet their needs. Housing was cold, sometimes lacked heating and insulation and often was structurally deficient. It was common to have windows and doors that did not open and shut properly, which meant that people could not warm or ventilate their homes. In more serious cases rotten floors and stairs, leaks in roofs and holes in walls prevented people from warming their home, safely accessing their home or using certain rooms. Clients experienced health and mobility challenges and reported that housing had harmed the health of their children.

PHH improved housing conditions for older people in several ways. The raft of potential housing interventions available under PHH has already been summarised; in the interviews, however, both staff and clients emphasised the interventions that related to housing repairs (especially windows) and accessibility, and, to a lesser extent, heating and insulation. Clients reported that their homes were warmer, drier and had less mould, because of PHH fixing windows, providing heating, insulation, and/or curtains. They reported that they and their households were happier and healthier, and that they and their guests were more comfortable in the home. Some expected to be warmer, healthier, and have reduced energy bills over the coming winter. While most clients were satisfied with the improvements to their home, some expressed continuing concern about cold, disrepair and accessibility.

Client participants were unanimously positive in their views of PHH staff, processes, and service, including timeliness of the PHH visits and the delivery of interventions. Clients reported that they knew many other households in the community that would benefit from PHH intervention and expressed hopes that PHH would continue. Staff had positive views of PHH and were appreciative for the fact that PHH enabled them to address a pressing need in their community. The most difficult aspect of their job was not being able to do more to improve the housing of PHH clients and the wider community.

Advantages and limitations of the qualitative analysis

The qualitative study had the advantage of a range of participant responses, representing staff and clients, from the two case study areas. It was limited by the fact that the intervention was delivered only recently when the interviews took place (and in some cases, not all the interventions had been delivered), and before participants had experienced a winter after PHH intervention. This was the inevitable result of the short timeframe to conduct the evaluation. Further limitations were that we

only interviewed clients who were homeowners. Renters should be included in the pool of participants in future evaluations.

Quantitative evaluation

The quantitative analysis considered the effects of the HHI on older Pacific peoples and their households. The HHI is a similar yet distinctive housing intervention to the PHH. The HHI is targeted at children and provides some similar interventions to the PHH – such as healthy housing education, bedding, access to heat pumps and insulation and draught stopping – but with less funding per household. The HHI would not usually fix structural deficiencies or install extractor fans, as the PHH did, for example.

The analysis showed that the HHI significantly improved health for the households of older Pacific peoples. HHI intervention is associated with a 25% reduction in all-cause hospitalisations over five years for people in the households of Pacific peoples aged 45 and over. Health as measured by GP visits and pharmaceutical dispensing also improved. There were also small economic improvements for participating households, as measured by benefit and income levels. The quantitative analysis had the advantage of a large and robust dataset covering 20,000 people. The effect exceeds the 18.6% decrease in all-cause hospitalisations reported in the HHI five-year outcome evaluation (Pierse et al., 2024), which indicates that Pacific peoples particularly benefit from housing improvement. This finding is in line with a wealth of research, from New Zealand and from other countries, that improvements to housing improve health (Alidoust & Huang, 2023; Howden-Chapman et al., 2007, 2008, 2021; Pierse et al., 2024; Rangiwhetu et al., 2017; Thomson et al., 2013; World Health Organization, 2018).

The quantitative analysis showed that the health of older Pacific adults, and their economic status were not affected by HHI intervention. This underscores the gap that exists in the HHI, which is aimed at children, regarding serving the needs of older Pacific peoples. The qualitative evaluation shows the PHH is at least in part addressing this need.

Limitations of the quantitative evaluation

The quantitative results underline a limitation of our quantitative analysis, in that we drew on the HHI, which was aimed at children, rather than the PHH itself, which is an intervention focussed on the needs of older people. It is impossible to measure the precise differences in the hospitalisation rates of the PHH itself as these prevented hospitalisations will not occur until later years.

Furthermore, this analysis was also limited by the lack of an appropriate control group. Due to the nature of the study design of a natural experiment, there is no built-in control group as per a randomised control trial. Without a control group, it is not feasible to establish causation– meaning that outcomes occurred directly because of the HHI programme. This represents a challenge evaluating an established government programme as compared to a small scientific research study with an academic focus. Although this study cannot establish causation, it is based upon several significant RCTs which have established causation (Howden-Chapman et al., 2005, 2007). We have

also used a statistical method that is rigorous and well-founded given the limitations of the natural experiment study design.

Overall discussion

Whilst the disagreement between the two study cohorts primarily reflects a limitation of the analysis, it also demonstrates an important finding– that the current HHI recruitment and eligibility is unlikely to completely identify and target all individuals at risk of housing-related illness. Older individuals who, like children, are at risk of housing-related illness, require targeted eligibility and recruitment processes. Such programmes should be appropriately evaluated. It will be important to carry out 1, 3 and 5-year outcome evaluation of the PHH pilot programme itself to fully understand the long-term benefits to older Pacific people and their households.

The HHI provides less funding than the PHH, which meant that most structural repairs and improvements are not funded. As our interviews showed, such repairs are of particular importance to older Pacific households. This finding emphasises the importance of funding repairs and improvements as part of the PHH. The qualitative analysis showed improvements in warmth, dryness, accessibility, and self-reported wellbeing, all of which in the long-term we expect to result in reduced hospitalisation; as previously noted, long-term quantitative evaluations of the PHH pilot programme itself will provide fuller understanding.

7 Conclusion

The Pacific Healthy Homes (PHH) pilot programme represents a significant step forward in addressing housing-related health inequities for older Pacific peoples in Aotearoa New Zealand. Commissioned by the Ministry for Pacific Peoples (MPP), the programme was designed to fill a critical gap in housing support by extending the principles of the Healthy Homes Initiative (HHI) to a population previously underserved: Pacific adults aged 45 and over. The PHH pilot provided culturally tailored interventions, including insulation, heating, ventilation, minor repairs, and referrals, with additional funding for home repairs for homeowners. This evaluation, using both qualitative and quantitative methods, offers compelling evidence of the programme's value and highlights areas for future development.

The qualitative findings demonstrate that PHH made a meaningful difference in the lives of participants. Prior to intervention, many lived in homes that were cold, damp and structurally deficient, with inaccessible layouts and inadequate fire safety. These conditions contributed to poor health, stress and limited use of the home. Participants described how PHH interventions, such as repairs to windows and doors, installation of heat pumps and curtains, and healthy housing education resulted in warmer, drier, safer homes. These improvements were associated with enhanced comfort, reduced energy bills and better health and wellbeing. Importantly, participants expressed deep gratitude for the programme and its delivery, and many hoped it would be extended to others in their communities.

The quantitative analysis, based on HHI data, showed that while households of older Pacific peoples experienced significant reductions in hospitalisations and modest economic improvements, older Pacific adults themselves did not see the same benefits. This finding underscores the importance of PHH's additional funding for home repairs and its tailored approach to older adults' needs. It also highlights the limitations of relying solely on HHI data to evaluate PHH, given the differences in target populations and intervention scope. The lack of a control group and the natural experiment design further limit the ability to attribute causation, though the analysis builds on a robust foundation of prior randomised controlled trials demonstrating the health benefits of housing improvements.

Taken together, these findings support the continuation and expansion of the PHH programme. To ensure its long-term success and impact, we recommend the following:

1. **Longitudinal Evaluation**
   Conduct 1-, 3-, and 5-year outcome evaluations of PHH to assess long-term impacts on health and economic outcomes. The short timeframe of this pilot limited the ability to capture sustained changes, particularly in health and energy use. Longitudinal data will be essential to understand the full benefits of PHH and to guide future investment.

2. **Increased Funding**
   Expand funding to address more extensive repairs and structural issues. Many homes required significant work beyond the scope of the current budget, including roof repairs, bathroom renovations and accessibility modifications. Staff often had to prioritise the most urgent

issues, leaving other problems unresolved. Increased funding would allow for more comprehensive improvements and better health outcomes.

3. **Landlord Engagement**
   Develop strategies to improve landlord compliance with healthy housing standards. Renters face unique challenges, including reluctance to report issues due to fear of eviction or strained relationships with landlords. Staff noted that some landlords were unresponsive to requests for repairs, even when homes failed to meet legal standards. Working closely with other community law and tenancy advocacy organisations can support this effort. More broadly, stronger enforcement mechanisms for tenancy regulation will assist in advancing this work.

4. **Programme Expansion**
   Scale up PHH to reach more households, given the high demand and positive reception. Participants consistently reported that others in their communities needed similar support. The pilot's success demonstrates the value of home visits, of tailored housing interventions, of working with funding experienced providers who are immersed in their communities and the importance of expanding access to underserved populations.

In conclusion, the PHH pilot has shown that targeted, culturally appropriate housing interventions can significantly improve the wellbeing of older Pacific peoples. The programme's success lies not only in its technical interventions but also in its respectful, relationship-based approach. With continued investment, evaluation, and expansion, PHH has the potential to transform housing and health outcomes for Pacific communities across Aotearoa.

References

Alidoust, S., & Huang, W. (2023). A decade of research on housing and health: a systematic literature review. *Rev Environ Health*, *38*(1), 45–64.

Allen, N., Bryson, K., ’laiū Talei, C. I., Kake, J., Paul, J., & Donnell, G. O. (2025). *Understanding key barriers to the delivery of multigenerational housing in New Zealand*. The Urban Advisory, funded by the Building Research Levy. https://d39d3mj7qio96p.cloudfront.net/media/documents/ER115_Final_report.pdf

Anae, M. (2019). Pacific research methodologies and relational ethics. In *Oxford Research Encyclopedias* (pp. 1–26). https://doi.org/10.1093/acrefore/9780190264093.013.529

Baker, M. G., Gurney, J., Moreland, N. J., Bennett, J., Oliver, J., Williamson, D. A., Pierse, N., Wilson, N., Merriman, T. R., Percival, T., Jackson, C., Edwards, R., Mow, F. C., Thomson, W. M., Zhang, J., & Lennon, D. (2022). Risk factors for acute rheumatic fever: A case-control study. *The Lancet Regional Health - Western Pacific*, *26*, 1–11. https://doi.org/10.1016/j.lanwpc.2022.100508

Baker, M., McDonald, A., Zhang, J., & Howden-Chapman, P. (2013). *Infectious diseases attributable to household crowding in New Zealand: A systematic review and burden of disease estimate*. Department of Public Health, University of Otago, Wellington. http://www.otago.ac.nz/news/news/otago048059.pdf

Bennett, J., Zhang, J., Leung, W., Jack, S., Oliver, J., Webb, R., Wilson, N., Sika-paotonu, D., Harwood, M., & Baker, M. G. (2021). *Rising Ethnic Inequalities in Acute Rheumatic Fever and Rheumatic Heart Disease ,*. *27*(1), 36–46.

Beukes, C., Tkatch, M., Pierse, N., Chun, S., Brennan, A., Anderson, A., & Brown, R. (2023). Substandard South Auckland housing: findings from a healthy homes initiative temperature study. *Kotuitui*, *19*(2), 152–163. https://doi.org/10.1080/1177083X.2023.2252038

Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, *00*(00), 1–25. https://doi.org/10.1080/14780887.2020.1769238

Brooks, J., McCluskey, S., Turley, E., & King, N. (2015). The Utility of Template Analysis in Qualitative Psychology Research. *Qualitative Research in Psychology*, *12*(2), 202–222. https://doi.org/10.1080/14780887.2014.955224

Cheer, T., Kearns, R., & Murphy, L. (2002). Housing policy, poverty, and culture: “discounting” decisions among Pacific peoples in Auckland, New Zealand. *Environment and Planning C: Government and Policy*, *20*(4), 497–516. https://doi.org/10.1068/c04r

Chisholm, E., Howden-Chapman, P., & Fougere, G. (2017). Renting in New Zealand: Perspectives from tenant advocates. *Kōtuitui: New Zealand Journal of Social Sciences Online*, *12*(2), 95–110. https://doi.org/10.1080/1177083X.2016.1272471

Chisholm, E., Pierse, N., Davies, C., & Howden-Chapman, P. (2020). Promoting health through housing improvements, education and advocacy: Lessons from staff involved in Wellington’s Healthy Housing Initiative. *Health Promotion Journal of Australia*, *31*(1), 7–15. https://doi.org/10.1002/hpja.247

Chisholm, E., Pierse, N., Logan, A., Aspinall, C., Davies, C., Howden-chapman, P., & Johnson, E. (2024). “Freedom to move through the house”: How a healthy housing initiative improves quality of life in Aotearoa New Zealand. *Australian and New Zealand Journal of Public Health*, *48*(5), 1–8. https://doi.org/10.1016/j.anzjph.2024.100190

Crabtree, B. F., & Miller, W. F. (1992). A template approach to text analysis: Developing and using

codebooks. In B. F. Crabtree & W. F. Miller (Eds.), *Doing qualitative research: Research methods for primary care* (3rd ed., pp. 93–109). Sage Publications.

Fistonich, I. A. N., & Kiroff, L. (2024). An exploration of Pasifika multigenerational social housing. *Proceedings of International Structural Engineering and Construction*, *11*(2), 1–6.

Goodyear, R., Fabian, A., Gargiulo, H., Morgan, D., White, V., Auberson, K., Devlin, M., Sowman, P., Thomson, N., Sullivan, G., Cleland, S., Skinner, L., Patchett, A., Henson, S., Te Hira, T., Saville-Smith, K., Bretherton, C., Quinn, A., Buxton, K., … Ferguson, A. (2025). *Housing in Aotearoa New Zealand: 2025*. www.stats.govt.nz

Gray, J. M., & McIntosh, J. (2011). Voices from Tokelau: culturally appropriate, healthy and sustainable extended-family housing in New Zealand. *Journal of Asia Pacific Studies*, *2*(1), 70–96.

Howden-Chapman, P., Bennett, J., Edwards, R., Jacobs, D., Nathan, K., & Ormandy, D. (2023). Review of the Impact of Housing Quality on Inequalities in Health and Well-Being. *Annual Review of Public Health*, *44*, 233–254. https://doi.org/10.1146/annurev-publhealth-071521-111836

Howden-Chapman, P., Crane, J., Matheson, A., Viggers, H., Cunningham, M., Blakely, T., & Al., E. (2005). domised trial in community settings. 2005;61:2600-10. *Social Science and Medicine*, *61*, 2600–2610.

Howden-Chapman, P., Fyfe, C., Nathan, K., Keall, M., Riggs, L., & Pierse, N. (2021). The Effects of Housing on Health and Well-Being in Aotearoa New Zealand. *New Zealand Population Review*, *47*, 16–32.

Howden-Chapman, P., Matheson, A., Crane, J., Viggers, H., Cunningham, M., Blakely, T., Cunningham, C., Woodward, A., Saville-Smith, K., O'Dea, D., Kennedy, M., Baker, M., Waipara, N., Chapman, R., & Davie, G. (2007). Effect of insulating existing houses on health inequality: Cluster randomised study in the community. *British Medical Journal*, *334*(7591), 460–464. https://doi.org/10.1136/bmj.39070.573032.80

Howden-Chapman, P., Pierse, N., Nicholls, S., Gillespie-Bennett, J., Viggers, H., Cunningham, M., Phipps, R., Boulic, M., Fjällström, P., Free, S., Chapman, R., Lloyd, B., Wickens, K., Shields, D., Baker, M., Cunningham, C., Woodward, A., Bullen, C., & Crane, J. (2008). Effects of improved home heating on asthma in community dwelling children: Randomised community study. *British Medical Journal*, *337*(1411), 852–855.

King, N. (2004). Using templates in the thematic analysis of text. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 256–274). Sage Publications.

Krieger, J., & Jacobs, D. E. (2011). Healthy Homes. In A. L. Dannenberg, H. Frumkin, & R. . Jackson (Eds.), *Making Healthy Places* (pp. 170–187). Island Press. https://doi.org/10.5822/978-1-61091-036-1

Liamputtong, P. (2013). *Qualitative research methods*. Oxford University Press.

Macpherson, C. (2019). A Samoan Solution to the Limitations of Urban Housing in New Zealand. *Home in the Islands*, 151–174. https://doi.org/10.1515/9780824862862-008

MBIE. (2022). *Report on energy hardship measures*.

McGavin, K. (2017). (Be)Longings: Diasporic Pacific Islanders and the meaning of home. In *Mobilities of Return* (pp. 123–146). ANU Press.

McKay, K., & Eggleton, K. (2023). A place-based evaluation of a healthy homes initiative. *Health Promotion Journal of Australia*, *34*(2), 530–535. https://doi.org/10.1002/hpja.609

Ministry for Pacific Peoples. (2022). *Fale mo Aiga: Pacific Housing Strategy and Action Plan 2030*. https://www.hud.govt.nz/our-work/fale-mo-aiga-pacific-housing-strategy-2030

Ministry for Pacific Peoples. (2025). *Strategic Intentions 2025-2029*. https://www.mpia.govt.nz/assets/Corporate-Publications/Ministry-for-Pacific-Peoples-Strategic-Intentions-2025-2029.pdf

MOH, & MPP. (2025). *Tupa Ola Moui Pacific Health Chart Book 2025: Volume 1: Pacific Population in New Zealand*.

Oliver, J. R., Pierse, N., Stefanogiannis, N., Jackson, C., & Baker, M. G. (2017). Acute rheumatic fever and exposure to poor housing conditions in New Zealand: A descriptive study. *Journal of Paediatrics and Child Health*, *53*(4), 358–364. https://doi.org/10.1111/jpc.13421

Pene, G., Howden-Chapman, P., Peita, M., Viggers, H., & Gray, J. (2009). *Pacific families now and in the future: Living the Tokelauan way in New Zealand*. Families Commission.

Pene, G., Peita, M., & Howden-Chapman, P. (2009). Living the Tokelauan way of life in New Zealand. *Social Policy Journal of New Zealand*, *55*, 79–92.

Pierse, N., Johnson, E., Guha Thakurta, A., & Chisholm, E. (2024). *Healthy Homes Initiative: Five-year outcomes evaluation*. Health New Zealand.

Rangiwhetu, L., Pierse, N., & Howden-Chapman, P. (2017). Effects of minor household interventions to block draughts on social housing temperatures: a before and after study. *Kotuitui*, *12*(2), 235–245. https://doi.org/10.1080/1177083X.2017.1372787

Reti, S. (2025, August 26). *Pacific Healthy Homes Initiative delivers for families (press release)*. https://www.beehive.govt.nz/release/pacific-healthy-homes-initiative-delivers-families

Riggs, L., Keall, M., Howden-Chapman, P., & Baker, M. G. (2021). Environmental burden of disease from unsafe and substandard housing, New Zealand, 2010–2017. *Bulletin of the World Health Organization*, *99*(4), 259–270. https://doi.org/10.2471/BLT.20.263285

Rohorua, D. T., Natua, J. T., Tapu, M., & Koloto, D. L. (2022). *Report on Housing and Retirement among Pacific Peoples in Aotearoa*. Ministry for Pacific Peoples.

Sandelowski, M. (2000). Focus on research methods: Whatever happened to qualitative description? *Research in Nursing & Health*, *23*, 334–340.

Stats NZ: Tatauranga Aotearoa. (2025, April 16). Estimated resident population (2023-base): At 30 June 2023 2025 Apr 16. *Https://Www.Stats.Govt.Nz/Information-Releases/Estimated-Resident-Population-2023-Base-at-30-June-2023/*.

StatsNZ. (2023). *Pacific housing: People, place, and wellbeing in Aotearoa New Zealand*. https://www.stats.govt.nz/assets/Reports/Pacific-housing-in-New-Zealand-People-place-and-wellbeing/Download-data/Pacific-housing-People-place-and-wellbeing-in-Aotearoa-New-Zealand.pdf

Stewart, G. (2025). The Impact of Substandard Rural Housing on Resilience and Wellbeing in Te Tai Tokerau. *New Zealand Association for Impact Investment: Impact Connector #16*, *March*, 17–31.

Tamasese, T., & Parsons, T. (2019). *Pacific conceptions of wellbeing, spirituality, resilience, and the measurement of Pacific intergenerational wellbeing*. Family Centre.

Tautolo, E., Wong, C., Vandal, A., & Jalili-moghaddam, S. (2020). Respiratory Health of Pacific Youth: An Observational Study of Associated Risk and Protective Factors Throughout Childhood. *JMIR Research Protocols*, *9*(10), 1–12. https://doi.org/10.2196/18916

Teariki, M. A. (2017). Housing and health of Kiribati migrants living in New Zealand. *International Journal of Environmental Research and Public Health*, *14*(10). https://doi.org/10.3390/ijerph14101237

Teariki, M. A., & Leau, E. (2023). Understanding Pacific worldviews: principles and connections for research. *Kotuitui*, 1–20. https://doi.org/10.1080/1177083X.2023.2292268

Thomson, H., Thomas, S., Sellstrom, E., & Petticrew, M. (2009). The health impacts of housing improvement: A systematic review of intervention studies from 1887 to 2007. *American Journal of Public Health*, *99*(S3), S681–S692. https://doi.org/10.2105/AJPH.2008.143909

Thomson, H., Thomas, S., Sellstrom, E., & Petticrew, M. (2013). Housing improvements for health and associated socio-economic outcomes. *Cochrane Database of Systematic Reviews*, *2*. https://doi.org/10.1002/14651858.CD008657.pub2.

World Health Organization. (2018). *WHO Housing and health guidelines*. https://www.who.int/publications/i/item/9789241550376