RESEARCH WITH THE NZ HEALTHY HOUSING INITATIVES

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MOTU ECONOMIC AND PUBLIC POLICY RESEARCH

NGĀ KAUPAPA E HEKE MAI NEI:
HOUSING AND HEALTH
INTERVIEWING PROVIDERS IN TE ŪPOKO O TE IKA
EXPLAINING AND CELEBRATING INTERIM ANALYSIS

THANK YOU! KA NUI TE MIHI KI A KOUTOU.

HAWKE'S BAY District Health Board Whakawāteatia

HEALTHY WHARE healthy whanau

TCHT Innovative housing solutions

Te Hauora o Turanganui a Kiwa Ltd
Turanga Health

TIRAORA

NGĀTI POROU HAUORA

Manawa Ora
Healthy Home Initiative

Sustainability Options
for ethical & sustainable living

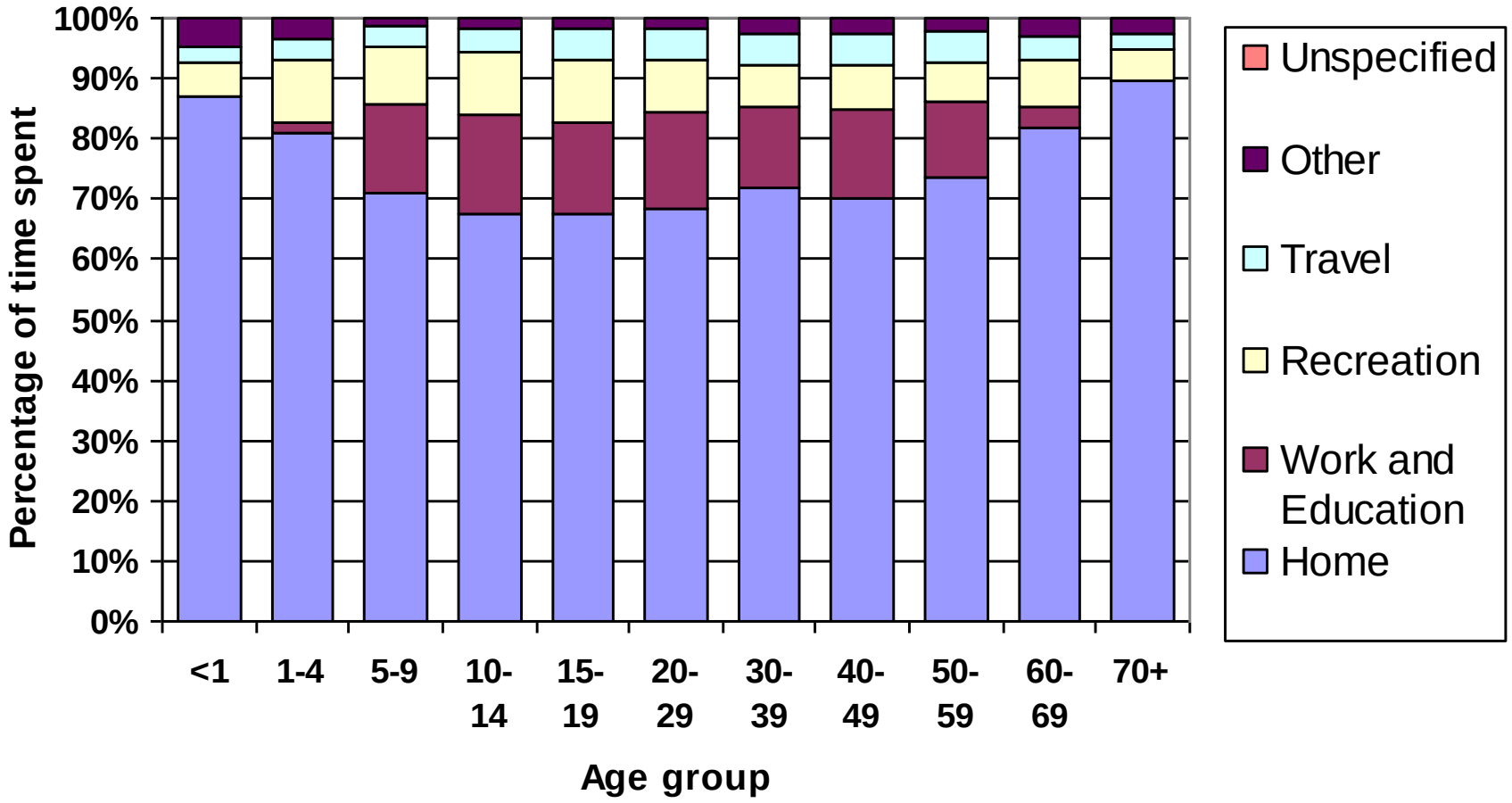
National Hauora Coalition

WHARE ORA
WAIKATO HEALTHY HOMES PROGRAMME

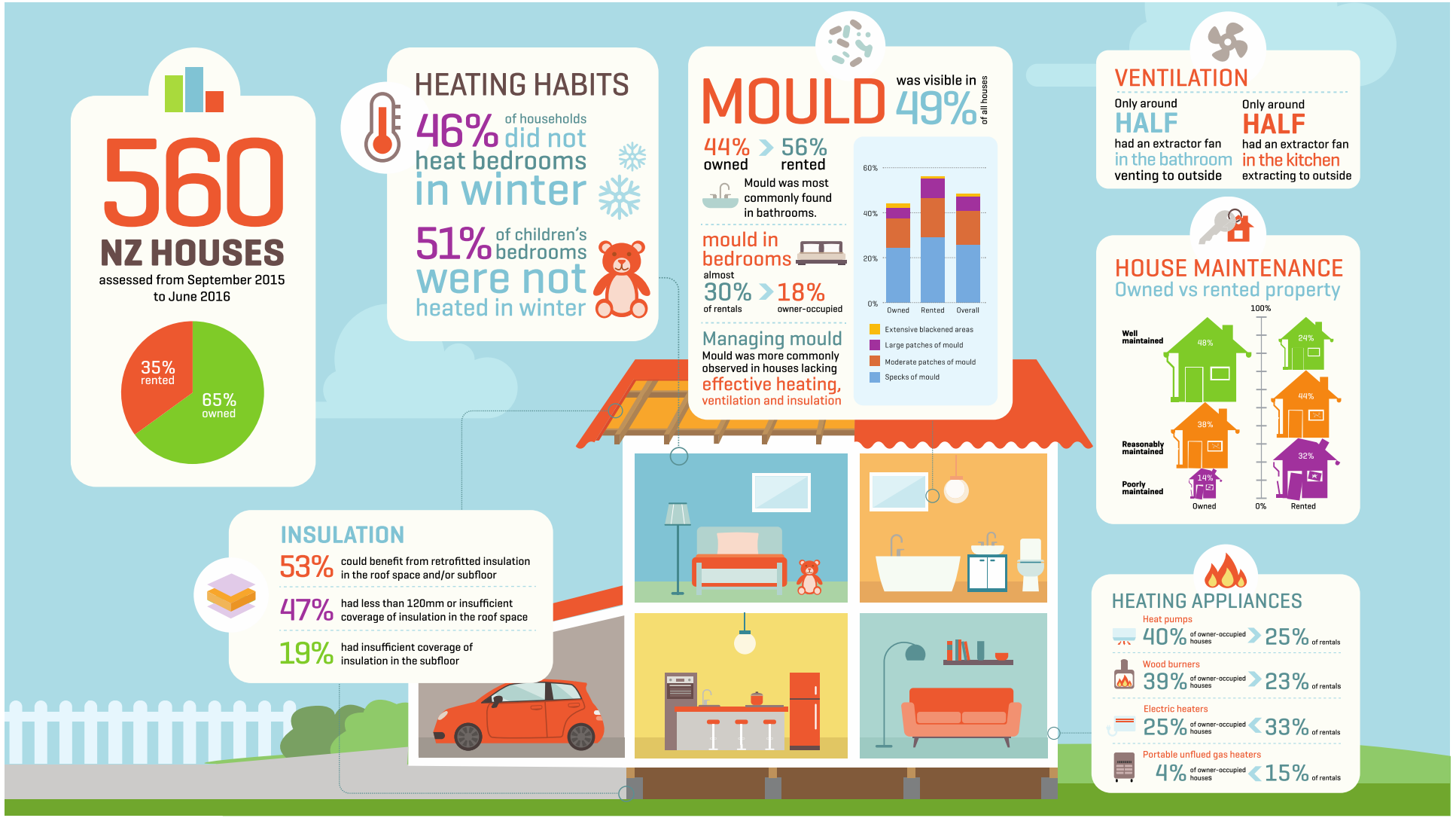
LAKES DISTRICT HEALTH BOARD

Kainga Ora Healthy Homes Initiative

NGĀ KĀINGA WAEWAE
WHERE DO WE SPEND OUR TIME?

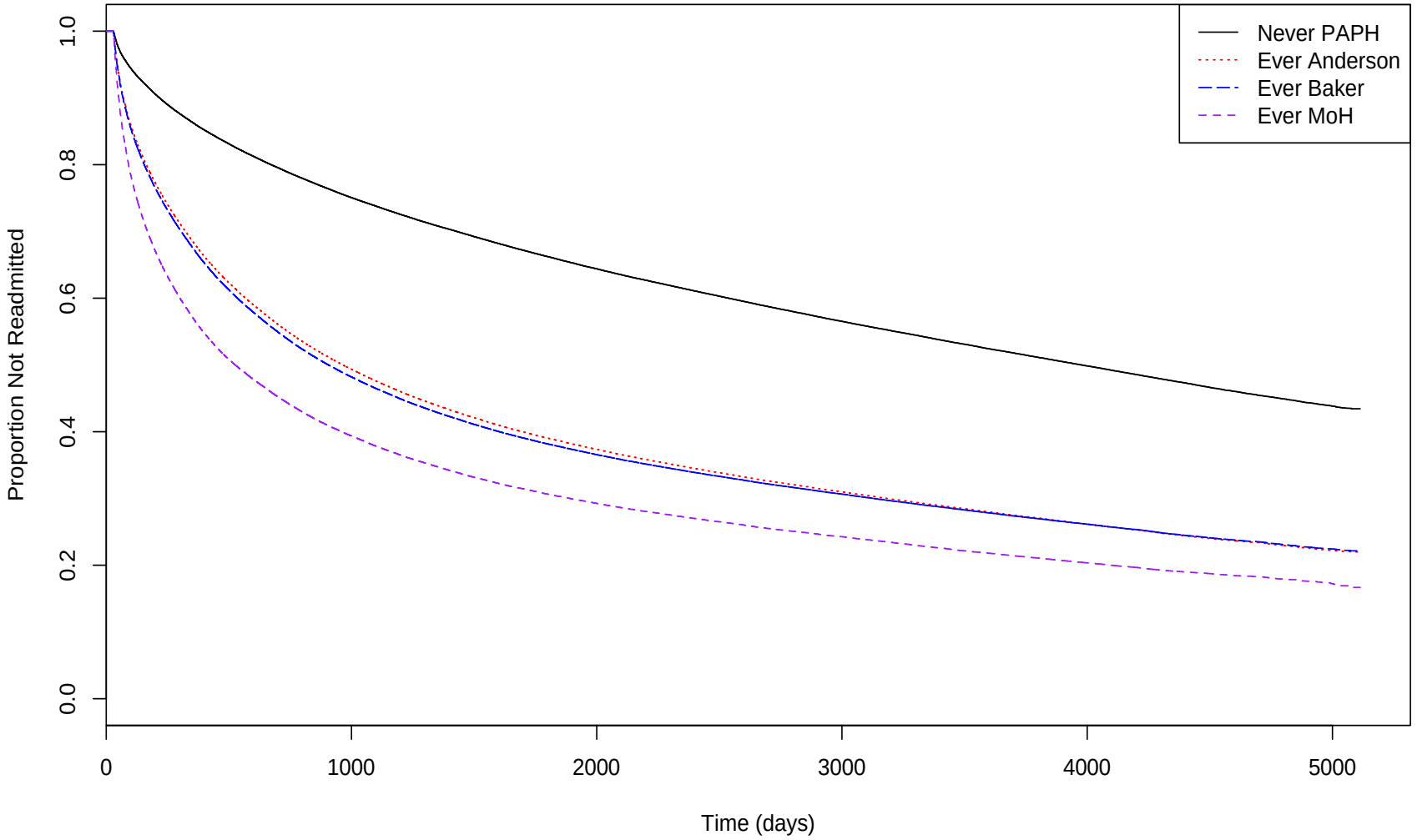


New Zealand Travel Survey, 1997-98



BRANZ House condition survey

AHAKOA TE MOMO MATE, WHAKANUIA TANGATA
HOSPITALISATIONS



AHAKOA TE MOMO MATE, WHAKANUIA TANGATA
HOSPITALISATIONS

Hospital admission group	Rehospitalisation risk	Unadjusted HR (95% CI)	Adjusted* HR (95% CI)
Non-PAH	56.3%	1.00 (reference)	1.00 (reference)
PAH	78.0%	2.19 (2.17 to 2.21)	2.31 (2.29 to 3.34)
PAHHE	80.3%	2.41 (2.40 to 2.43)	2.49 (2.48 to 2.52)
Crowding	80.3%	2.47 (2.45 to 2.49)	2.58 (2.56 to 2.61)
HSH	86.2%	3.35 (3.31 to 3.39)	3.60 (3.55 to 3.66)

NGĀ WHAKAARO Ō ĒTAHI KAIMAHI KI TE ŪPOKO O TE IKA
PROVIDERS IN WELLINGTON REGION

- “Water [was] teaming down the windows. You walked through a blanket that was hung in a door frame to go into the lounge and she has a heat pump going above a fireplace but the fireplace wasn't covered so it was a big gaping hole… The wallpaper was ripping off from dampness, it was lifting and rolling down… Mould everywhere, everything was damp.”

- “Some of them think that's a normal life. They get used to coughing and being sick all the time.”

Well Homes is a **free** service that may be able to help your whānau with:


BEDS & BEDDING


CARPET


CURTAINS


HEATING


INSULATION

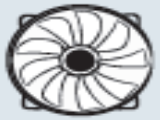

MINOR REPAIRS


MOULD CLEANING KITS

MSD/WORK & INCOME ASSISTANCE


OTHER - I.E. HEALTH OR SOCIAL REFERRALS


SOCIAL HOUSING RELOCATION


VENTILATION

Please phone us on 0800 675 675

WAIHO I TE TOIPOTO, KAUA I TE TOIROA
CRITICAL FACTORS FOR SUCCESS

- **Collaboration involving health, energy and research organisations (learning together)**
  - "we basically come from all bases, we've got housing expertise, we've got health and cultural expertise."
- **Visiting the home (insight into conditions and ability to tailor recommendations)**
  - .”The wallpaper was ripping off from dampness, it was lifting and rolling down... Mould everywhere, everything was damp.”
  - "we... advise around heating the most vulnerable person's room if that's the only place you can afford to heat”
  - “you can see them and get a feel for how the family manages the house and the circumstances around that.“
- **Integrated approach (interventions and education to make an immediate difference, and advocacy)**
  - "a heater is just a basic need to be warm, so it is going to impact them straight away.“
  - "you give them a sense of hope that, yes we will deliver curtains within 6 weeks, I will follow up the insulation referral and see where that's at, we will call the landlord n a couple of days and ask him what is happening to the house."

KAUA E HOKI I TE WAEWAE TŪTUKI, Ā PĀ ANŌ HEI TE ŪPOKO PAKARU
CHALLENGES

- **Landlords' reluctance to implement recommended improvements**
  - "I've had landlords say ''make me'' when I've asked them to do things… You can make suggestions but they don't really have to do anything about it."
- **Low-income homeowners' dilapidated housing**
- **Lack of social housing**
  - "you're still not going to get anything anytime soon because the wait list is what it is.'"
- **Not enough time or resources to support families (i.e for additional advocacy or follow-up appointments)**
- **Client stress and income constraints (i.e. reluctance of tenants to rock boat, cost of heating, many things to manage besides mould)**
  - "If you're struggling to buy groceries you're not going to be running the heater."
  - "there is a lot going on"
  - "they won't want to address it with the landlord especially if they are in rent arrears or they have asked for things before and they haven't been done and they are worried about rent."

HE KŌRERO WHAKAKAPI
CONCLUSIONS

- Provides insight into why not all recommended interventions can be implemented.
- Helps families but cannot counter structural challenges such as poor quality housing, and lack of housing and energy affordability.
- Efforts to improve health outcomes through housing interventions should be supported by funding and regulatory initiatives that encourage property owners to implement recommended interventions.

- Next steps: analysing and writing up interviews with 10 clients

EXPLAINING AND CELEBRATING INTERIM ANALYSIS

Overview of Outcomes Evaluation
Key results
Scope of analysis and overview of referrals
Health outcomes evaluated
Approach used & adjustments made
Prevented health events
Cost-benefit analysis
Limitations and where to next

TĒ TŌIA, TĒ HAUMATIA
OVERVIEW OF THE HHI OUTCOMES EVALUATION

Phase 1: Preliminary Health Outcomes
Data supplied end 2018, analysis complete.
- Using encrypted NHIs to look at hospitalisations and pharmaceuticals (dispensings, GP visits).

Who was seen, and timeframe of engagement with service.

Phase 2: Health and Social Outcomes
Data supplied mid-2019, preparation underway.
- Capturing a wider range of benefits for more tamariki and their whānau, and controlling for different interventions.

Who was seen, what was needed, and which interventions were received, when

NGĀ OTINGA MATUA
KEY RESULTS

For every 10 tamariki referred to the HHI programme, over the next year there was:

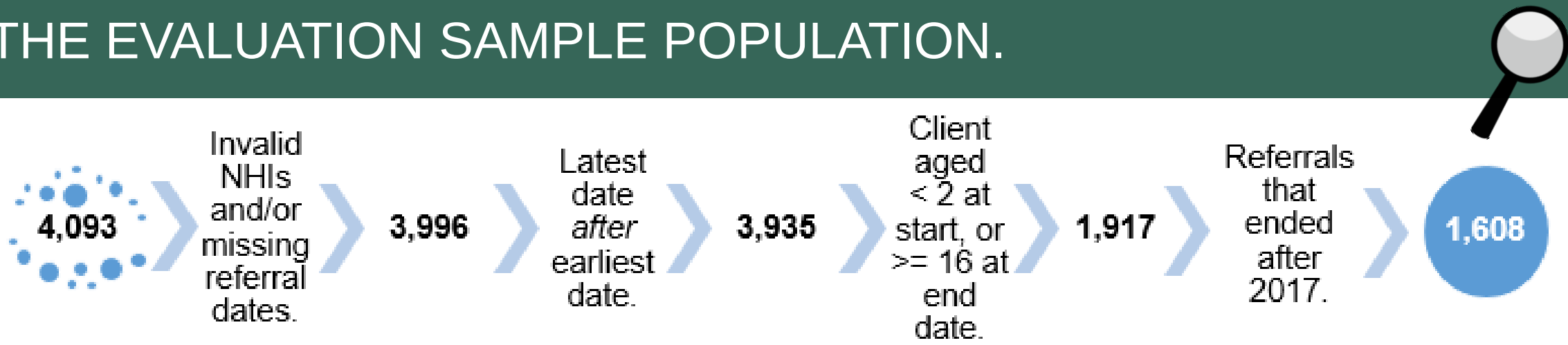
- 1 less child in hospital
- 6 fewer medicines dispensed
- 6 fewer GP visits

Translates into significant savings for the health sector.

Much better than insulation alone.

Across all 15,330 HHI referrals received across all providers, this effectiveness of the programme has meant:

KO ĒHEA WHĀNAU?
THE EVALUATION SAMPLE POPULATION.



There were 4,093 referrals supplied that had what looked to be a valid NHI.

We then had to restrict these referrals to a smaller group of referrals where:

- **The NHI was valid**, to be able to link to data
- **The start and end dates of the referral were complete (and sensible),** to be able to clearly identify the year before the referral and the year after the referral.
- **The primary client NHI was between 2 and 15 at the end of their referral**, to exclude birth and early-life related hospitalisations.
- **The referral period had ended before 2018,** to allow for a full year of post-intervention to be observed with available data.

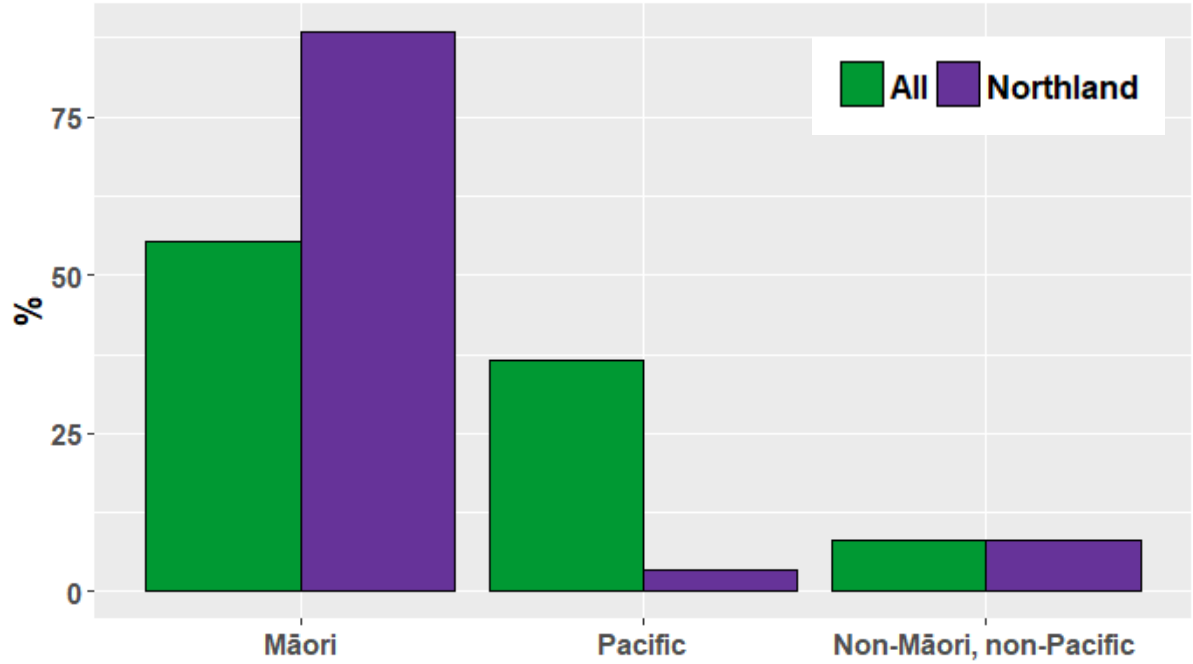
HE TIROHANGA WHĀNUI
OVERVIEW OF REFERRALS

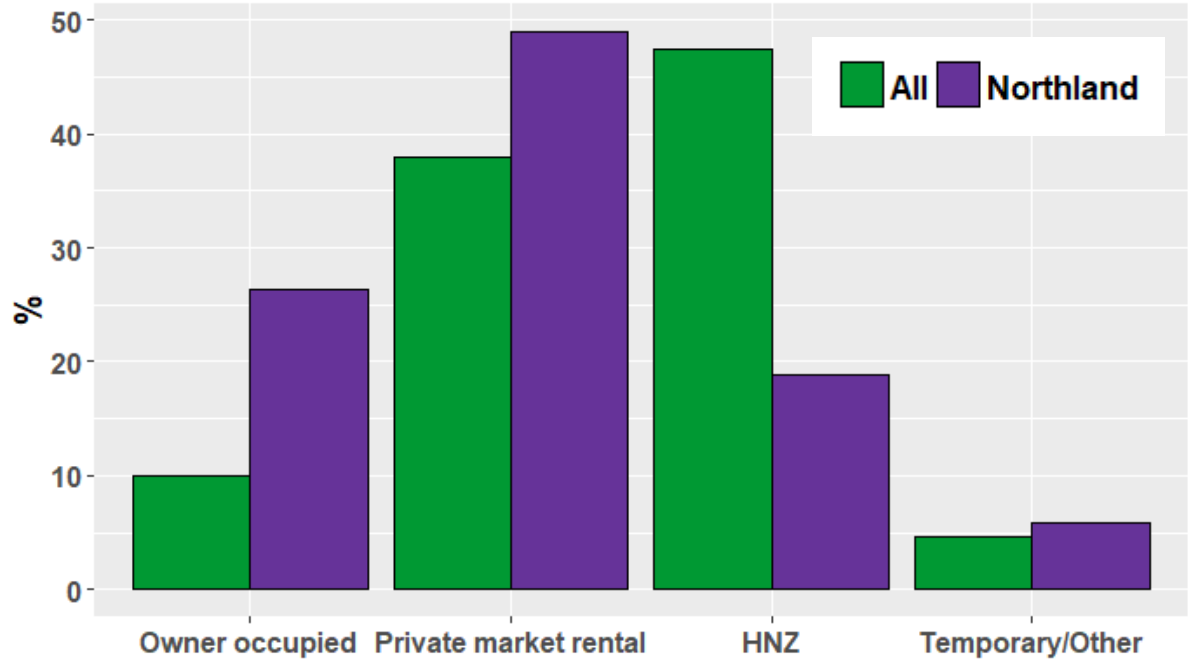
Across all providers, there were <u>1,608</u> referrals.
These tamariki were:

- young, with 40% of the children aged 2 to 5.
- mainly Māori (55.2%) or Pacific (36.6%)
- mostly living in Housing New Zealand homes (48%) or in private rentals (38%).

<u>243</u> of these referrals were from Manawa Ora, about 15%.
Broadly, these tamariki were:

- Similar in terms of age and sex.
- Different in terms of ethnicity and the types of properties they're living in.
  - 89% Māori
  - 26% owner-occupied, 49% private rental





HE AHA NGĀ PĀTAI MATUA?
THREE KEY HEALTH OUTCOMES, OR ‘EVENTS’

Hospitalisations

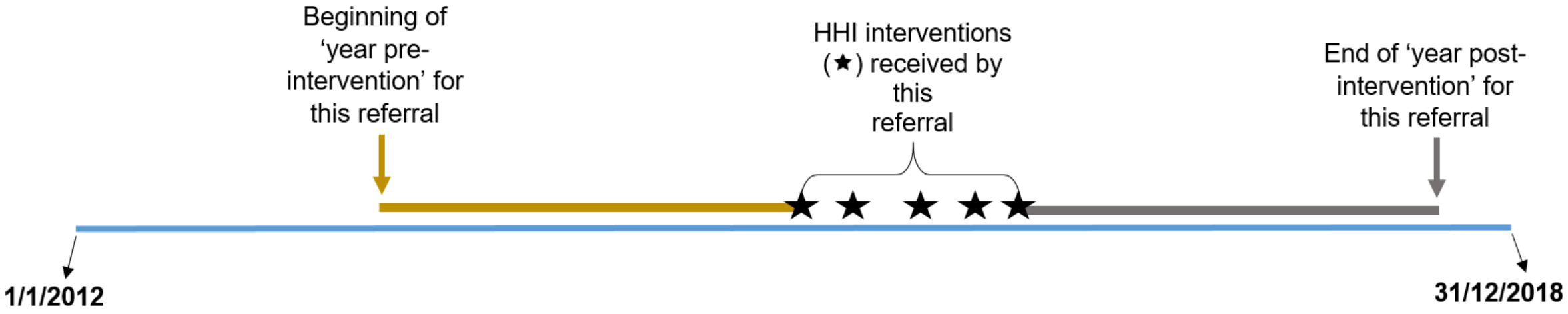
Pharmaceutical dispensings

GP Visits

TE RAUTAKI
PRE-/POST-INTERVENTION COMPARISON

For each of the referrals, we had the earliest and latest date an HHI provider was engaged with them. This meant we had two periods for each referral, which we could compare events between.

PRE-INTERVENTION **POST-INTERVENTION**



TE RAUTAKI
PRE-/POST-INTERVENTION COMPARISON

Looking at comparing **hospitalisations** between the two time periods:

Things we need to be mindful of:

- **Age**: As kids get older, they generally aren't as sick.
  - Nō reira: hospitalisations in the post-period will be lower than in the pre-period.
- **Selection bias:** a key eligibility criteria for the HHIs was because of a previous housing-related hospitalisation.
  - Nō reira: there are more hospitalisations in the pre-period than we would expect in the post-period.

IMPROVING RELIABILITY OF ESTIMATES
CORRECTIVE ADJUSTMENTS

So that the difference between the pre-/post-HHI counts was more representative of just the HHI's effectiveness, we made the following adjustments:

- **Hospitalisations: age effect, and selection bias.**
- **Pharmaceutical dispensings and GP visits: age effect only.**

RAUTAKI | APPROACH

SELECTION BIAS

1. What was the effect of the HHIs looking at other housing-related hospitalisations that aren't MOH indicator conditions?
2. What was the effect of the HHIs looking just at the MOH indicator conditions?
3. What would we expect an unbiased pre-HHI count of hospitalisations to be, if we adjust by the difference between these two effects (estimate of bias)?

AGE

- Let's assume that as a child's age increases, the amount of health events they have decreases in a straight line (linearly)
- For each health event, model the number of health events at the start of the pre- and post-periods with respect to the child's age at the start of each respective period
- Work out how much of the pre-/post-HHI decrease in events is likely because of age/increasing health

NGĀ OTINGA
SIGNIFICANT, POSITIVE HEALTH OUTCOMES

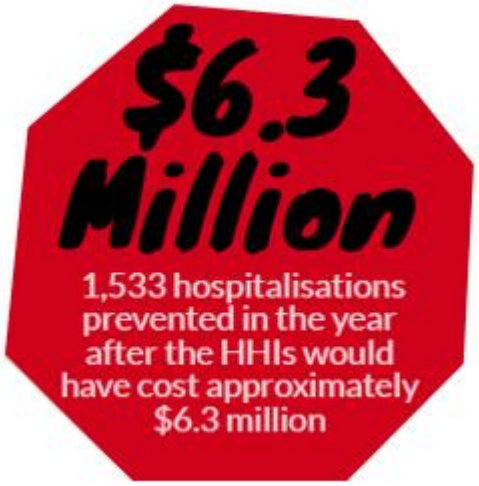
Hospitalisations	Pharmaceutical dispensings	GP Visits
Prevented in sample: 160.78	921.17	990.17
Prevented per referral: 0.100	0.573	0.616
Prevented in population: 1,533	**8,784**	**9,443**

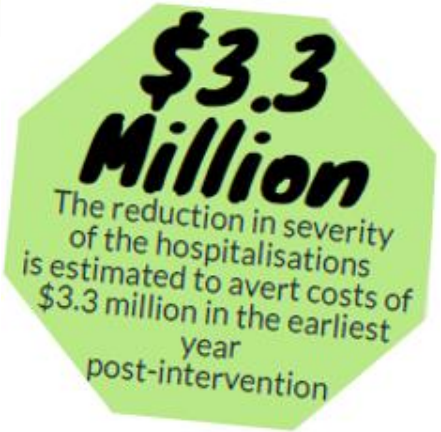
E PĀ ANA KI TE PŪTEA
COST-BENEFIT ANALYSIS APPROACH USED

- Focus on costs/benefits to Ministry of Health (ngā utu whakahaere noa iho)
- Costs of program
  - At ~$1205 per referral, 15,330 referrals cost ~$19.2 million
  - Only includes staffing costs – does not include costs of interventions
- Benefits – direct costs using the results of events averted for referred child in 1st year after referral completion
  - Hospitalisations (# and severity)
  - GP visits
  - Pharmaceutical dispensings

COST-BENEFIT ANALYSIS
COSTS AVERTED

- Costs averted in first year after intervention ~$10 million
  - Fewer hospitalisations ~ $6 million
  - Lower severity of hospitalisations ~ $3 million
  - Fewer GP visits and pharmaceutical dispensings ~ $800,000
- Return on investment expected in Year 2

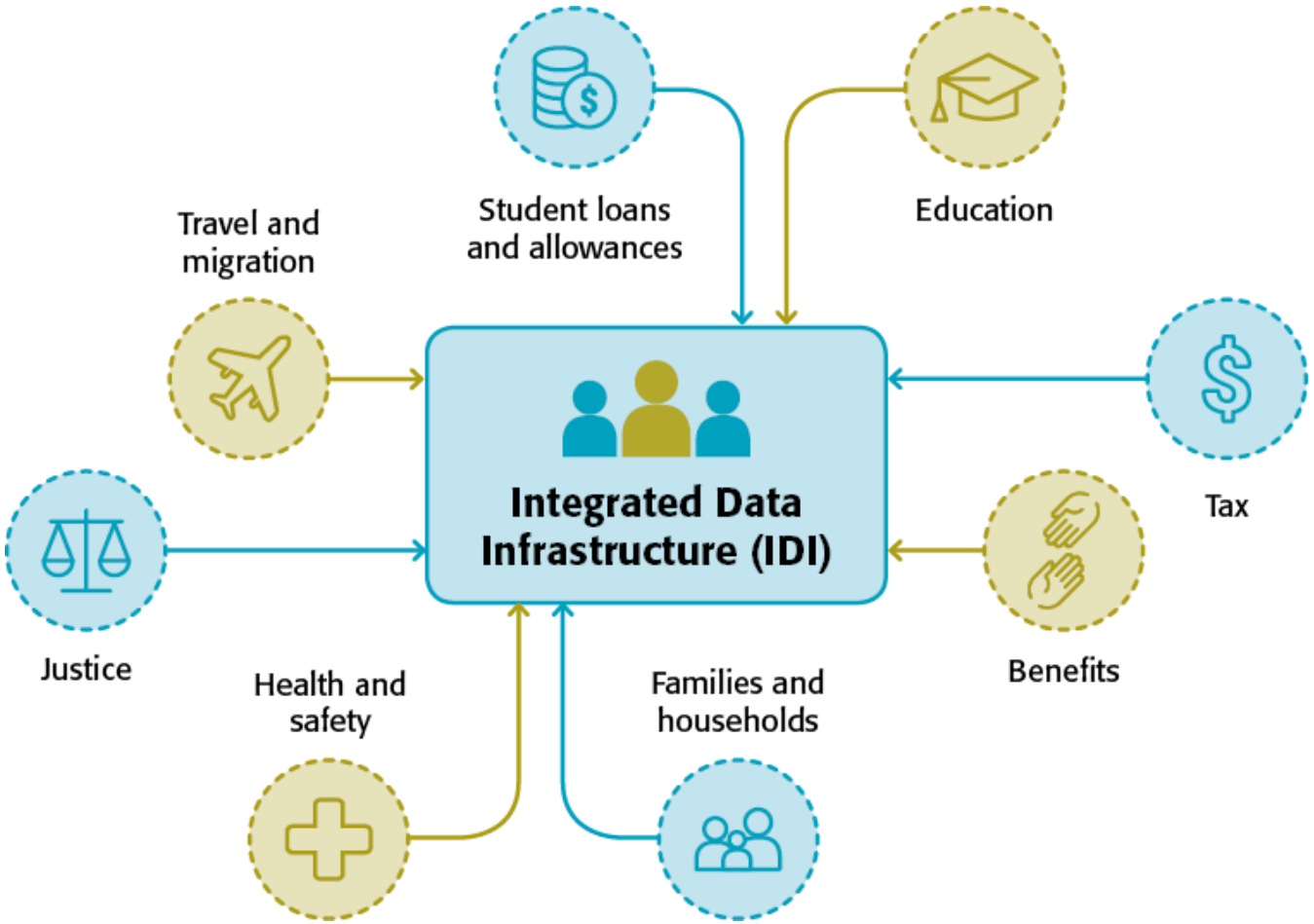




HE PŪREIREI WHAKAMATUATANGA
LIMITATIONS OF THIS INTERIM ANALYSIS

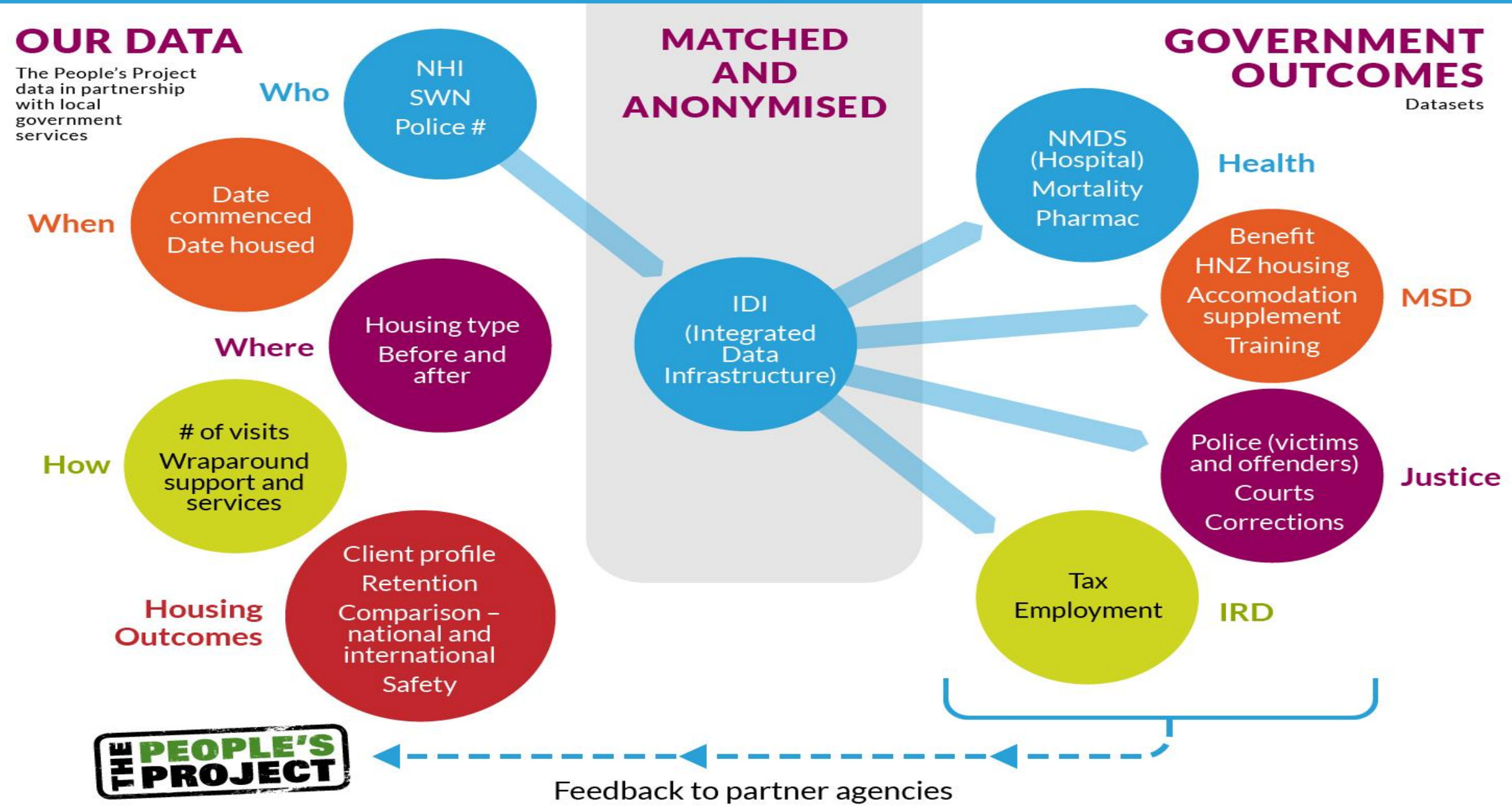
- Looks only at the referred tamariki aged 2-16 years
- Includes only a one-year follow up period
- Only an approximate measure of when a GP was visited
- Doesn’t account for different interventions whānau received
- Not all program costs are included – no cost information on providing interventions
- Not all benefits are included
  - Averted health care costs to other whānau members
  - Averted losses from missed school for child
  - Improvements to well-being and other outcomes for all household members

PHASE 2
USING THE INTEGRATED DATA INFRASTRUCTURE



- Benefit entitlements
- Educational outcomes
- Employment
- ?

Better decision making for better outcomes



THANKS AGAIN! KĀORE I TUA ATU I A KOUTOU.

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HE PĀTAI?

HE IKA KAI AKE I RARO, HE RAPAKI AKE I RARO

Pierse N, White M and Riggs L. 2019. Healthy Homes Initiative Outcomes Evaluation Service: Initial analysis of health outcomes (Interim Report). Wellington: Ministry of Health. Available on: https://www.health.govt.nz/publication/healthy-homes-initiative-outcomes-evaluation-service-initial-analysis-health-outcomes-interim-report

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