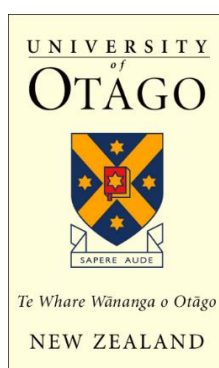# Severe Housing Deprivation

A comparison of a census measure with service usage

Dr Helen Viggers, Dr Kate Amore, Distinguished Professor Philippa Howden-Chapman
He Kainga Oranga / Housing & Health Research Programme
University of Otago, Wellington

May 2024

1. Introduction

Since 2013 a series of reports have been written analysing how Severe Housing Deprivation (SHD) or homelessness can be estimated from Aotearoa New Zealand Census data. The primary focus of this report is to examine the outcomes in three government domains – Health, Justice, and Social Development of people who have been categorised as in SHD. It examines how consistent the outcomes for the Census measure of population in SHD are in comparison to known populations, who have experienced homelessness.

There are two secondary focuses. The report also:

- Briefly reviews and documents updates to the definition of SHD
- Begins to explore the dynamic between housing deprivation type and interaction with the three government domains.

This work has taken place inside a dynamic sector where government and NGO responses to SHD and homelessness have been through multiple changes.

The structure of this short report is:
- Section 2 provides an overview of the construct and operationalisation of the census measure of SHD.
- Section 3 sets out the method by which the population experiencing SHD under the census measure has compared to other populations of people known to have experienced homelessness.
- Section 4 describes the results
- Section 5 discusses the results, focusing around three main issues: the construction of the estimates of service usage, the utility of the SHD census measure, and what the SHD census measure tells us about the population experiencing homelessness.
- Section 6 is a brief conclusion.

2. The conceptualisation and measurement of homelessness

This measure of Severe Housing Deprivation[1] was developed by the authors of this paper and colleagues at the University of Otago, Wellington through an Official Statistics System Grant (Amore et al., 2013) and doctoral work (Amore, 2019). It aligns with, and builds upon, the government's New Zealand Definition of Homelessness (Statistics NZ, 2014). It has been applied to census and emergency housing data to produce national estimates of the prevalence and characteristics of homelessness in New Zealand, which have been published for 2001, 2006, 2013, and 2018 (Amore et al., 2013; Amore, 2016; Amore, Viggers et al., 2020). This

---

[1] Other measures of Severe Housing Deprivation, or Homelessness are possible. If necessary for clarification, we suggest that the measure referred to in this report is called the "Otago University Census measure" or "Otago University Severe Housing Deprivation measure". An abbreviation to "Otago measure" is unwise as the national figures may be mistaken for those specific to the Otago region. In this report however, for brevity with minimal reduction in clarity, we call it the "*census measure*".

work was begun before data from the 2018 Census was available. It does not consider data from the 2023 Census, which is not yet available.

The Integrated Data Infrastructure (IDI) is a large dataset of linked administrative data managed by Statistics NZ. The IDI allows analysis of patterns of interaction across a number of services, mainly government-provided services, some of which can serve as indicators of disadvantage. The analysis reported in this paper was designed to explore the patterns of service usage of people categorised as Severely Housing Deprived using the *census measure*[2].

A measure comprises both conceptual and operational definitions: the first sets out how a phenomenon is defined in the theoretical world; the second, how it is defined in the real world of imperfect data. This paper focuses on the latter. The concept and classification of homelessness/severe housing deprivation used in this work is included in Appendix 1 for reference but will not be discussed in any depth.

The measure defines homelessness as 'severe housing deprivation' or:
  1. Living in severely inadequate housing;
        due to:
  2. A lack of access to minimally adequate housing (LAMAH).

This definition echoes the dominant concept of homelessness in the literature, and reflects three main ideas:

- Homelessness as a housing issue, an objectively defined state pertaining to people's material living conditions[3];

- Homelessness pertains to living conditions that are severely inadequate, rather than housing that has 'just' any kind of inadequacy;

- Homelessness reflects lack of access or choice. There are people with resources and options who freely choose alternative housing, such as living in a house-bus. These people are not considered homeless – but a person living in a van due to lack of access to rental housing would be.

---

[2] One purpose of this project is to explore whether homelessness could be an Official Statistic. This would mean homelessness statistics would be produced by a government department(s), published regularly, and government would be responsible for maintaining their long-term sustainability (Statistics NZ, 2007).

To be considered for an Official Statistic, a measure should demonstrate a number of qualities, but perhaps the most fundamental one is validity (or accuracy) – the "degree to which the information correctly describes the phenomenon it was designed to measure" (Statistics NZ, 2007, p.16). This paper focuses on assessing how the population identified by the "*census measure*" of Severe Housing Deprivation compare to known populations that have experienced homelessness.

[3] It should be noted that the term 'homeless' is used to describe a number of other concepts, perhaps the most important being the physical and spiritual homelessness of dispossession wrought by colonisation. 'Homelessness as dispossession' is a vital and distinct concept that impacts upon 'homelessness as severe housing deprivation', but the two should not be conflated. This paper focuses on the latter. For a fuller discussion of some of the issues see the "Kāinga Kore" *Waitangi Tribunal 2023*

Unpacking the concept of severely inadequate housing, Amore et al. (2013) argue that there are three core dimensions of housing adequacy: habitability, privacy and control, and security of tenure. The basic criteria for each of these dimensions are shown in Table A1 (Appendix 1). People living in *severe* housing deprivation (i.e. homeless) are those whose housing is lacking in *multiple* core adequacy dimensions, as shown in Figure A1 (Appendix 1).

2.1 An operational definition of Severe Housing Deprivation for use with census data

An operational definition sets out how a concept should be applied in the real world – that is, within the limitations of data collection instruments or datasets. There is no box to tick in the census (any other nationally representative survey or on hospital data) to declare oneself as experiencing homelessness (and if there was, those experiencing homelessness would likely be grossly underestimated, as the term is burdened by stereotype and stigma). Hence, judgement is needed to identify people who are most likely to be experiencing homelessness, or severe housing deprivation, based on the available data. Such judgement calls are necessary for measurement of all phenomena, but are arguably most contentious for social phenomena.

The census is a key dataset for measuring those experiencing severe housing deprivation or homelessness nationally, as it remains the only source of data on all people in all places of habitation in New Zealand, notwithstanding data collection challenges. Applying this concept of Severe Housing Deprivation to the census, the New Zealand population is divided into four groups:

- Severely Housing Deprived (or experiencing homelessness)
- Not severely housing deprived (or not experiencing homelessness)
- Housing deprivation status cannot be determined
- Excluded, this is a group to which the concept of homelessness does not apply, primarily because they are living in institutions such as camps, student accommodation, or prisons. This group is not further discussed in this report.

To identify these groups, the two conceptual criteria of severe housing deprivation/ experiencing homelessness: ([1] living in severely inadequate housing, due to [2] a lack of access to minimally adequate housing) are translated into operational criteria:

1) Living in severely inadequate housing - that is:
   a) accommodation without basic physical amenities;
   or
   b) accommodation where no resident has tenancy rights equivalent to a private renter;
   or
   c) as a non-tenure holder in a private dwelling that is severely crowded.

   and

2) A lack of choice:
        a) having no other place to live;
        and
        b) having a low income.

2.2 Refinement to the classifications of Severe Housing Deprivation

Earlier iterations of the classification had four categories (Amore et al., 2013, Statistics NZ, 2009), but to improve conceptual rigour, the fourth category – housing that lacks one or more basic amenities – has been re-classified as a sub-category of 'living without habitable accommodation due to lack of access to minimally adequate housing' (Category 1c in Table 1).

Figure 1 shows a simplified flow chart of how these criteria were applied. Table 1 shows how the *census measure* operationally defines the three categories of homelessness.

Figure 1 Simplified algorithm for identifying the severely housing deprived population in the census (Amore, Viggers et al., 2021)

Notes:

(1) People with no information for these variables were classified as 'Severe housing deprivation cannot be determined' (not shown).

(2) Severely inadequate housing relates to the 'Specific living situations' in Table 1.

(3) 'Pro rata allocation of children' is a special filter applied to children in 'severely inadequate' non-private dwellings (NPDs), such as boarding houses. It is not relevant in this present paper because it estimates the proportion of children based on the proportion of adults rather than identifying specific individuals, and only specific people can be tracked for service usage.

(4) A severely crowded dwelling was defined as a dwelling with a deficit of two or more bedrooms, according to the Canadian National Occupancy Standard.

(5) The reference person is the person in a dwelling, who fills out the Census Dwelling Form. This person was assumed to be more likely to be a 'host' in the dwelling, rather than a temporary resident. This filter is required for rental dwellings in particular.

Table 1 Classification and operational definition of each category of severe housing deprivation

Category of severe housing deprivation			Data source	Operational definition
1	Living without habitable accommodation due to lack of access to minimally adequate housing	a. Living rough	Census	1. Living rough, in an improvised dwelling, or in a mobile dwelling not in a motor camp; and 2. Usual address is 'same as census night' or 'no fixed abode'; and 3. Low income (*) (household-level, or individual-level if not part of a household); or 4. Income unknown and receiving a means-tested benefit (household-level, or individual-level if not part of a household).
		b. Improvised or mobile dwelling		
		c. Housing that lacks basic amenity	2018 Census – not measureable in prior censuses	1. Dwelling lacks at least one of six basic amenities 2. Usual address is 'same as census night' or 'no fixed abode'; and 3. Low income (*) (household-level); or 4. Income unknown and receiving a means-tested benefit (household-level)
2	Living in a non-private dwelling due to a lack of access to minimally adequate housing	Targeted to homeless people — d. Night shelter	Administrative data from emergency housing providers	n/a These dwellings are not reliably identifiable in census data
		Targeted to homeless people — e. Women's refuge		
		Targeted to homeless people — f. Accomm. targeted to homeless people		
		Not targeted to homeless people — g. Institution not targeted to homeless people	Not measurable currently	n/a
		Not targeted to homeless people — h. Camping ground or motor camp	Census	1. Living in a camping ground, motor camp, boarding house, hotel, motel, guest accommodation, commercial vessel, or marae; and 2. The dwelling is not misclassified student accommodation (i.e. <75% of census night residents in the dwelling are studying full-time); and 3. Usual address is 'same as census night' or 'no fixed abode'; and 4. Low income (*) (household-level (people in 'private' dwellings in camping grounds) or individual-level (people in all other dwellings)); or 5. Income unknown and receiving a means-tested benefit (household-level (people in 'private' dwellings in camping grounds) or individual-level (people in all other dwellings)).
		Not targeted to homeless people — i. Commercial accommodation		
		Not targeted to homeless people — j. Other non-private accommodation		
3	Living as a temporary resident in a private dwelling due to a lack of access to minimally adequate housing	k. Temporary resident in a private dwelling	Census	1. Living in a permanent private dwelling; and 2. Not an owner of that dwelling or in an owner's nuclear family; and 3. Not the reference person or in the reference person's nuclear family; and 4. Usual address is 'same as census night' or 'no fixed abode'; and 5. Low income (*) (family-level if accompanied by family, individual-level if not); and 6. The dwelling is severely crowded (Canadian National Occupancy Standard 2+ bedroom deficit).

Notes
(*)'Low income' = Lower than '60% income poverty line'. The equivalised amounts were: $20,001 in 2001; $25,001 in 2006; $30,001 in 2013, and $34,023 in 2018; See Amore et al (2013), Amore (2016) ,Amore (2019) and (Amore, Viggers et al., 2021) for more detail.

3. Method for comparing known homeless and SHD populations

This section describes the method using the IDI, by which the population experiencing SHD under the census measure, has been compared to other populations of people known to have experienced homelessness.

3.1 The census measure SHD population in the IDI

In the IDI, the operational definition of homelessness was applied to 2013 and 2018 Census data and were linked through the IDI spine to administrative datasets. This produced three groups to be compared: homeless, not homeless, and housing deprivation status cannot be determined.

People experiencing homelessness were further divided into mutually exclusive sub-groups:
- Category A those living rough or in improvised dwellings.
- Category B those living in non-private accommodation.
- Category C those living as a temporary resident in a private dwelling.
- Category D people experiencing homelessness due to living in housing lacking basic amenities (2018 Census only).

People temporarily resident in private dwellings lacking basic amenities were all assigned to Category C to maintain both backwards compatibility and mutual exclusivity. These groups are shown in Table 2.[4]

Some people in each group could not be linked to the IDI spine. As service usage could only be calculated for the spine-linked population it is the spine-linked population considered in the rest of this report.

Table 2: Overall and spine-linked numbers in the major homelessness categories in the 2013 and 2018 censuses

	2018			2013		
	Total	Spine linked	% linked	Total	Spine-linked	% linked
Homeless: A	3,618	3,261	90.1	4,143	3,864	93.3
Homeless: B	5,931	5,571	93.9	7,707	7,236	93.9
Homeless: C	30,042	27,978	93.1	24,720	23,337	94.4
Homeless: D	60,405	57,339	94.9	--	--	--
Not homeless	4,084,365	3,985,641	97.6	3,904,791	3,729,870	95.5
Cannot be determined	454,098	436,755	96.2	234,600	115,185	49.1
Excluded	61,293	55,245	90.1	66,090	59,673	90.3
Total Usual Resident	4,699,755	4,571,790	97.3	4,242,048	3,939,165	92.9

---

[4] Note these numbers are different to some previously reported due both (1) to refinements to the calculation method described Amore *et al* 2021, and; (2) the children in non-private accommodation assigned pro rata to homeless and not-homeless categories are here all included in the 'cannot be determined category', as the pro rata method is inappropriate for use with this analysis (3) people in NGO run temporary accommodation were excluded from this analysis
.

3.2 The comparison populations

There are two known homeless populations available in the IDI for the period under consideration: Auckland City Mission (ACM) homeless clients; and the Housing First cohort. We analysed the Auckland City Mission dataset in the IDI, and the Housing First data were obtained from a publication (Pierse *et al*., 2019).

Clients in the Auckland City Mission dataset were regarded as homeless if their housing type was recorded as one of the following: car; caravan; couch surfing; emergency accommodation; garage; homeless; night shelter; rough sleeping; or boarding. The dataset covers the ten-year period from 9/1/1996 to 22/4/2016, with 3,654 clients being identified as homeless over this period. This dataset was also linked through the IDI spine to administrative datasets (linkage rate 66.5%).

The Housing First cohort was constructed by a research team lead by Professor Nevil Pierse at the University of Otago, Wellington. It comprises 390 clients of an ongoing programme to provide supported, permanent housing to people chronically living rough in Hamilton, New Zealand, run by a non-government organisation called The People's Project. Pierse et al. (2019) analysed this cohort's use of services up until the point when they were housed (between 2014 and 2016). Where possible data from that analysis are included as a comparison.

Both the HF cohort and the ACM cohort were from services aimed at adults. The HF cohort only has those aged 16 and over. Those aged under 18 were included as compassionate cases rather than from child-focused services.

3.3 Selection of variables for analysis

We selected variables in the IDI that are indicators of deprivation, or service usage indicating an underlying need, while seeking to be as consistent with existing analyses as possible. To permit comparison to the Housing First cohort, which is the first homeless population that has been comprehensively studied in the IDI, we took Pierse *et al*.'s (2019) analysis of service use as a starting point, then selected only those variables that had clear face validity as indicators of government intervention or service access, and which had uncomplicated relationships with employment or income status. As an example, we did not include pharmaceutical dispensings, although they are an indicator of health need and access to government subsidised medicines, as they are also dependent on access to a physician and have been subject to a varying regimen of prescription charges known to be a barrier for some low-income people.

We analysed nine variables: hospitalisations; mental health and addiction outpatient events; mental health and addiction inpatient stays; alleged criminal offences; criminal court charges; sentencing and remand; receipt of a means-tested benefit; care and protection concern notifications (as a child); finding of abuse (as a child) (Table 3).

Table 3: Variables included in the analysis

Domain	Variable	Description
Health	1 Hospitalisations	Public hospital admissions. *Dataset*: pub_fund_hosp_discharges_event (Ministry of Health). *Includes:* Inpatient stays and day cases, including those that are publicly funded but occur in a private hospital. *Excludes:* Birth events. *Note:* -Transfers within hospital (e.g. from ICU to a ward), or between hospitals, are recorded as discharges and are included as separate events. - Mental health inpatient stays are included both here and in Variables 2 and 3.
	2 Inpatient mental health & addiction	Contacts with secondary mental health and addiction service providers. *Dataset*: PRIMHD (Ministry of Health). *Includes:* - Events coded as 'Contact' or 'Bednight'. *Excludes:* Events coded as 'Leave' or 'Seclusion'. *Note:* - Services provided over the course of being a client of a service are included as separate events – e.g. each assessment, contact, provision of treatment. - For inpatient stays, each calendar month in which the client spent at least one night in a mental health unit or residential service is included as a separate event e.g. if a client is admitted on January 29 and discharged a few days later, on February 1, this will be counted as 2 events, as the stay spanned 2 calendar months.
	3 Outpatient mental health & addiction	Contacts with secondary mental health and addiction service providers. *Dataset*: PRIMHD (Ministry of Health). *Includes:* -Events coded as 'Contact' or 'Bednight'. *Excludes:* Events coded as 'Leave' or 'Seclusion'. *Note:* - Services provided over the course of being a client of a service are included as separate events – e.g. each assessment, contact, provision of treatment.

Domain	Variable	Description
Justice	4 Alleged criminal offences	Proceedings against alleged offenders. An incident may involve multiple offences, which are all counted separately. *Dataset:* pre_count_offenders (Police). Convicted offender management data.
	5 Criminal court charges	Charges filed in court that have a charge outcome. *Dataset*: Charges (Ministry of Justice).
	6 Sentencing & remand	*Dataset*: ov_periods_historic (Dept of Corrections). *Includes:* Custodial and community sentences, custodial remand, probation. *Excludes:* Categories 'Alive' and 'Aged out'. *Note: - This dataset was no longer being updated from early 2022, so will not be able to be used in analysis of the 2023 Census homeless population.* A person may have multiple records for the same management period (e.g. while they are on remand) and may have different management periods for the same offence, e.g. remand then prison - these are all included and counted as separate events.
Social develop-ment	7 Main benefit assistance	Spells in receipt of a working-age benefit. These benefits support people who are unemployed, in caring roles, or living with a health condition or disability. *Dataset*: msd_spell (Ministry of Social Development).
	8 Care & protection concern notification	Notifications made to CYF, Police, Youth or Family Court about concern about the care or behaviour of a child or young person (defined as under the age of 18 at the time of the 2013 Census). *Dataset*: cyf_intakes_event merged with cyf_intakes_details (Child, Youth & Family). *Note:-* Those younger than 40 at the 2013 Census (5 March 2013) and 45 at the 2018 Census, would have been under 18, and thus eligible for notification, when this dataset began in 1991.
	9 Finding of abuse	Children and young people who have been subject to abuse, as per assessment by CYF social worker. *Dataset*: cyf_abuse_event (Child, Youth & Family). *Note:-* Those younger than 40 at the 2013 Census (5 March 2013) and 45 at the 2018 Census, would have been under 18, and thus eligible for notification, when this dataset began in 1991

3.4 Ethics and confidentiality

Ethical approval for this study was granted by the University of Otago Human Research Ethics Committee, reference HD18/091. All analysis was conducted using de-identified records in a secure datalab environment, and all values recorded in this paper have been approved by Statistics NZ as meeting their confidentiality rules.

4. Results

This section comprises several tables. It begins with demographic data for the spine-linked population for both 2013 and 2018 in Tables 4 and 5, demographic data for the whole population for 2013 and 2018 is in Tables A2 and A3 in Appendix 2. The results for the comparisons of service usage are found in Tables 6 to 11.

- Table 4 compares the demographic profiles of the spine-linked population produced by the 2013 *Census measure*, the comparison homeless populations, and the New Zealand usually resident population.
- Table 5 compares the demographic profiles of the spine-linked population produced by the 2018 *Census measure*, the comparison homeless populations, and the New Zealand usually resident population.
- Table 6 shows the mean number of events experienced by people in each of the homelessness categories at the 2013 Census in the five years preceding the 2013 Census, and comparison rates for the Auckland City Mission and Housing First populations.
- Table 7 shows the mean number of events experienced by people in the high-level homelessness categories at the 2013 Census in the five years preceding the 2013 Census, and comparison rates for the Auckland City Mission broken down into three age categories: those aged under 18, 18-64 year olds, and those aged over 65. These data were not available for the Housing First population.
- Table 8 shows the mean number of events experienced by people in the groups at the time of the 2013 Census, between the start of the datasets and the 2013 Census. This information is not broken down further by age group, as the age groups refer to the age at the time of the census and the service usage may have taken place many decades ago, when in a different age-band.
- Table 9 shows the mean number of events experienced by people in each of the homelessness categories at the 2018 Census in the five years preceding the 2018 Census, and comparison rates for the Auckland City Mission and Housing First populations.
- Table 10 shows mean number of events experienced by people in the high-level homelessness categories at the 2018 Census in the five years preceding the 2018 Census, and comparison rates for the Auckland City Mission broken down into three age categories: those aged under 18, 18-64 year olds, and those aged over 65. These data was not available for the Housing First population.
- Table 11 shows the mean number of events experienced by people in the groups at the time of the 2018 Census between the start of the datasets and the 6 March 2018 date of the Census, this information is not broken down further by age group as the age groups refer to the age at the time of the census and the service usage may have taken place many decades ago, when in a different age-band.

Table 4: Demographic profiles: Known homeless populations and the spine-linked 2013 Census SHD measure

				Percent					
Variable		**Housing First cohort[2]** n=390	**ACM homeless clients[1]** n=2430	**Census Measure Homeless – total [3]** n= 34,437	**Census Measure Homeless A: nonhabitable[3]** n=3864	**Census Measure Homeless B: non-private[3]** n=7236	**Census Measure Homeless C: Temporary crowded private[3]** n= 23,337	**Census Measure not homeless[3]** n= 3,729,870	**Census Measure housing deprivation status cannot be determined[3]** n= 115,185	**NZ usually resident population[3]** n= 3,939,165
Gender	Male	46.2	57.4	51	57.6	58.5	47.5	48.3	52.6	48.4
	Female	53.8	42.6	49	42.4	41.5	52.4	51.7	47.4	51.6
Median age		*Not available*	30	24	*48*	38	21	38	34	38
Age groups	0-24	15.4	29.6	51.8	23.6	27.6	64	33.8	37.5	34
	25-44	51.5	52.3	24.3	19.5	30.8	23.1	25.9	23.7	25.6
	45-64	32.3	17.1	16.9	41.5	30.1	8.7	26.3	23.9	25.9
	65+	≤1.5	1.0	7	15.3	11.6	4.2	13.9	14.8	14.4
Ethnicity (total responses)	European	40.8	24.3	33.7	70.9	56.6	20.5	74.5	73.2	74.2
	Māori	73.1	53.5	32	24.9	17.4	37.7	14.6	19	14.8
	Pacific	6.9	18.8	27.2	6.9	8.6	36.2	7.1	9.1	7.3
	Asian	3.1	1.0	20.8	6.4	21.6	22.9	11.9	7.4	11.8
	MELAA	4.6	0.7	1.5	0.5	2.9	1.3	1.2	0.9	1.2
	Other	≤1.5	4.6	0.8	2.6	1.3	0.4	1.7	1.8	1.7

Notes

[1] Includes all clients identified as homeless in the Auckland City Mission (ACM) IDI dataset, which covers the period 9/1/1996 to 22/4/2016. The ages reported here reflect when they were most recently assessed by the Mission prior to IDI inclusion.

[2] Includes people who were clients of the People's project from October 2014 to June 2017. The ages reported here are when they were first housed.

[3] 2013 Census.

Table 5: Demographic profiles: Known homeless populations and the spine-linked 2018 Census SHD Measure

Variable		Housing First cohort[2] n=390	ACM homeless clients[1] n=2430	Census Measure Homeless – total A-D [3] n= 94,152	Census Measure Homeless – total 2013 comparison A-C [3] n= 36,810	Census Measure Homeless A: nonhabitable n=3261	Census Measure Homeless B: non-private n=5571	Census Measure Homeless C: Temporary crowded private n= 27,978	Census Measure Homeless D: amenities n= 57,339	Census Measure not homeless n= 3,985,641	Census Measure housing deprivation status cannot be determined[3] n=	NZ usually resident population n= 4,571,790
Gender	Male	46.2	57.4	47.2	49.2	54.9	55.0	47.4	45.9	48.7	56.1	49.3
	Female	53.8	42.6	52.8	50.8	45.1	45.0	52.6	54.1	51.3	43.9	50.7
Median age		Not available	30	27	25	50	42	23	29	38	29	37
Age groups	0-24	15.4	29.6	46.1	48.2	23.8	21.8	56.3	44.7	31.8	37.9	32.6
	25-44	51.5	52.3	25.9	27.9	17.8	31.2	28.4	24.6	26.2	33.4	26.7
	45-64	32.3	17.1	18.9	16.2	40.4	32.2	10.2	20.7	26.5	20.2	25.5
	65+	≤1.5	1.0	9.1	7.7	17.9	14.8	5.1	10.0	15.5	8.5	15.2
Ethnicity (total responses)	European	40.8	24.3	36.3	35.3	73.9	60.2	25.8	37.0	73.0	52.8	70.4
	Māori	73.1	53.5	28.4	32.8	25.9	17.7	36.6	25.6	14.5	31.8	16.4
	Pacific	6.9	18.8	22.5	24.3	6.3	8.4	29.5	21.4	6.9	15.6	8.1
	Asian	3.1	1.0	25.2	22.8	5.1	19.3	25.6	26.8	15.0	13.8	15.0
	MELAA	4.6	0.7	3.1	1.9	0.8	2.9	1.9	3.8	1.4	1.6	1.5
	Other	≤1.5	4.6	0.8	0.6	1.7	1.0	0.4	0.9	1.2	1.3	1.2

Notes

[1] Includes all clients identified as homeless in the Auckland City Mission (ACM) IDI dataset, which covers the period 9/1/1996 to 22/4/2016. The ages reported here reflect when they were most recently assessed by the Mission prior to IDI inclusion.

[2] Includes people who were clients of the People's project from October 2014 to June 2017. The ages reported here are when they were first housed.

Table 6 Comparison of service use: Mean number of events in 5 years prior (2013 Census reference), all ages

| | | | Housed 2014 -2016 | Reference date: Census day (5 March 2013) | | | | | | | |
| | | | Housing First cohort | Auckland City Mission homeless clients | Census Measure: homelessness | | | | Census Measure: NOT homeless | Census measure: Cannot be Determined | Census: NZ population |
Domain	Variable	Dataset begins; ages	All	All	All	A	B	C	All	All	All
Health	Hospitalisations	1988; all ages	3.2	2.368	1.100	1.124	1.041	1.114	0.869	0.994	0.904
	Mental Health – outpatient events	2008; all ages	72.5	39.195	7.166	6.591	19.066	3.571	2.329	4.275	2.583
	Mental Health – inpatient stays	2008; all ages	0.79	0.303	0.048	0.043	0.140	0.020	0.014	0.044	0.017
Justice	Alleged criminal offences	2009; all ages	3.7	3.776	0.577	0.408	0.704	0.566	0.142	0.578	0.165
		2009; aged>17	NA	3.833	0.724	0.455	0.711	0.787	0.169	0.695	0.197
	Court charges	1990; all ages	3.5	5.127	0.737	0.557	0.955	0.699	0.173	0.777	0.205
		1990; aged>17	NA	5.198	0.981	0.659	0.990	1.046	0.225	0.983	0.265
	Sentencing & Remand	1998; all ages	9.1	14.739	1.593	1.084	2.313	1.454	0.279	2.398	0.398
		1998; aged>17	NA	14.886	2.171	1.302	2.427	2.239	0.370	3.102	0.524
Social Development	Total Spells on a benefit	1993; all ages	3.3	2.690	1.092	1.030	1.302	1.037	0.370	0.523	0.378
		1993; aged>17	NA	2.748	1.489	1.244	1.366	1.597	0.491	0.675	0.500
	Care& protection concern notification as a child *	1991; all ages	NA	0.334 *	0.335 *	0.144*	0.086*	0.444*	0.097*	0.148*	0.100*
		1991; aged<40	NA	0.466 *	0.467*	0.402*	0.166*	0.529*	0.184*	0.266*	0.190*
	Finding of abuse as a child *	1991; all ages	NA	0.098*	0.111*	0.044*	0.024*	0.148*	0.029*	0.042*	0.030*
		1991; aged<40	NA	0.136*	0.154*	0.125*	0.047*	0.177*	0.055*	0.075*	0.057*

*included here for completeness, however by their nature most adults have not been a child within the last 5 years and therefore the denominator is inappropriately large.

Table 7: Comparison of service use: Mean number of events in 5 years prior (2013 Census reference), age breakdowns

			Auckland City Mission homeless clients			Census Measure homelessness (A-C)			Census Measure NOT homelessness			Census measure Cannot be Determined			NZ population		
		Reference Date: census day (5 March 2013)																
Domain	Variable	Dataset begins and other notes	Aged 0-17	Aged 18-64	Aged 65+	Aged 0-17	Aged 18-64	Aged 65+	Aged 0-17	Aged 18-64	Aged 65+	Aged 0-17	Aged 18-64	Aged 65+	Aged 0-17	Aged 18-64	Aged 65+
Health	Hospitalisations	1988	1.913	2.399	4.125	0.827	1.117	1.998	0.579	0.785	1.753	0.598	0.872	2.120	0.581	0.796	1.911
	Mental Health – outpatient events	2008	13.087	40.384	28.875	1.279	10.057	2.777	1.118	3.109	1.053	1.710	5.828	1.710	1.147	3.427	1.450
	Mental Health – inpatient stays	2008	S	0.318	S	0.003	0.069	0.019	0.002	0.020	0.007	0.006	0.062	0.022	0.003	0.024	0.013
Justice	Alleged criminal offences	2009	4.000	3.867	S	0.183	0.795	0.056	0.062	0.203	0.017	0.186	0.847	0.055	0.069	0.239	0.019
	Court charges	1990	5.609	5.248	S	0.080	1.070	0.149	0.017	0.270	0.026	0.081	1.201	0.07	0.021	0.321	0.028
	Sentencing & Remand)	1998	18.087	15.038	S	0.040	2.382	0.183	0.005	0.449	0.021	0.026	3.804	0.154	0.007	0.641	0.032
Social Development	Total Spells on a benefit	1993	2.000	2.774	0.250	0.027	1.604	0.402	0.004	0.583	0.082	0.011	0.816	0.084	0.005	0.599	0.080
	Care & protection concern notification as a child	1991	1.957	0.294*	S	1.019	0.089*	S	0.352	0.015*	S	0.502	0.054*	S	0.363	0.018*	0
	Finding of abuse as a child	1991	0.783	0.080*	S	0.361	0.019*	S	0.110	0.003*	S	0.159	0.009*	S	0.114	0.003*	0

*included here for completeness, however by their nature most adults have not been a child within the last 5 years and therefore the denominator is inappropriately large.

Table 8: Comparison of service use: Mean number of events between start of datasets and 2013 Census reference, all ages

			Housed 2014 -2016	Reference date: census day (5 March 2013)							
			Housing First cohort	Auckland City Mission homeless clients	Census Measure: homelessness				Census Measure: NOT homeless	Census measure: Cannot be Determined	Census: NZ population
Domain	Variable	Dataset begins; ages	All	All	All (A-C)	A	B	C	All	All	All
Health	Hospitalisations	1988; all ages	11.1	7.147	2.924	3.525	3.361	2.689	2.631	2.865	2.708
	Mental Health – outpatient events	2008; all ages	95.6	39.195	7.166	6.591	19.066	3.571	2.329	4.275	2.583
	Mental Health – inpatient stays	2008; all ages	1.0	0.303	0.048	0.043	0.140	0.020	0.014	0.044	0.017
Justice	Alleged criminal offences	2009; all ages	5.1	3.778	0.577	0.408	0.704	0.566	0.142	0.578	0.165
		2009; aged>17	NA	3.833	0.724	0.455	0.711	0.787	0.169	0.695	0.197
	Court charges	1990; all ages	19.0	19.532	2.323	2.441	3.834	1.835	0.669	2.202	0.757
		1990; aged>17	NA	19.935	3.155	2.938	4.02	2.804	0.884	2.831	0.995
	Sentencing & Remand	1998; all ages	29.8	41.791	4.23	4.142	7.78	3.144	0.875	5.013	1.123
		1998; aged>17	NA	42.422	5.782	5.001	8.179	4.85	1.161	6.491	1.484
Social Development	Total Spells on a benefit	1993; all ages	11.6	8.067	2.884	4.177	4.112	2.289	1.479	1.737	1.491
		1993; aged>17	NA	8.282	3.947	5.050	4.322	3.539	1.965	2.248	1.973
	Care & protection concern notification as a child	1991; all ages	5.9	1.633	0.705	0.279	0.313	0.897	0.202	0.381	0.213
		1991; aged<40	NA	2.273	0.981	0.762	0.604	1.068	0.385	0.682	0.404
	Finding of abuse as a child	1991; all ages	2.3	0.575	0.250	0.092	0.108	0.32	0.068	0.120	0.071
		1991; aged<40	NA	0.801	0.348	0.253	0.208	0.381	0.130	0.215	0.136

Table 9 Comparison of service use: Mean number of events in 5 years prior (2018 Census reference), all ages

Domain	Variable	Dataset begins; ages	Housing First cohort **All**	Auckland City Mission homeless clients **All**	Census Measure: homelessness **All A-D**	"2013 All" A-C	A	B	C	D	Census Measure: NOT homeless **All**	Census measure: Cannot be Determined **All**	Census: NZ population **All**
Health	Hospitalisations	1988; all ages	3.2	2.754	1.114	1.072	1.186	1.247	1.024	1.142	0.920	1.081	0.964
	Mental Health – outpatient events	2008; all ages	72.5	62.539	9.272	10.737	9.274	29.775	7.116	8.332	3.172	7.577	3.871
	Mental Health – inpatient stays	2008; all ages	0.79	0.471	0.053	0.067	0.057	0.199	0.043	0.044	0.017	0.050	0.023
Justice	Alleged criminal offences	2009; all ages	3.7	3.706	0.461	0.655	0.387	0.725	0.672	0.337	0.126	0.738	0.197
		2009; aged>17	NA	**	0.608	0.794	0.467	0.733	0.854	0.469	0.153	0.911	0.239
	Court charges	1990; all ages	3.5	3.697	0.42	0.604	0.363	0.666	0.62	0.301	0.108	0.696	0.176
		1990; aged>17	NA	**	0.578	0.762	0.44	0.681	0.827	0.44	0.137	0.893	0.224
	Sentencing & Remand	1998; all ages	9.1	13.197	1.072	1.574	1.001	1.922	1.571	0.75	0.218	1.765	0.417
		1998; aged>17	NA	**	1.51	2.025	1.209	1.953	2.154	1.124	0.282	2.325	0.54
Social Development	Total Spells on a benefit	1993; all ages	3.3	2.738	0.850	0.933	0.872	1.141	0.899	0.797	0.287	0.759	0.343
		1993; aged>17	NA	**	1.213	1.215	1.063	1.179	1.244	1.211	0.373	0.999	0.445
	Care & protection concern notification as a child *	1991; all ages	NA	0.012*	0.272*	0.259*	0.124*	0.058*	0.315*	0.280*	0.071*	0.273*	0.094*
		1991; aged<45	NA	0.015*	0.375*	0.340*	0.296*	0.107*	0.372*	0.400*	0.123*	0.382*	0.159*
	Finding of abuse as a child*	1991; all ages	NA	0.006*	0.080*	0.078*	0.033*	0.017*	0.095*	0.081*	0.020*	0.080*	0.027*
		1991; aged<45	NA	S	0.110*	0.102*	0.079*	0.033*	0.112*	0.116*	0.034*	0.112*	0.045*

*included here for completeness, however by their nature most adults have not been a child within the last 5 years and therefore the denominator is inappropriately large.

Table 10: Comparison of service use: Mean number of events in 5 years prior (2018 Census reference), age breakdowns

| | | | Reference Date: census day (6 March 2018) | | | | | | | | | | | | | | |
| | | | Auckland City Mission homeless clients | | | Census Measure homelessness (A-D) | | | Census Measure NOT homelessness | | | Census Measure Cannot be Determined | | | NZ population | | |
Domain	*Variable*	*Dataset begins and other notes*	*Aged 0-17*	*Aged 18-64*	*Aged 65+*	*Aged 0-17*	*Aged 18-64*	*Aged 65+*	*Aged 0-17*	*Aged 18-64*	*Aged 65+*	*Aged 0-17*	*Aged 18-64*	*Aged 65+*	*Aged 0-17*	*Aged 18-64*	*Aged 65+*
Health	*Hospitalisations*	*1988*	3.087	2.766	4.250	0.735	1.156	2.112	0.606	0.815	1.802	0.775	1.025	2.408	0.625	0.849	1.949
	Mental Health – outpatient events	*2008*	36.000	64.464	15.625	2.040	13.833	3.161	1.446	4.254	1.520	2.359	9.977	3.448	1.562	5.206	2.034
	Mental Health – inpatient stays	*2008*	0.522	0.481	S	0.007	0.082	0.016	0.004	0.025	0.008	0.007	0.068	0.024	0.005	0.032	0.012
Justice	*Alleged criminal offences*	*2009*	4.696	3.775	S	0.125	0.691	0.062	0.037	0.186	0.023	0.199	1.017	0.075	0.057	0.292	0.027
	Court charges	*1990*	4.957	3.758	S	0.057	0.657	0.056	0.013	0.167	0.021	0.078	0.997	0.074	0.021	0.273	0.024
	Sentencing & Remand	*1998*	24.87	13.207	S	0.07	1.719	0.122	0.010	0.347	0.027	0.016	2.603	0.119	0.013	0.665	0.037
Social Development	*Total Spells on a benefit*	*1993*	2.783	2.804	S	0.022	1.344	0.337	0.006	0.448	0.078	0.011	1.106	0.144	0.007	0.535	0.083
	Care & protection concern notification as a child (all / aged<45)	*1991*	0.261	0.004*	NA	0.772	0.061*	NA	0.279	0.010*	NA	1.007	0.042*	NA	0.365	0.014*	NA
	Finding of abuse as a child (all / aged<45)	*1991*	0.174	S	NA	0.231	0.015*	NA	0.079	0.003*	NA	0.303	0.010*	NA	0.105	0.004*	NA

*included here for completeness, however by their nature most adults have not been a child within the last 5 years and therefore the denominator is inappropriately large.

Table 11: Comparison of service use: Mean number of events between start of datasets and 2018 Census reference, all ages

| | | | Housed 2014-2016 | Reference date: census day (5 March 2013) | | | | | | | | | |
| | | | Housing First cohort | Auckland City Mission homeless clients | Census Measure: homelessness | | | | | | Census Measure: NOT homeless | Census measure: Cannot be Determined | Census: NZ population |
Domain	Variable	Dataset begins; ages		All	All A-D	All A-C	A	B	C	D	All	All	All
Health	Hospitalisations	1988; all ages	11.1	9.899	3.530	3.348	4.103	4.235	3.083	3.647	3.070	3.529	3.185
	Mental Health – outpatient events	2008; all ages	95.6	101.734	14.328	16.374	14.659	44.396	10.994	13.014	5.089	12.123	6.225
	Mental Health – inpatient stays	2008; all ages	1.0	0.774	0.086	0.105	0.096	0.312	0.065	0.074	0.030	0.078	0.038
Justice	Alleged criminal offences	2009; all ages	5.1	7.483	0.836	1.148	0.772	1.344	1.152	0.635	0.251	1.366	0.379
		2009; aged>17	NA	**	1.137	1.432	0.931	1.368	1.516	0.916	0.315	1.735	0.475
	Court charges	1990; all ages	19.0	23.227	2.036	2.603	2.884	3.92	2.307	1.673	0.724	3.499	1.039
		1990; aged>17	NA	23.655	2.882	3.363	3.502	4.024	3.168	2.52	0.938	4.592	1.347
	Sentencing & Remand	1998; all ages	29.8	54.998	4.025	5.451	5.647	8.2	4.880	3.109	1.065	6.922	1.774
		1998; aged>17	NA	55.501	5.712	7.064	6.86	8.379	6.739	4.697	1.381	9.129	2.306
Social Development	Total Spells on a benefit	1993; all ages	11.6	10.805	3.055	3.041	4.419	4.67	2.556	3.064	1.589	3.050	1.755
		1993; aged>17	NA	11.057	4.368	3.967	5.392	4.827	3.547	4.668	2.068	4.021	2.285
	Care & protection concern notification as a child	1991; all ages	5.9	1.645	0.861	0.933	0.385	0.439	1.095	0.815	0.238	0.905	0.315
		1991; aged<45	NA	2.035	1.188	1.222	0.914	0.819	1.290	1.164	0.409	1.266	0.530
	Finding of abuse as a child	1991; all ages	2.3	0.581	0.290	0.324	0.110	0.156	0.382	0.269	0.076	0.294	0.101
		1991; aged<45	NA	0.719	0.401	0.424	0.265	0.294	0.450	0.385	0.130	0.411	0.170

5. Discussion

This discussion covers three broad areas. Firstly, the construction of the estimates of service usage and government engagement are discussed. Secondly, the comparisons of service usage and government engagement rates between the *census measure* SHD population and known populations which have experienced homelessness are discussed to estimate the utility of the measure. Thirdly, the results of the service usage data for the populations classified by *census measure* are discussed.

5.1 Construction of the estimates of service usage

Linkage rates to the IDI spine of over 90% were achieved for all the major groups of *census measure* homelessness considered, except for the "Cannot be determined" category in 2013. This category typically provided incomplete information at the individual, family and/or household level. The higher linkage rate in 2018 is evidence of the considerable work StatsNZ put into further developing the 2018 Census. In both years, the population identified as "Not homeless" had higher linkage rates than any of the subcategories of homelessness, and those living without habitable accommodation the lowest rates (except for the aforementioned "Cannot be determined" in 2013). The lower rates of linkage for people in the most vulnerable housing situations are both an indicator of possible increased service need and a barrier to service use being accurately measured. However, the linkage rates of the subgroups of interest all being over 90% suggest that enough of the *census measure* SHD population could be connected to their service usage that it was appropriate that the analysis be conducted.

The ACM dataset had a much lower linkage rate of 66.5% therefore their service usage data is potentially biased towards those who provided the ACM with more information. The HF analysis only included individuals already linked to the spine, however this group had additional information available to assist with the linkage including the National Health Identifier (NHI).

Although we took Pierse et al.'s (2019) analysis of service use as a starting point, we made slight changes to some of the coding logic. The minor improvements made to the way that spells on a benefit were calculated caused differences of less than one percent to the results. Pierse's analysis also included all hospitalisation events, but the analysis presented here excludes birth events. As a service aimed at adults there would have been few, or no, birth events included in the HF analysis; however the census-based analysis included people in New Zealand of all ages, and as the dataset began in 1988 this could have included birth events for almost every person born in New Zealand up to the age of 25 or 30.Therefore, including birth events for the younger age-group would have appreciably increased hospitalisation rates in that age group while reducing overall sensitivity and comparability.

Although some people aged under 18 have been on benefits, for the majority of the population benefits are not accessed until at least the age of 18. Therefore, restricting the denominator population to those 18 and over for the benefit analysis increases comparability,

even while excluding some young people in very problematic circumstances. This can be seen by the overall average number of spells on a benefit increasing for both the ACM and all other population groups in Table 8 when restricting by age; however the total number of spells increased by less for the ACM population than the other subgroups considered. Similar age-related considerations apply to the three outcomes in the justice domain.

5.2 Examining the utility of the census measure

Disaggregating the overall *census measure* by the type of homelessness experienced allows a somewhat nuanced comparison with the HF and ACM groups. The Housing First cohort, were all chronic rough sleepers before rehousing. Similarly, the Auckland City Mission is an inner-city service with a particular focus on rough sleepers. Therefore the life situations of the comparison groups might have been most similar to the "A: rough or improvised dwelling" category of the *census measure*.

Although, about half of the overall *census measure* population experiencing homelessness was under the age of 25, with also a high rate in young adulthood, and declining rates in older adulthood and retirement age, the age breakdown for the "A: rough or improvised dwelling" was different with a median age twice that for the "A-C" group in both 2013 and 2018, and the largest group aged between 45-64. In contrast the age structure of the HF and ACM homeless populations had over half their people who had experienced homelessness aged 25-44, with very few of retirement age.

There are also ethnicity and gender differences, but Māori and Pacific people are overrepresented in all three homeless populations.

For the *census measure* population experiencing homelessness, almost all the metrics of social development, justice and health examined showed higher rates of service usage than for the non-homeless population. The HF and ACM populations showed higher rates of service usage than each *census measure* sub-category for all six outcomes in both the health and justice domains.

The social development domain showed more complicated patterns, possibly due to the age structures of the populations, and the effect of time passing on the eligibility of people in the cohort to be considered a child, or the effectiveness of the ACM in intervening positively in the lives of its clients. In the five years before the 2013 Census ACM clients aged under 18 had higher rates of both care and concern notifications and findings of abuse than the *census measure* SHD population, which was higher again than the *census measure* not-homeless population. However, for the five years before 2018 the ACM clients aged 0-18 had lower rates than *census measure* SHD population and similar rates for care and concern notifications although higher rates of confirmed abuse than the *census measure* not-homeless population.

Overall, the results suggest that the construct is valid. The increased service usage for the *census measure* of homelessness largely mirrors the patterns in the other known populations that have experienced homelessness.

5.3 What the census measure suggests about the SHD population

The *census measure* SHD populations considered in this report vary a little from those in previous publications. This is due both to ongoing code refinements largely described in Amore *et al* 2021, and due to practical issues around the construction of the estimates for some people living in non-private accommodation – specifically some children for whom there was inadequate family information available, and those living in some NGO run accommodation. This inability to include some people living in temporary accommodation, while undesirable, is unlikely to bias the results obviously in one direction.

The results presented in this report show associations, not causality. We do not know, for instance, whether the high rates of mental health outpatient events among people living in temporary accommodation were *caused by* the people living in inadequate temporary accommodation; or the events were the *cause for* a mental health worker to refer the person temporary accommodation. However, we do know that the events occurred before the date on which the housing situation was measured (Census dates 2013 or 2018).

Metrics included here are of service use but need to be thought about carefully. For example, the number of people who have entered a new corrections sentence within the last 5 years, but are currently *not* in corrections custody, is a specialised subset of people who have been released. These people may be on parole, a condition of which could include a particular dwelling place.

Similarly extreme caution should be taken when considering the rates of care and protection notifications or findings of abuse as a child in the last five years for people aged 18-64. The data are included for completeness, however by their nature most adults have not been a child in the last five years, so these statistics are liable to misinterpretation. For these categories it is more appropriate to consider the rates only for those aged under 18 at census date, or life-time occurrence of the notification or confirmed abuse among those young enough to have been a child when the dataset commenced.

Changes in the amount of temporary accommodation available and who lives in it over time may also induce changes in rates, for example, the number of families living in motels as temporary accommodation since the COVID-19 pandemic began.

Owing to the larger number of people in the postulated less severe categories of severe housing deprivation, the rates for the overall population in severe housing deprivation (homeless) are strongly driven by the service usage of the people assigned to those categories. This may be particularly important when comparing trends over time, both because people in the "Without Amenities: D" category" could be included in the total severe

housing deprivation category in 2018, and because they would have been included in the "not homeless" category in the analysis of the 2013 data.

For the *census measure* population experiencing homelessness, almost all the metrics of social development, justice and health examined showed higher rates of service usage than for the non-homeless population.

In the justice domain the rates experienced by subgroups and overall were at least twice the rates experienced by the non-homeless population.

All the indicators considered in the health domain showed increased rates for the homeless populations over the non-homeless populations. However, the strength of effect varied from marginal (hospitalisation rates for those sharing accommodation in the 5 years before the 2018 Census, RR: 1.004) to the more extreme (mental health inpatient stays for those in temporary accommodation in the 5 years before the 2018 Census, RR: 11.7). Overall, the mental health outcomes tended to have stronger rate ratios than the overall hospitalisation outcome.

Similar results were found in the social development domain. The overall rates of *spells on a benefit* for those aged over 17 in the five years prior to census day for *census measure* homeless population were over three times the rates for the non-homeless population for both censuses, although rates for specific categories were not all over three. The lifetime rates of *spells on a benefit* were also increased; overall the rates were approximately double that of the non-homeless population: those in the "without shelter" category had the highest rates and those who were guests in private crowded accommodation the lowest rates. Those aged 0-17 at the census had, in the five years prior to census date, a rate of both *care and protection notifications* and *findings of abuse* two to three times that of the not-homeless population for both periods. Overall lifetime rates of *care and protection notifications* and *findings of abuse* were also elevated among those young enough to be in the dataset for both periods: the 2013 Census analysis found overall rates about two and a half times that of the non-homeless population, and the 2018 Census analysis overall rates of about three times the non-homeless population; over both time periods those in temporary accommodation had the most increased rates.

Although, about half of the overall *census measure* population experiencing homelessness was under the age of 25, with also a high rate in young adulthood, and declining rates in older adulthood and retirement age. The age structure also varied inside the subgroups of the *census measure* population experiencing homelessness, with greater proportions of people under the age of 25 in the "C: temporary crowded private" and "D: amenities" categories. These age differences may, at least partially, drive some differences in service usage between the populations.

.

For this analysis the "D: Lacking amenities" category was considered separately from the "A: Without Shelter" category despite them both being part of "Living without habitable accommodation due to lack of access to minimally adequate housing" category 1 of the classification of severe housing deprivation (Table 1). The difference in rates of service usage, and possibility of the much larger category D driving the observed rates in a combined category suggests that this was an appropriate decision.

The four sub-categories of those experiencing homelessness (A: Without Shelter, B: Temporary Accommodation, C: Sharing accommodation, D: Lacking amenities) were ordered to approximate severity of the housing deprivation experienced. However, in the analyses that considered subcategories there was not a straightforward relationship between category and outcome. For many of the outcomes considered, those in Temporary Housing had greater service usage than those Without Shelter. This warrants further investigation, but may be at least partially explained by the age structure of the different populations and the relatively easier access to services, when people are housed.

6. Conclusion

There is no direct measure of lack of housing in administrative data or the census. The historic measure "no fixed abode" was last used in the 1986 census (possibly due to it being a stigmatizing and anachronistic Victorian term connected to the Poor Laws). Similarly, there is a lack of housing information in hospital admission records which could be used to both advocate for the patient and understand the causal mechanisms of illness.

Despite this lack of explicit routinely collected data, this analysis shows that high quality Census data that covers a broad enough array of topics is able to identify a population that fits with expectations as to what a homeless population looks like in terms of engagement with government services.

Disclaimer

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit https://www.stats.govt.nz/integrated-data

Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers.

References

Amore, K. (2016). Severe housing deprivation in Aotearoa/New Zealand: 2001-2013. Retrieved from He Kainga Oranga's website: https://www.healthyhousing.org.nz/resources/severe-housing-deprivation-aotearoanew-zealand-2001-2013

Amore, K. (2019). *Everyone Counts: Defining and measuring severe housing deprivation (homelessness)* (Doctoral thesis, University of Otago, Dunedin, NZ). Retrieved from http://hdl.handle.net/10523/9085.

Amore, K., Viggers, H., Baker, M. G., & Howden-Chapman, P. (2013). *Severe Housing Deprivation: The problem and its measurement*. Retrieved from Statistics New Zealand's website: https://statsnz.contentdm.oclc.org/digital/collection/p20045coll4/id/303/

Amore, K., Viggers, H., Howden-Chapman, P., (2021*). Severe housing deprivation in Aotearoa New Zealand 2018 - June 2021 update*. He Kainga Oranga, University of Otago, Wellington Retrieved from https://www.hud.govt.nz/assets/Uploads/Documents/Severe-Housing-Deprivation-2018-Estimate-Report.pdf

Edgar, B (2009). 2009 European review of statistics on homelessness. Retrieved from https://www.feantsaresearch.org/download/6-20098376003316223505933.pdf

Pierse, N., Ombler, J., White, M., Aspinall, C., McMinn, C., Atatoa-Carr, P., Nelson, J., Hawke, K., Fraser, B., Cook., H., & Howden-Chapman, P. (2019). Service usage by a New Zealand Housing First cohort prior to being housed. *SSM - Population Health, 8,* 100432.

Statistics NZ. (2007). *Principle and Protocol for Producers of Tier 1 Statistics.* Wellington: Author. Available at https://www.stats.govt.nz/assets/Uploads/Principles-and-protocols-for-producers-of-tier-1-stats/principles-and-protocols-for-producers-of-tier-1-stats.pdf

Statistics NZ. (2014). New Zealand Definition of Homelessness: 2105 update . Retrieved from: https://www.stats.govt.nz/assets/Uploads/Retirement-of-archive-website-project-files/Methods/New-Zealand-definition-of-homelessness/nz-definition-homelessness-2015-update.pdf

Waitangi Tribunal, 2023. Kāinga Kore: The Stage One Report of the Housing Policy and Services Kaupapa Inquiry on Māori Homelessness. Waitangi Tribunal, Wellington, New Zealand. Available at: https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_211421672/Kainga%20Kore%20W.pdf

Appendix 1 The concept of homelessness

Table A1 Three core dimensions of housing adequacy

Dimension	Basic requirements
Habitability (structural features)	**1 Enclosure** Roof & Walls & Floor & **2 Basic amenities** Drinkable water & Toilet & Bath or shower & Cooking facilities & Energy source
Privacy and control	1 The dwelling is enclosed (as per Habitability criterion 1); *and* 2 The dwelling has all basic amenities (as per Habitability criterion 2); *and* 3 The dwelling is managed by the resident/s on a day-to-day basis (not by an external party) – that is, it is a private dwelling; *and* 4 The person is a permanent resident (not staying in the dwelling on a temporary basis).
Security of tenure	Legal termination of tenancy rights are equal to the minimum provided to people living in private rental housing.

Source: Amore et al. (2013, p.5).

Figure A1 A conceptual model of homelessness
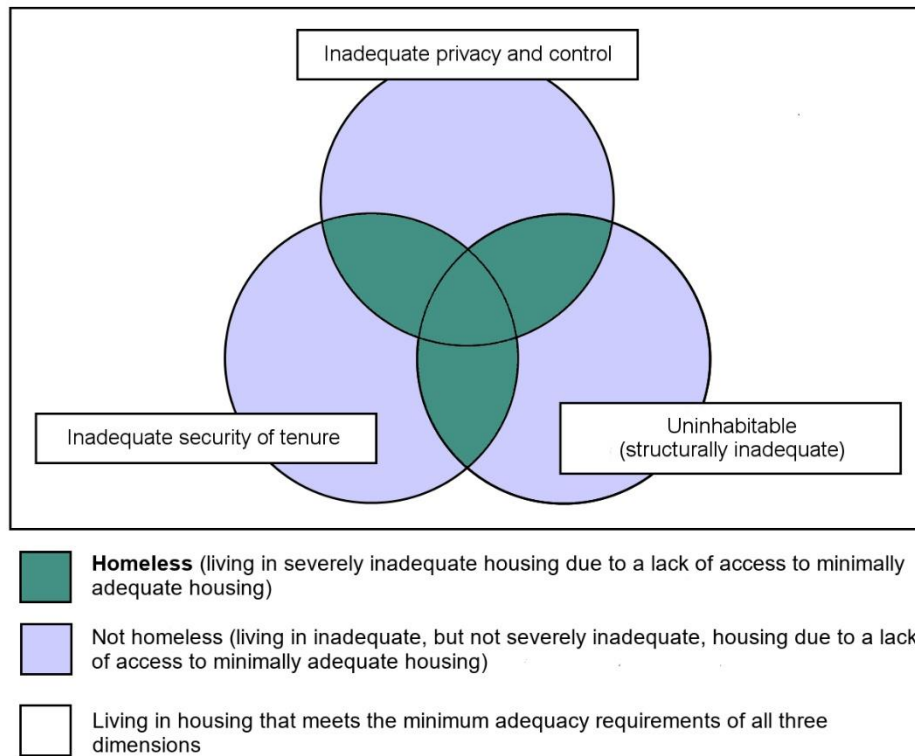
Source: Amore et al. (2013, p.5), adapted from Edgar (2009, p.16).

Table A2 How each living situation qualifies as severely inadequate housing

Three core dimensions of housing adequacy and criteria for minimal adequacy

Specific living situation[1]	Habitability (structural features)		Privacy and control				Security of tenure
	Enclosure	Basic amenities	Enclosure	Basic amenities	Dwelling managed by residents	Permanent resident	Termination of tenancy rights equal to the minimum in a conventional rental
a. Living rough (not in an enclosed structure)	✗	-	✗	-	-	-	✗
b. Living in housing that is enclosed but lacks one or more basic amenities (in which residents lack minimally adequate security of tenure)	✓	✗	✓	✗	-	-	✗
c. Living in a night shelter	✓	✓	✓	✓	✗	-	✗
d. Living in a women's refuge	✓	✓	✓	✓	✗	-	✗
e. Living in other accommodation targeted at people who LAMAH	✓	✓	✓	✓	✗	-	✗
f. Living in an institution that is not targeted at people who LAMAH	✓	✓	✓	✓	✗	-	✗
g. Living in a camping ground or motor camp	✓	✓/✗	✓	✓/✗	✗	-	✗
h. Living in other commercial accommodation	✓	✓	✓	✓	✗	-	✗
i. Living in other non-private accommodation	✓	✓	✓	✓	✗	-	✗
j. Living as a temporary resident in a private dwelling that has all basic amenities	✓	✓	✓	✓	✓	✗	✗
k. Living in housing that lacks one or more basic amenities (with minimally adequate security of tenure)	✓	✗	✓	✗	-	-	✓

1. This table describes how we identified the housing types that are included in the severe housing deprivation classification. It is important to note that not everyone living in these housing types qualifies as severely housing deprived – only those who are doing so due to a lack of access to minimally adequate housing.

Key: ☑ Satisfies criterion

▮ Fails criterion

- Criterion not applicable because the housing type has already failed a criterion in the same dimension

Appendix 2: Additional Data

Table A2: Demographic profiles: Known homeless populations and the whole 2013 Census SHD measure

Variable		Housing First cohort[2] n=390	ACM homeless clients[1] n=3654	Census Measure Homeless – total [3] n=36,567	Census Measure Homeless A: nonhabitable[3] n=4143	Census Measure Homeless B: non-private[3] n=7707	Census Measure Homeless C: Temporary crowded private[3] n=24,720	Census Measure not homeless[3] n=3,904,791	Census Measure housing deprivation status cannot be determined[3] n=234,600	NZ usually resident population[3] n=4,242,048
				Percent						
Gender[4]	Male	46.2	61.2	51.3	58.5	58.9	47.8	48.5	51.5	48.7
	Female	53.8	38.8	48.7	41.5	41.1	52.2	51.5	48.5	51.3
Median age		*Not available*	31	24	*48*	38	21	38	30	37
Age groups	0-24	15.4	29.0	51.8	24.0	27.5	64.0	33.7	41.9	34.2
	25-44	51.5	52.9	24.1	19.6	30.8	22.8	26.0	23.5	25.6
	45-64	32.3	17.0	17.0	41.3	29.9	8.8	26.4	22.4	25.8
	65+	≤1.5	1.0	7.1	15.1	11.8	4.3	13.9	12.1	14.3
Ethnicity (total responses)	European	40.8	24.1	33.7	70.7	56.4	20.5	74.3	72.9	74.0
	Māori	73.1	53.1	32.2	25.2	17.7	37.8	14.7	19.1	14.9
	Pacific	6.9	18.1	27.3	6.9	8.8	36.4	7.2	9.3	7.4
	Asian	3.1	1.1	20.5	6.5	21.4	22.5	11.9	7.5	11.8
	MELAA	4.6	0.8	1.5	0.6	2.9	1.3	1.2	0.9	1.2
	Other	≤1.5	5.0	0.9	2.8	1.4	0.4	1.7	1.7	1.7

Notes

[1] Includes all clients identified as homeless in the Auckland City Mission (ACM) IDI dataset, which covers the period 9/1/1996 to 22/4/2016. The ages reported here reflect when they were most recently assessed by the Mission prior to IDI inclusion.

[2] Includes people who were clients of the People's project from October 2014 to June 2017. The ages reported here are when they were first housed.

[3] 2013 Census – therefore not directly comparable with the 2018 "not homeless" number due to the additional category included in 2018

[4] Some information on gender diversity is available for the ACM population, but owing to low numbers and confidentiality issues for the purposes of this table they have been divided between Male and Female in a way that maintains the ratio of the genders

Table A3: Demographic profiles: Known homeless populations and the whole 2018 Census SHD measure

Variable		Housing First cohort[2] n=390	ACM homeless clients[1] n=3654	Census Measure Homeless – total A-D[3] n=99,996	Census Measure Homeless – total 2013 comparison A-C[3]	Census Measure Homeless A: nonhabitable[3] n=3618	Census Measure Homeless B: non-private[3] n=5931	Census Measure Homeless C: Temporary crowded private[3] n=30,042	Census Measure Homeless D: amenities n=60,405	Census Measure Not Homeless[3] n=4,084,365	Census Measure housing deprivation status Cannot Be Determined[3] n=454,098	NZ usually resident population[3] n=4,699,755
Gender[4]	Male	46.2	61.2	47.3	49.3	54.6	55.3	47.5	46.0	48.7	55.9	49.4
	Female	53.8	38.8	52.7	50.7	45.4	44.7	52.5	54.0	51.3	44.1	50.6
Median age		*Not available*	31	*25*	*25*	*51*	*44*	22	25	37	30	36
Age groups	0-24	15.4	29.0	46.3	48.3	25.0	21.9	56.3	45.1	32.1	37.5	32.8
	25-44	51.5	52.9	25.7	27.7	18.6	31.0	28.1	24.4	26.1	33.2	26.6
	45-64	32.3	17.0	18.9	16.3	39.0	32.3	10.4	20.6	26.3	20.4	25.4
	65+	≤1.5	1.0	9.0	7.7	17.5	14.8	5.1	9.9	15.5	8.9	15.2
Ethnicity (total responses)	European	40.8	24.1	36.3	35.3	72.9	59.7	25.9	36.9	72.8	53.1	70.2
	Māori	73.1	53.1	28.8	33.1	26.0	17.6	37.0	25.9	14.6	31.4	16.5
	Pacific	6.9	18.1	22.5	24.1	6.5	8.6	29.2	21.5	7.0	15.5	8.1
	Asian	3.1	1.1	25.0	22.7	5.6	19.6	25.4	26.5	15.0	13.9	15.1
	MELAA	4.6	0.8	3.1	1.9	1.1	2.9	1.8	3.8	1.5	1.6	1.5
	Other	≤1.5	5.0	0.8	0.6	1.7	1.0	0.4	0.9	1.2	1.3	1.2

The header "Percent" spans across the data columns.

Notes

[1] Includes all clients identified as homeless in the Auckland City Mission (ACM) IDI dataset, which covers the period 9/1/1996 to 22/4/2016. The ages reported here reflect when they were most recently assessed by the Mission prior to IDI inclusion.

[2] Includes people who were clients of the People's project from October 2014 to June 2017. The ages reported here are when they were first housed.

[3] 2018 Census.

[4] Some information on gender diversity is available for the ACM population, but owing to low numbers and confidentiality issues for the purposes of this table they have been divided between Male and Female in a way that maintains the ratio of the genders