

Longitudinal evidence on housing as a social determinant of health

Professor Rebecca Bentley
HILDA conference, September 2026



Healthy Housing
Centre of Research Excellence

Housing not
just as a
financial
asset, but a
critical
infrastructure
for human
wellbeing and
health.



Provocations

1

Housing people
well prevents
poor health

2

We do not
house
everyone well...

3

...there is a cost
of doing nothing
to change this

4

...insights for
policy

Team



Prof Rebecca Bentley

- Social epidemiology
- Home environments
- Climate & housing
- Mental health & housing
- Health equity



Dr Kate Mason

- Social & geographical health inequalities
- Social epidemiology
- Housing & sleep



Dr Ang Li

- Social inequalities
- Applied economics
- Climate, housing & health



Dr Erika Martino

- Housing & gendered violence
- Spatial inequality
- Housing policy



Adelle Mansour

- Citizen science
- Climate & housing
- Home environments
- Social determinants of health



Yuxi Li

- Social determinants of health
- Housing & young people
- Health & socioeconomic inequalities



Maria Gatto

- Home environments
- Biotoxins in homes
- Mental health



Paul Fleckney

- Young people
- Built environment
- Mental health



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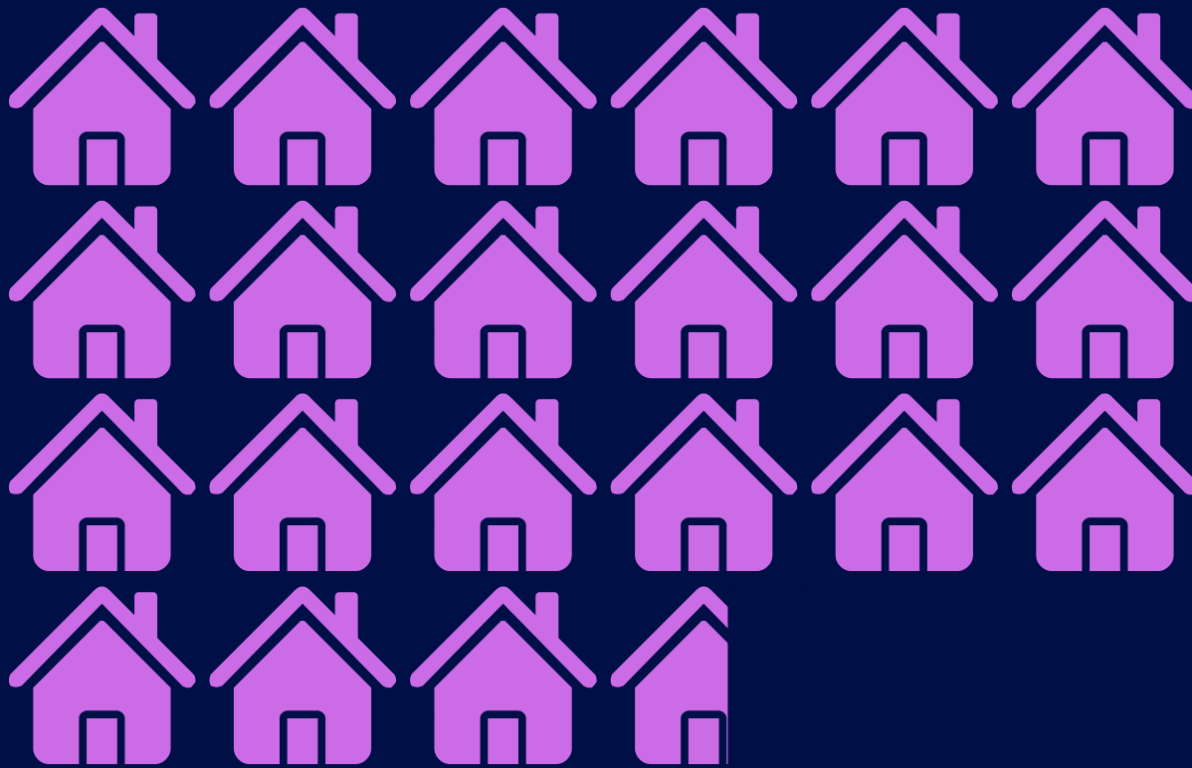


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Australia's housing system



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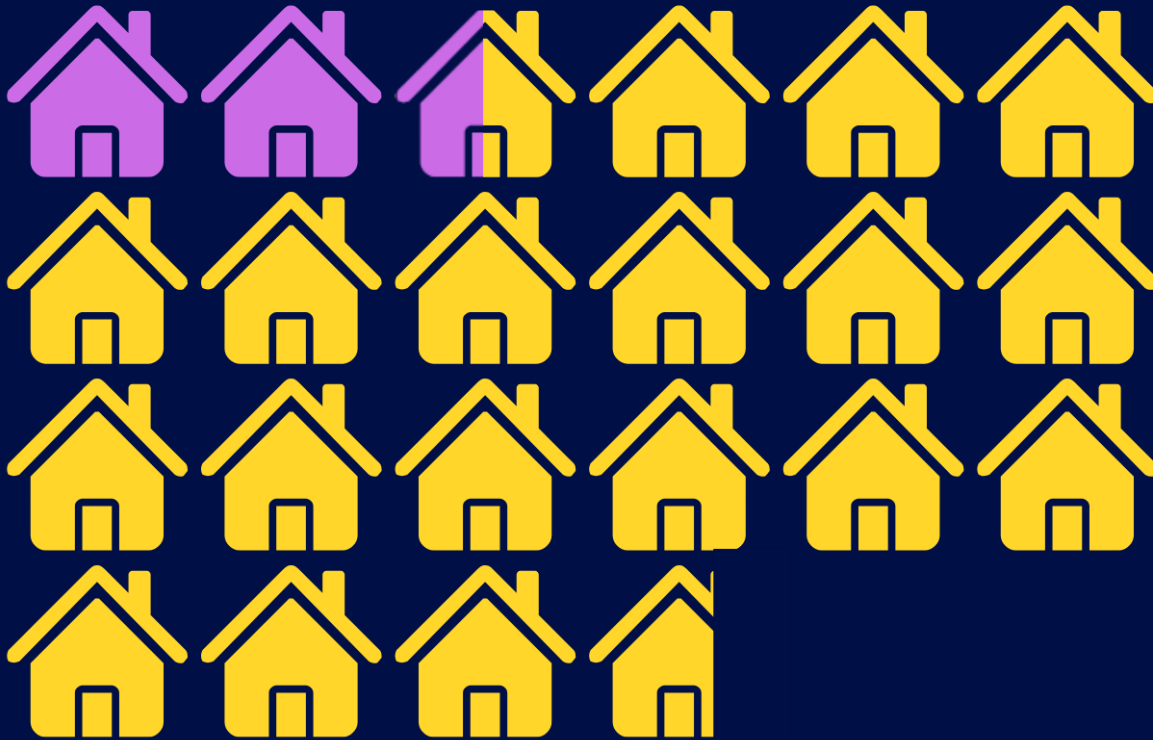


 = 500,000 homes

~11 million dwellings
Valued at \$12 trillion.



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1.2M homes have
major structural
problems.



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2.8M homes have
mould and/or
damp.



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Most (~911M)
homes are more
than 20 years old.



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Ownership
Private rental
Social rental
Other



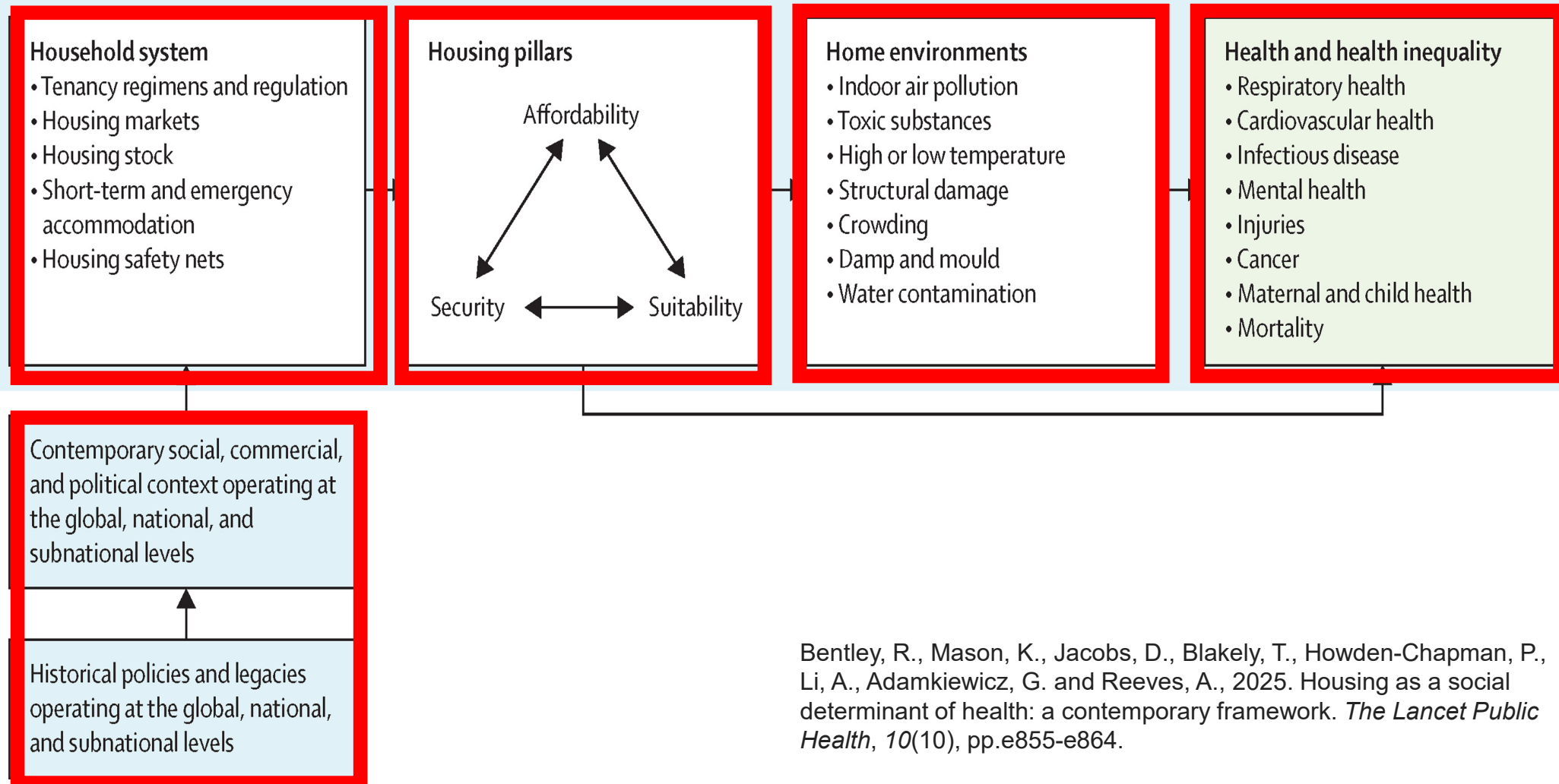
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Ownership
Private rental
Social rental
Other

With our changing climate, ~**4M** homes require public health attention – most privately owned.

Household characteristics: income, gender and age composition, education, employment, ethnicity, disability, and long-term health condition
Geographical context: urban or rural location and proximity to amenities



Bentley, R., Mason, K., Jacobs, D., Blakely, T., Howden-Chapman, P., Li, A., Adamkiewicz, G. and Reeves, A., 2025. Housing as a social determinant of health: a contemporary framework. *The Lancet Public Health*, 10(10), pp.e855-e864.



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1

Housing people well protects health

Risk factors uncovered in our research



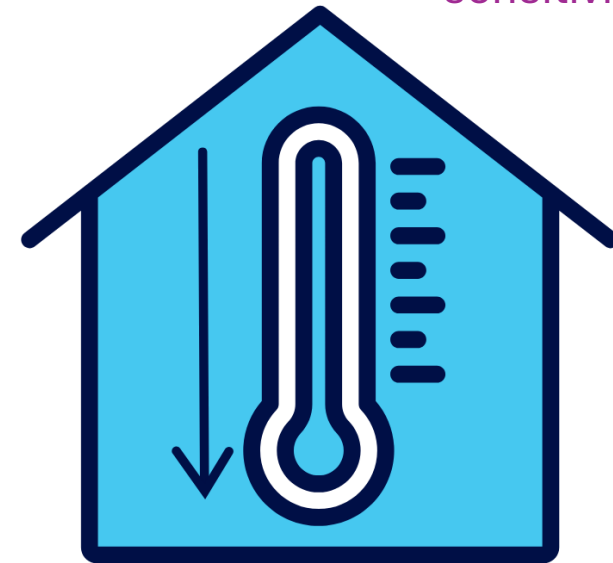
Energy hardship and mental health, depression and hypertension

When people can no longer afford to warm their homes their:

- mental health declines significantly (by 4.6-points on the SF-36 mental health scale)
- odds of reporting depression or anxiety increases by 49%
- odds of reporting hypertension increases 71%

HILDA data

Fixed effects, extensive sensitivity analyses



Housing policy protective effects uncovered in our research

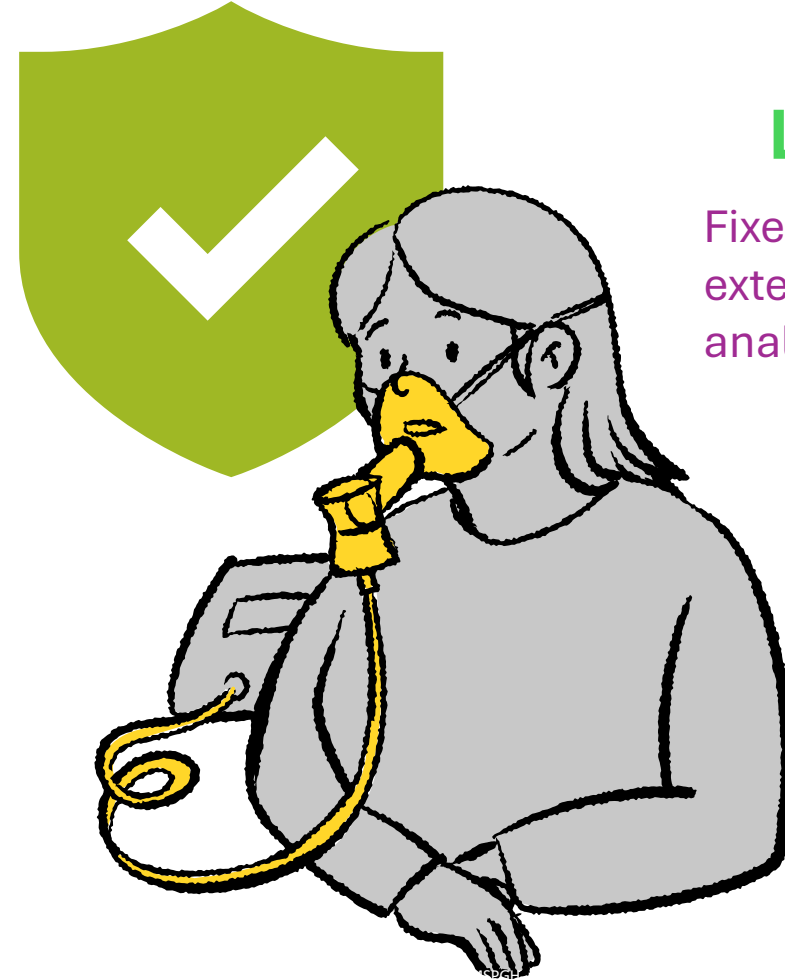
Affordability and incident childhood asthma



Transitions into affordable housing associated with a 31% reduction in children's asthma risk.



New receipt of rental assistance associated with a 65% lower odds of asthma onset in children among low-income private renters,)



LSAC data

Fixed effects,
extensive sensitivity
analyses



If CRA was a medication.....!

Li, Y., Singh, A. and Bentley, R., 2026. The protective effect of housing affordability on childhood asthma risk: a longitudinal fixed-effects analysis. *American Journal of Epidemiology*, p.kwag013.

Risk factors uncovered in our research

Rent increases and mental health



HILDA data

Fixed effects, extensive sensitivity analyses

People's mental health scores were worse following a rent increase of at least 10%.



Effects were concentrated in younger renters.



Effects were stronger when there was pre-existing affordability stress.



Mason, K... Mansour A, Martino, E. Bentley, R., 2026. Rent increases and mental health among low-income renters in Australia: a longitudinal analysis . *Social Science & Medicine*, Accepted 8th May.

Suitability and mental health e.g., unwanted noise



- Examined the impact of environmental noise from road traffic, airplanes, trains, and industry on mental health and psychological distress.
- Used instrumental variables, fixed-effects models, and an aggregated area-level measure of noise exposure.
- **Exposure to unwanted noise from traffic is associated with poor mental health.**
- **Social renters, lone parents, people with disabilities and low income were disproportionately affected by noise.**

1. distance to a nearest train line or major road.
2. population density at the local area level.

Fixed effects, latent variable,
extensive sensitivity analyses



American Journal of Preventive Medicine

Go to American Journal of Preventive Medicine 2, August 2022, Pages e39-e48



Research Article

Environmental Noise Exposure and Mental Health: Evidence From a Population-Based Longitudinal Study

Ang Li PhD , Erika Martino MUP, Adelle Mansour MPH, Rebecca Bentley PhD

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2

We do not house everybody well

Indigenous
Australians in
remote
communities
face the worst
housing
conditions.

🕒 This article is more than 8 years old

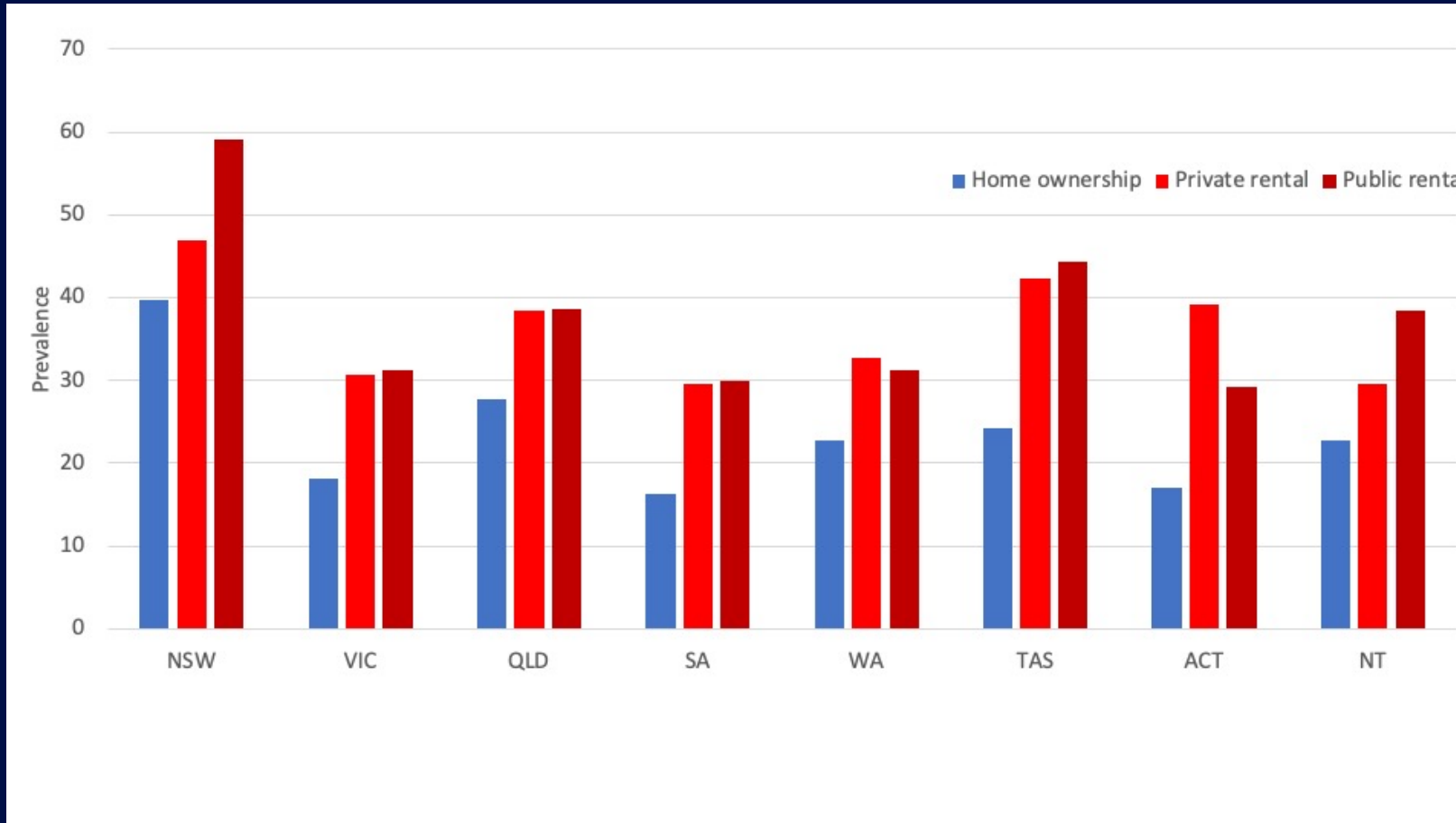
Northern Territory town camps need \$77m for urgent repairs

NT government says it will spend \$25m - and calls on federal government to match it



📷 A town camp outside Alice Springs. The Northern Territory has says it will spend \$25m on urgent repairs to housing. Photograph: Children's Ground

Housing in the rental sector



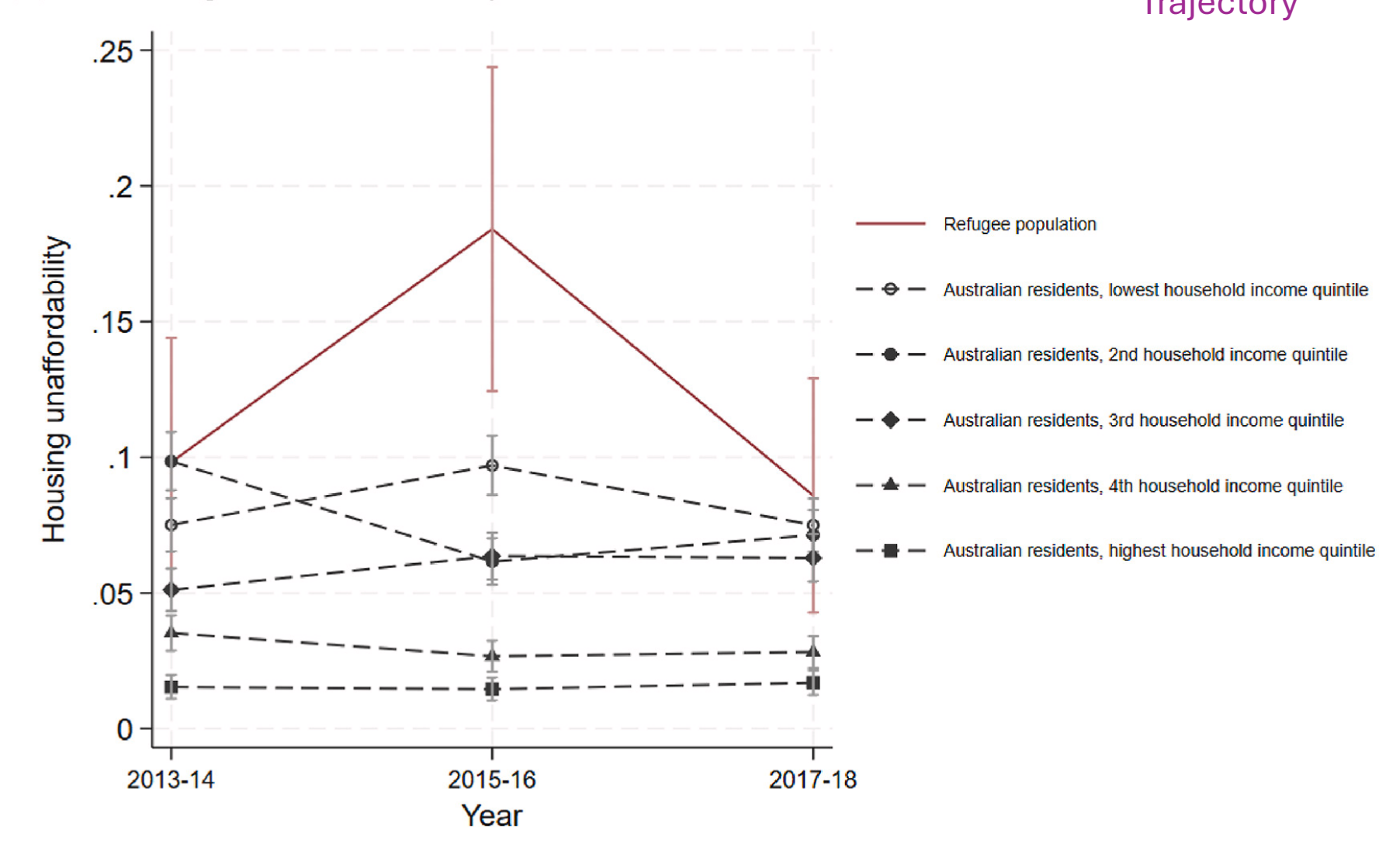
From Australian Housing Conditions Dataset

Refugee populations and housing in Australia

McShane, S., Li, A., Block, K. and Bentley, R., 2025. Housing and wellbeing: Long-term precarious housing trajectories following humanitarian migration and resettlement. *Social science & medicine*, 372, p.117943.

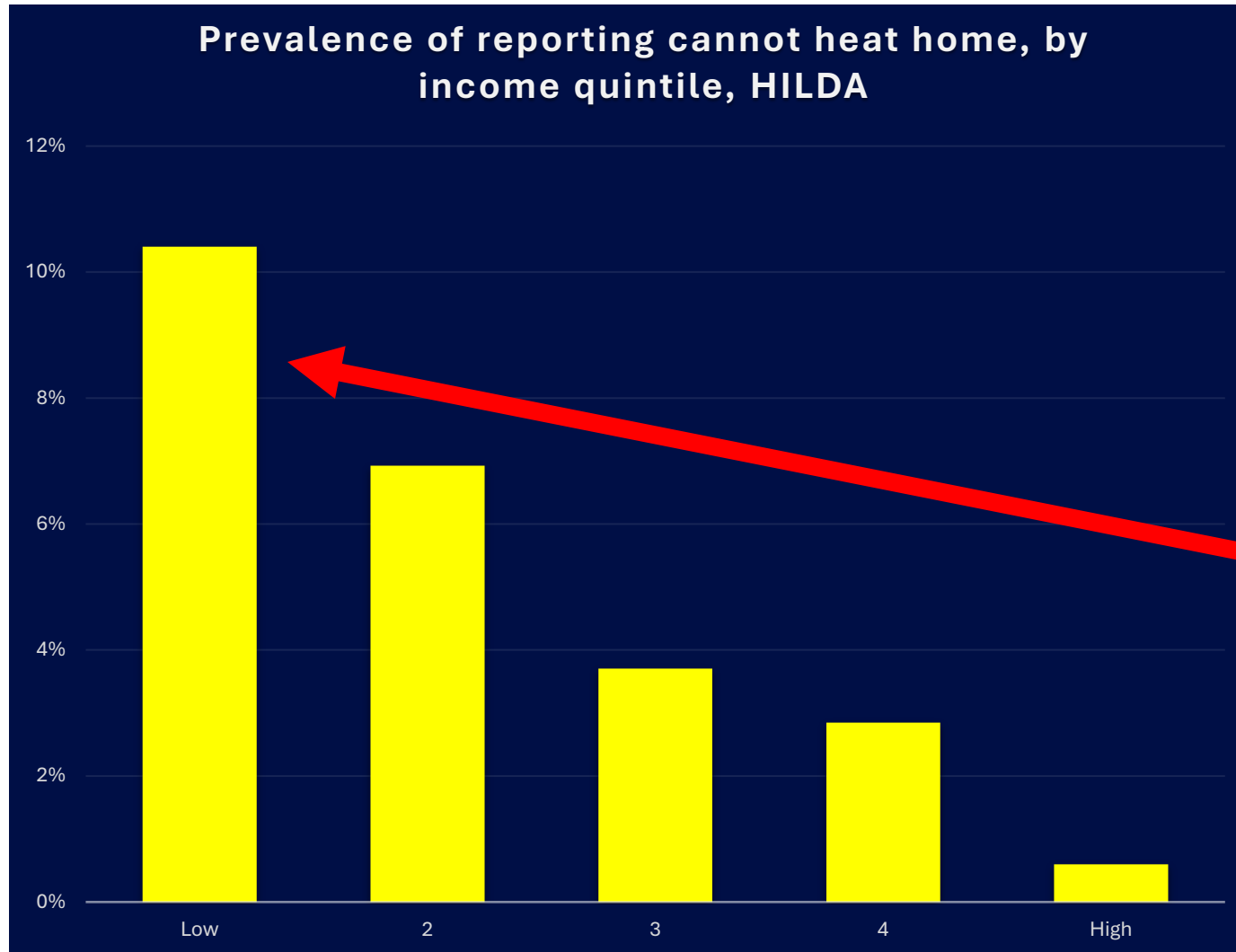


(a) Housing unaffordability



Low-income households

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People with:

- Disabilities
- Carers
- Single parent families
- Recent migrants
- Indigenous Australians





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BAU costs us!

Mould and Damp

This in-home exposure leads to a substantial but unquantified population health burden from:

- Asthma
- Chronic obstructive pulmonary disease
- Infections.



The problem

While we can estimate the scale of the the problem, we do not know the SCALE OF THE CONSEQUENCES in terms of:

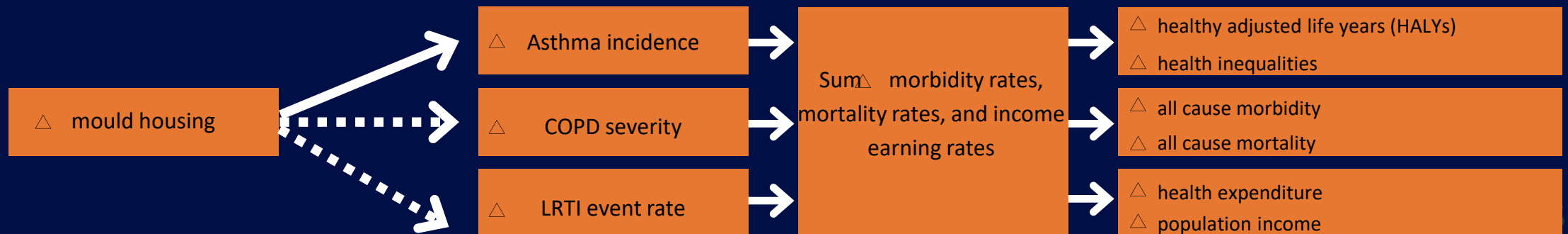
- Total health burden
- Cost to the health care system
- Lost productivity
- Contribution to health inequalities.



Methods (briefly)

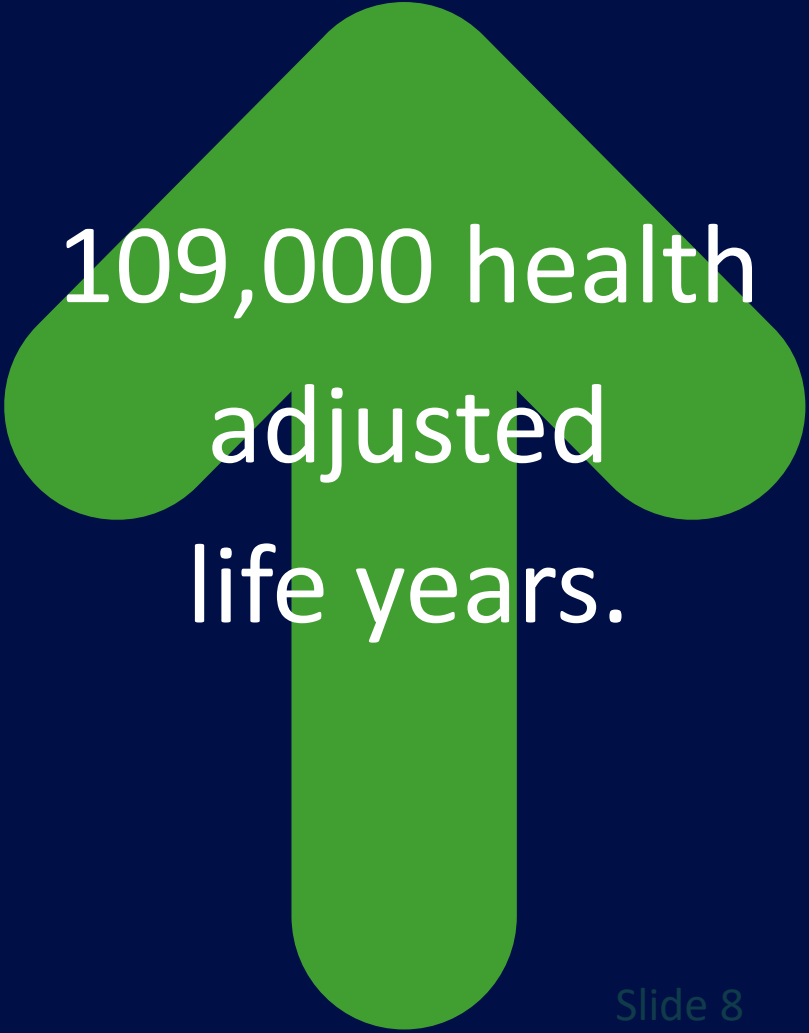
Proportional multistate lifetable models with inputs:

- Prevalence of moderate (16.5%) and severe (11.0%) mould;
- The association of mould to:
 - Asthma incidence (RR 1.48 for moderate and 1.98 for severe);
 - Chronic respiratory disease severity (ratio increase 1.10 and 1.28);
 - Lower respiratory tract infection incidence (RR 1.15 and 1.46).



Findings – health burden

- **Eradication would see 109,000** (95% UI 50,100 to 191,000) **health adjusted life years gained** in the next 20 years.
- This is **two** times higher compared to that achieved from eradicating cold housing in Australia; estimated to be 50,600 HALYs (24,600 to 106,000).
- May be more effective than colorectal cancer screening – at the population level.



109,000 health
adjusted
life years.

Findings – health expenditure

- Save AUD\$2.82 billion (95% UI 1.25 to 4.99) in health care costs over the next 20 years.
- This is equivalent to a 10% increase in current volumetric tax on alcohol.



Findings – household productivity

- Increase household income by AUD\$4.21 billion (95% UI 1.76 to 7.91).



Findings – Equity

- Greater health gains were observed in lower socioeconomic groups.
- Removing mould would generate 1.66 times greater health gain for the lowest SES groups who have highest disease rates.



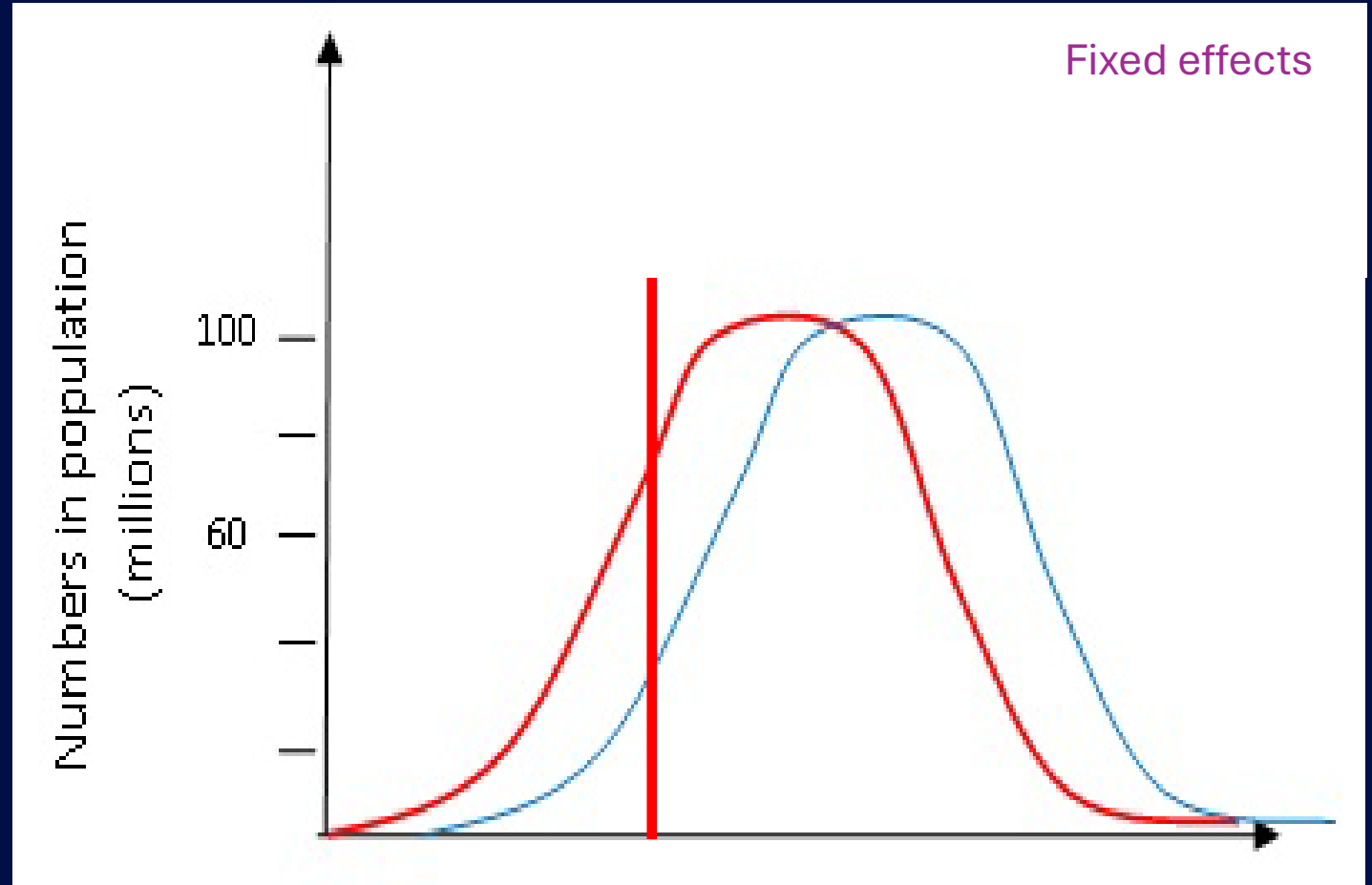
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From evidence to policy insights

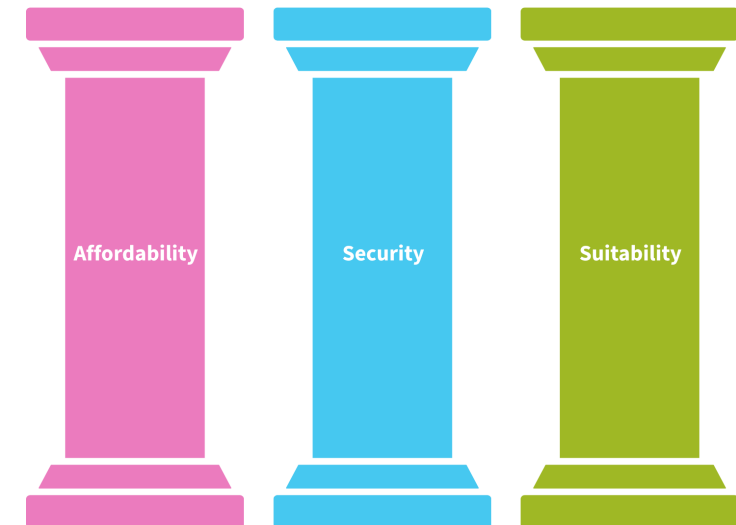
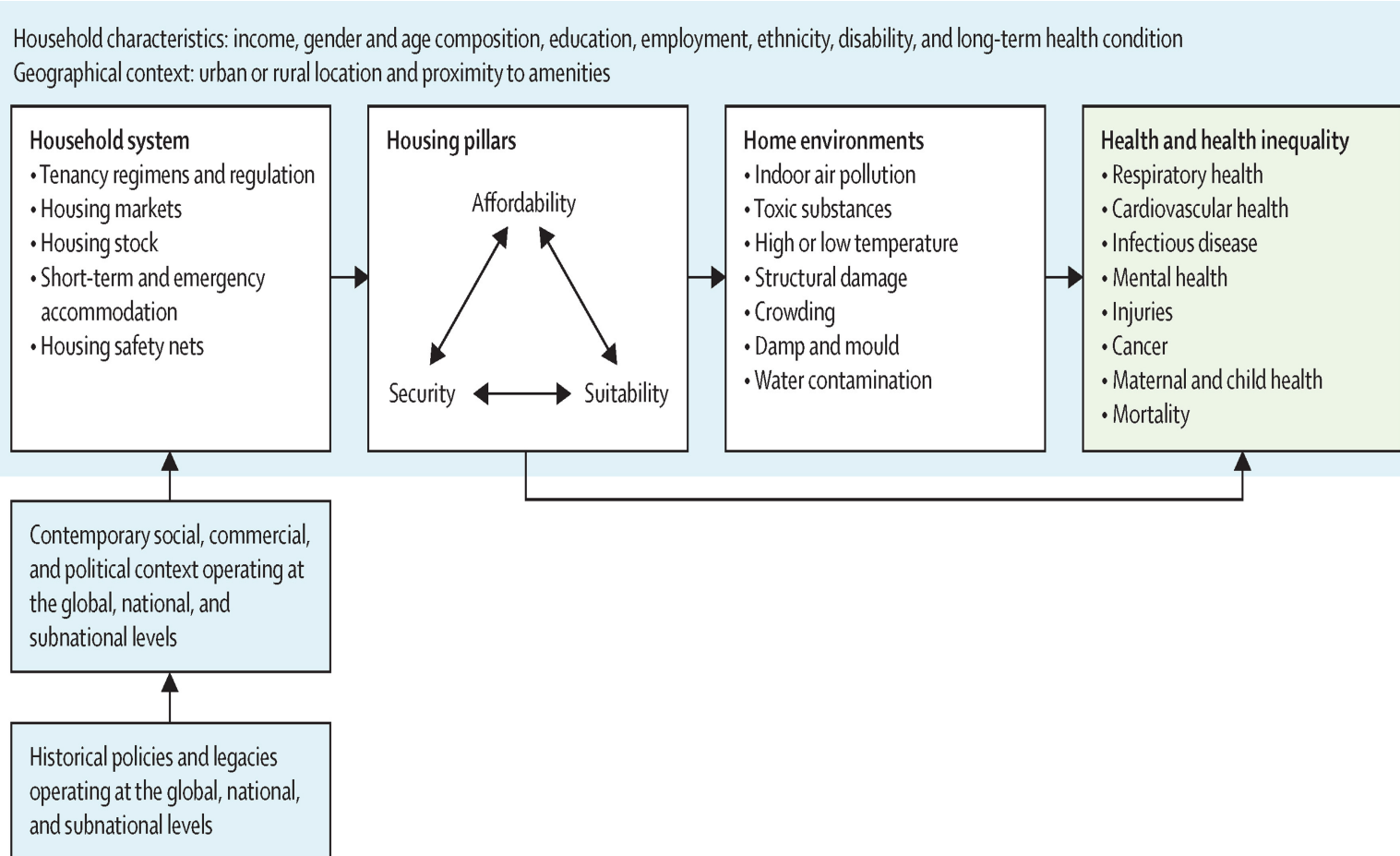
Housing Affordability Stress and mental health

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HAS negatively
affects mental
health - between 1
and 2 points on a
100-point mental
health measure



Housing pillars

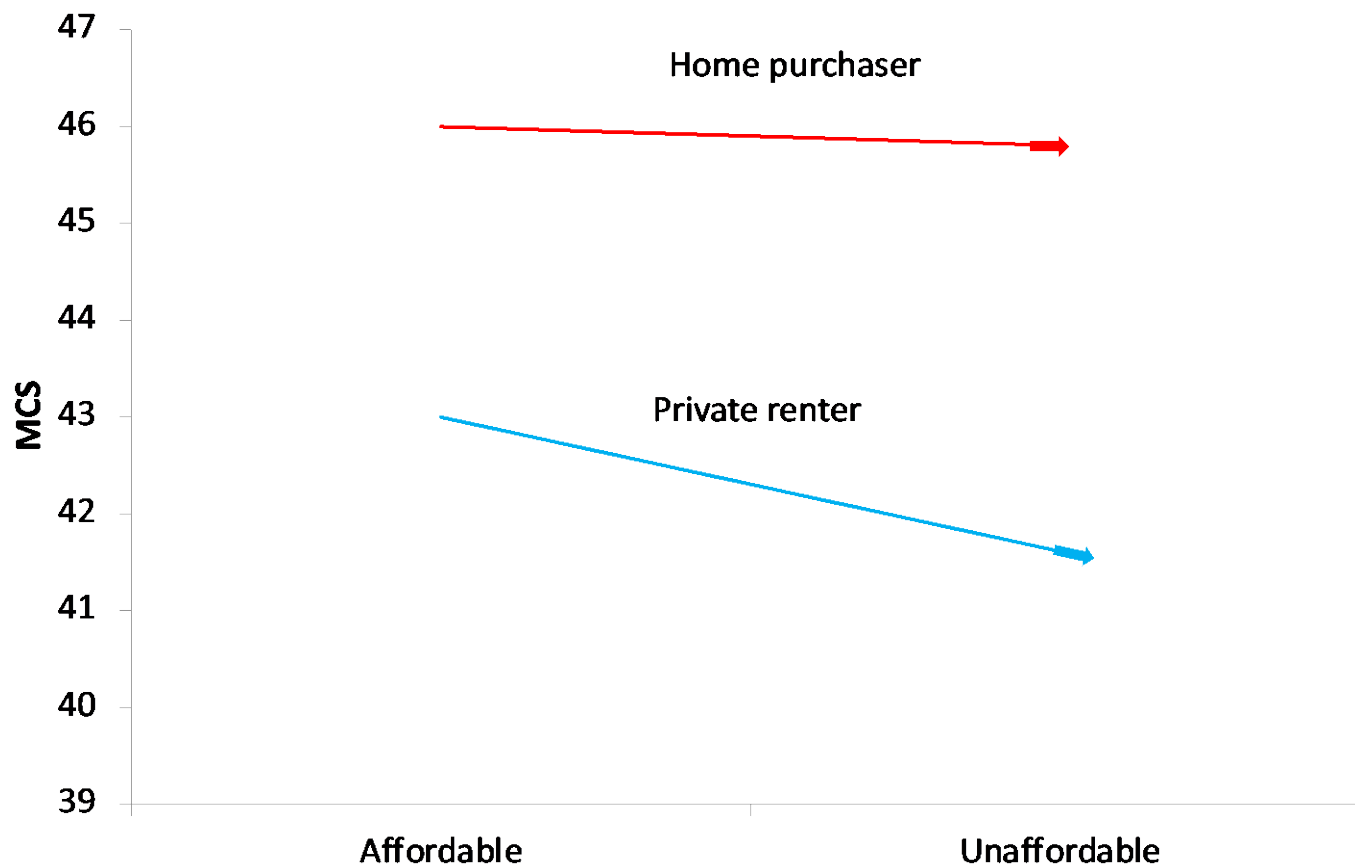


Affordability, tenure and mental health

HILDA data



Fixed effects and interactions



This same relationship was not found in the UK (in one comparison at least)



Fixed effects and interactions

HOUSING STUDIES, 2016
VOL. 31, NO. 2, 208–222
<http://dx.doi.org/10.1080/02673037.2015.1070796>



Housing affordability, tenure and mental health in Australia and the United Kingdom: a comparative panel analysis

Rebecca J. Bentley^a , David Pevalin^b, Emma Baker^{c,1}, Kate Mason^a, Aaron Reeves^d and Andrew Beer^{c,1}

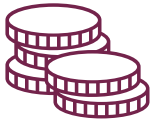
^aCentre for Health Equity, Melbourne School of Population and Global Health, University of Melbourne, Carlton, Australia; ^bUniversity of Essex, Colchester, UK; ^cCentre for Housing, Urban and Regional Planning, School of Social Sciences, The University of Adelaide, Adelaide, Australia; ^dDepartment of Sociology, University of Oxford, Oxford, UK

	<i>Australia</i> (2239 individuals, 8481 observations)			<i>UK</i> (10113 individuals, 46759 observations)		
Tenure type	Mean change in MHI-5 (95%CI)	<i>P</i>	<i>P</i> value for interaction term	Mean change in GHQ (95% CI)	<i>P</i>	<i>P</i> value for interaction term
Home purchasers	0.00 (-0.37, 0.37)	0.991	0.077	0.35 (0.11 – 0.59)	0.004	0.462
Private renters	-0.45 (-0.81, -0.09)	0.014		<u>-0.03 (-0.46, 0.40)</u>	0.888	

Why?



1. UK had more social housing.



2. UK offered more \$\$ in housing assistance benefits to renters



3. Aus population of renters was less stable.

Avg tenure length in Aus is 12 months and in the UK is 2.5 years.

Explanation = UK system (with affordability lever) generated greater stability.

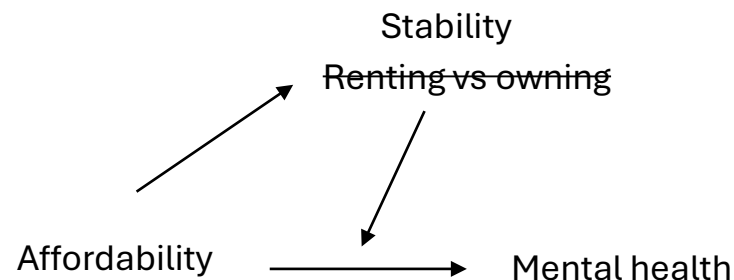


Table 1. Tenure type across households in Australia and the United Kingdom.

Tenure type	Australia 2011/2012 (8 630 428 households), %	UK 2011/2012 (22 040 000 households), %
Outright owner	31	32
Purchasing a home	37	34
Private rental	25	17
Social housing	4	17

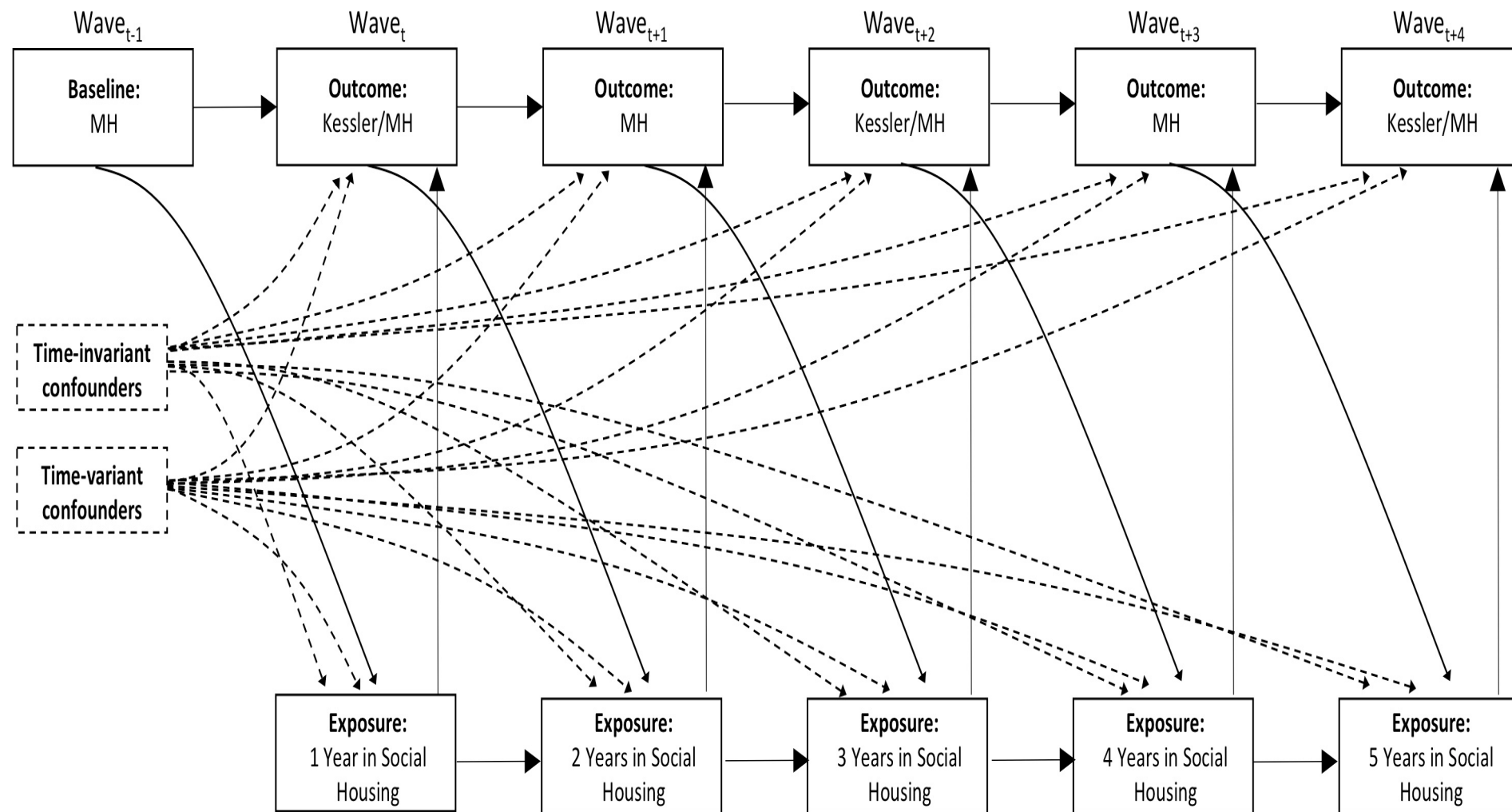
Sources: Australian Bureau of Statistics Cat No. 4130.0 and Office for National Statistics (2012).



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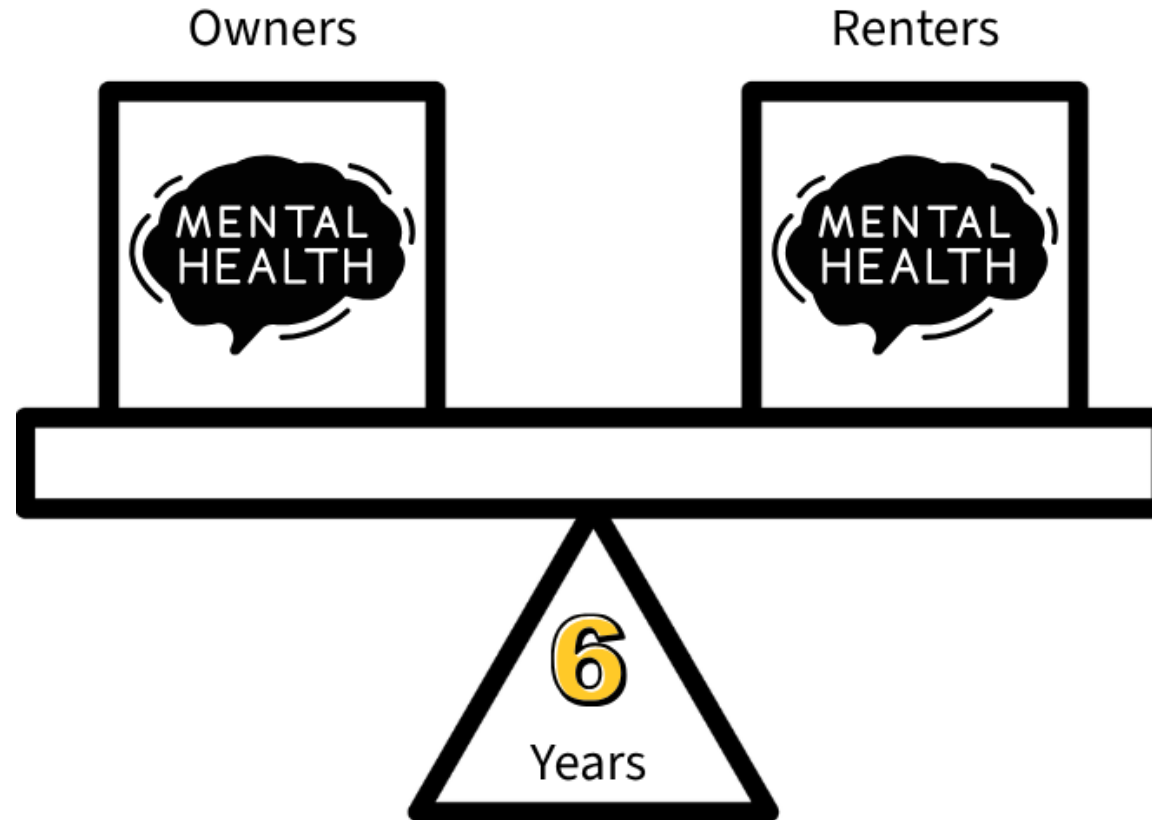
Marginal structural models, machine learning matching methods, sensitivity analyses

HILDA data

Protective effects uncovered in our research

Stability and mental health

- We compared the mental health effect of a cohort of renter matched to homeowners.
- Gold standard adjustment for confounding (including reverse causation) using MSMs and machine learning.



HILDA data

Marginal structural models, machine learning matching methods, sensitivity analyses



Conclusion on security



1. Stable housing is protective of mental health.
2. Stable housing reduces mental health inequities associated with tenure.
3. Confirms that the rental protections determine stability which influences mental health.
4. These protections fall short in Australia in comparison with the UK (at the time).



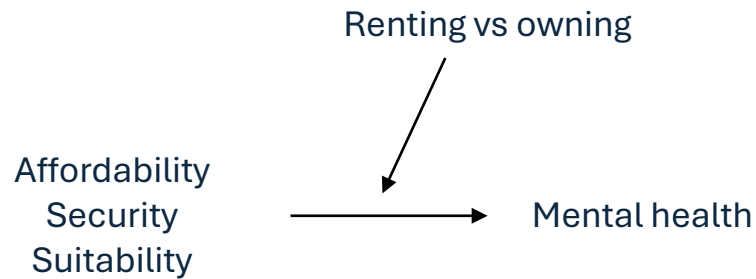
Stability/security in social and private rental housing are protective.

We are not ignoring suitability – it is clear from our research that this matters ++

- Mould and damp
- Indoor temperature
- Noise
- Green and blue space
- Indoor air quality

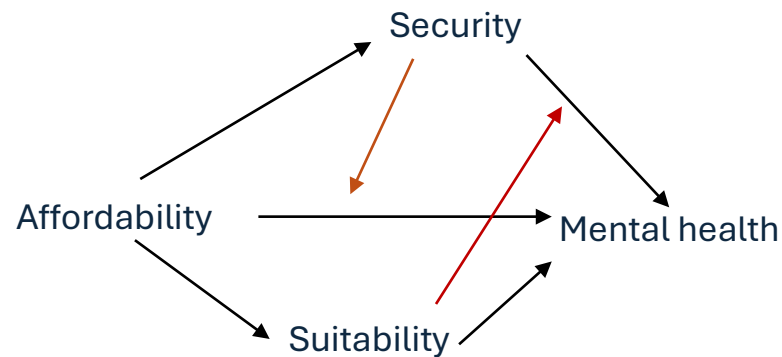
Insights

1



Tenure related policy influences each pillar = system
e.g., build to rent. min standards.

2



We have a system bounded by the pillars
i.e., we cannot account for the health
benefits of security of tenure without
considering affordability or suitability of
housing



**Min standards in rental sector important
public health measures – but also need renter
protections. One without the other is
problematic**