



# When your home stays cold: how energy poverty harms health

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# TAKE LIGHT – NIGERIA ENERGY POVERTY



<https://www.takelightfilm.com/about>

# MEXICO – JAN 2019

The New York Times

## *Death Toll in Mexico Blast Rises to 79; Leader Vows to Intensify Crackdown on Fuel Theft*



The explosion was caused by thieves who punctured a gas pipeline north of Mexico City. President Andrés Manuel López Obrador vowed to crack down on fuel theft, a longstanding problem in the country. Oasa/EPA, via Shutterstock

<https://www.nytimes.com/2019/01/19/world/americas/hidalgo-explosion-mexico-pipeline.html>

# ENERGY POVERTY - SPAIN

## Spain anger over 'energy poverty' deaths

By James Badcock  
Madrid

🕒 20 November 2016

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Passions have been stirred by the death of an 81-year-old woman in a house fire started by candles she was using after her power was cut off

Spain's economy may be recovering, but the recent deaths of a 12-year-old girl and an 81-year-old woman in house fires are reminders of the hardship that millions of households still face in the country's deep-rooted crisis.

<https://www.bbc.com/news/world-europe-38024374>

# ENERGY POVERTY – USA



<https://www.npr.org/2018/09/19/649633468/31-percent-of-u-s-households-have-trouble-paying-energy-bills>

# ENERGY POVERTY – USA

The New York Times

## *New Jersey Woman on Oxygen Dies After Electric Company Shuts Off Her Power*



Linda Daniels died on Thursday after power was shut off at her home in Newark and the electric-powered oxygen tank she used to breathe stopped working.

via Desiree Washington

By Matthew Haag

July 9, 2018



New Jersey officials said on Monday they were investigating why a utility company shut off power last week at the Newark home of a woman in hospice care who then died after her electric-powered oxygen tank stopped operating.

<https://www.nytimes.com/2018/07/09/nyregion/woman-dies-oxygen-tank-electricity.html>



# Emma-Lita Bourne is dead Now will anything change?

A coroner has sparked a political and media storm by saying a cold state house contributed to a toddler's death. But who takes notice of what coroners say? And does anything ever change? By Adam Dudding.



Otago toddler Emma-Lita Bourne, who died last August after being hospitalised with pneumonia. The coroner said cold, damp housing may have contributed to her death.

**A** YOUNG GIRL dies of an unpredictable complication of pneumonia. A coroner reports the usual awful clinical details – "oxygen saturation", "intro-axial haemorrhage", "brain stem death testing" – but something else as well: There are references to the "cold, damp" state house Emma-Lita Bourne was living in when she fell ill in the winter of 2014; to the leak in the ceiling of the South Auckland home; to the heater unused because of unaffordable electricity; to the sibling with rheumatic fever.

And there is this line in the findings: "Whether the cold living conditions of the house became a contributing factor to the circumstances of Emma-Lita's death cannot be excluded."

It is an understated phrase but the reaction was anything but. Since the publication of Coroner Brandt Shortland's report there has been an explosion of news coverage, breast-beating and finger-pointing, and fresh recognition that poverty in New Zealand is a real thing that kills people. Once again a coroner has lit a fuse then quietly stood back.

Telling the public what went wrong and what can be done better is in a coroner's job description, yet they are not always thanked for it.

In 2013, Eric Crampson, a researcher at business thinktank the New Zealand Initiative, blinged a list of recent coronial recommendations, presumably so his readers could sneer at their wackiness ("warning labels on Coke"; "national nuthole safety guidelines"; "hard hats when climbing ladders"; "mandatory hi-vis clothing for cyclists"), then suggested coroners get training in cost-benefit analysis before making silly, expensive suggestions.

Of the 29,000-odd deaths in New Zealand each year, 20 per cent are referred to the coroner.

A proportion of those lead to an inquiry and a subset of those lead

to formal recommendations.

These are not binding, spurious or otherwise, many are ignored. Yet even without enforcement powers, coroners can save lives.

Otago University researcher Jennifer Moore looked at reports for 2007-2012 and found that from a sample of 426 recommendations, 29 per cent were rejected outright, 31 per cent were implemented, and 40 per cent were "supplanted" – that is, action had already been taken. In her study, Moore said coroners should target their recommendations more clearly so they were harder to ignore.

She also said coroners should get better at identifying trends rather than focusing narrowly on individual cases.

Yet she named cleverest lifesavers, including the successful coronial recommendation for the construction of a median barrier on Wellington's notorious Centennial Highway (see sidebar).

Moore looked only at formal

"This pretty little girl who was ill one day and dead the next – that's every parent's nightmare."

Prof Philippe Howden-Chapman

recommendations but cases such as Emma-Lita Bourne's demonstrate the symbiotic relationship between coroner and media, and a coroner's ability to create waves with a few carefully chosen sentences.

It's not news, of course, that poverty is a killer.

As Nelson paediatrician Nick Baker, former chair of the Health Quality and Safety Commission puts it, "growing up in deprivation you're more likely to die", not only because of poor housing but because of access to resources, income, the safety of cars, riskier behaviour and numerous other factors.

Commission figures show that in 2009-2013, death rates in those aged 25 days to 24 years were dramatically skewed by neighbourhood wealth. When split into deciles of deprivation, the death rate of those young people living in the poorest areas was nearly three times greater than that of those in the richest areas.

Somewhat, though, says Otago public health professor Philippe Howden-Chapman, this case has sparked a much bigger reaction than any statistical table could.

That may be because housing – from the Auckland bubble to National's reshaping of state provision – is a hot topic.

It is possibly because of the mana of coroners and the fact that Shortland directly named housing conditions as a "contributing factor". But it is also because

Emma-Lita struck a chord.

"Unless people are empathetic or have got imagination, they can easily partition what other people's lives are like from their own daily experience. But this pretty little girl who was ill one day and dead the next – that's every parent's nightmare, so people find that easier to empathise with. It's a specific, tragic piece of evidence that helps us to see the costs of having really poor-quality housing for low-income households," Howden-Chapman says.

Shortland made it clear those involved – especially the mother and the medical staff – managed Emma-Lita's illness impeccably. "He says: 'I can see no fault here except that this child was in terrible housing'. And that's very unusual," says Howden-Chapman.

She thinks it will be "very interesting" if other coroners mention housing as a "contributory factor" in future reports. A coroner can whisper and trigger an avalanche, or shout at the top of their voice with no effect.

When former chief coroner Neil MacLean retired in February he spoke of how frustrating it was to bang on about the suffocation of babies in their parents' beds or the dangers of quad bikes and see little or no change. Yet coroners are not "toothless tigers". They can still achieve a lot with soft power and "encouraging public discussion is one of the tools in their armoury".

Baker says whether it's huffing or hosing, driveway deaths or cot deaths, coroners have proved "incredibly strong allies in terms of supporting a community to do the right thing by their kids".

He says a coroner can make a recommendation or drop hints – but after that someone else has to take the next steps.

**WARRANTS FOR RENTALS**  
Column: Phil Goff p13

## Coronial hits and misses

Highlighting risks and making recommendations to reduce them are part of a coroner's job, but they don't have enforcement powers. Some findings have a major impact, others sink without trace.

### Huffing

After two Dunedin teenagers ignited a roomful of gas while inhaling LPG in 2012, chief coroner Neil MacLean trawled coronial records and found at least 63 people had died while 'huffing' butane since 2000. Major stores voluntarily restricted sales of butane and there has been a dramatic reduction in deaths since.



### Quad bikes

Coronial recommendation to reduce fatal quad bike accidents have included bans on child riders and compulsory roll-overs, but nothing much changes. In February outgoing chief coroner MacLean bemoaned the lack of action, which he blamed partly on "powerful industry groups".



### Centennial Highway

In 2001 coroner Garry Evans recommended construction of a median barrier on Wellington's Centennial Highway, after eight deaths in a year. A barrier was built in 2004. By 2014 the barrier had been hit



more than 20 times, saving, it's estimated, up to 50 lives.



### Coca-Cola warnings

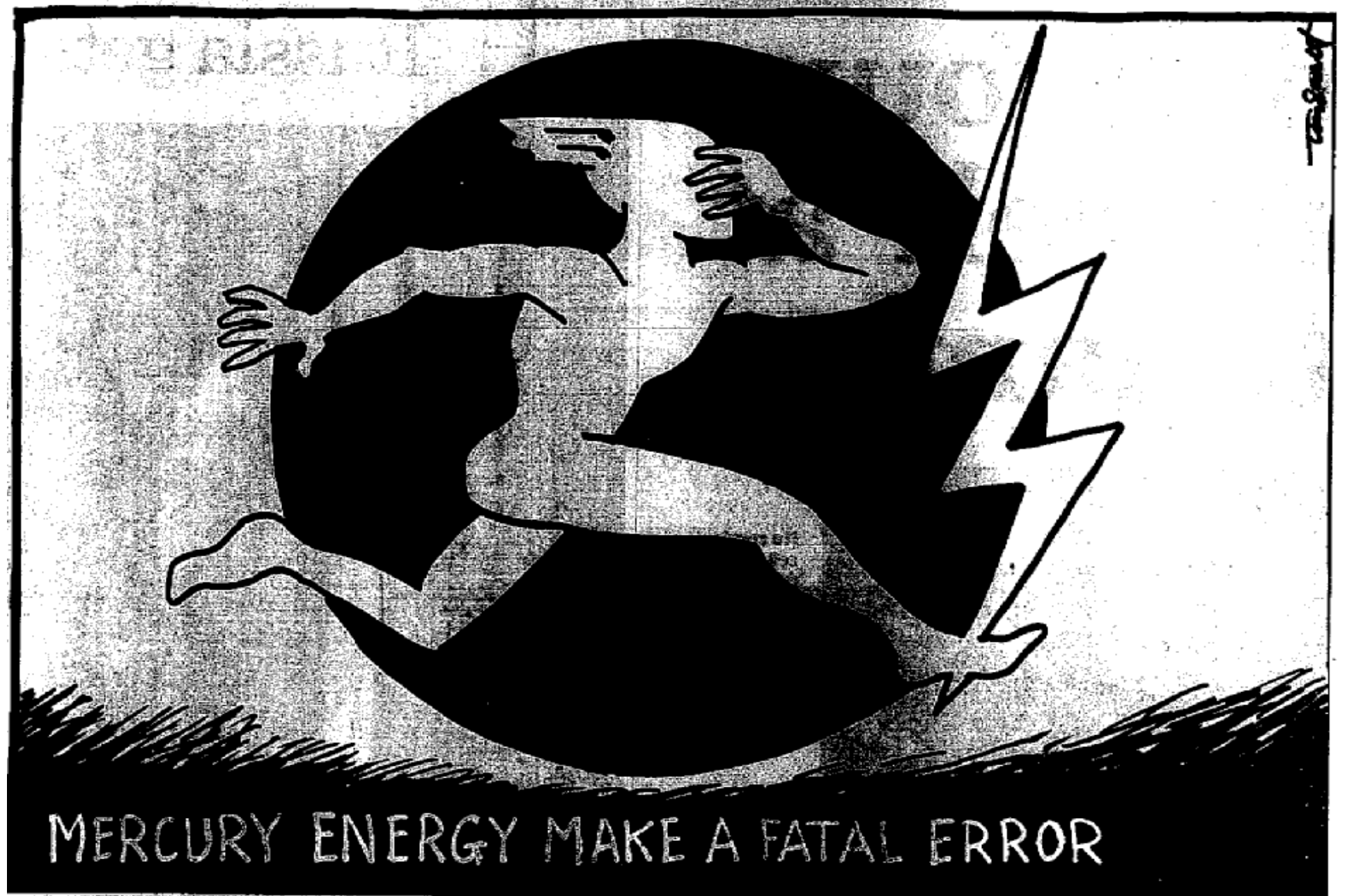
It was arguably New Zealand's most famous death of 2013: An Invercargill woman who drank up to 10 litres of Coca-Cola a day died of a heart condition. The bizarre case was reported worldwide, but coroner's David Cramer's recommendation – tougher label warnings on carbonated beverages, and less caffeine in Coke, appear to have been ignored.



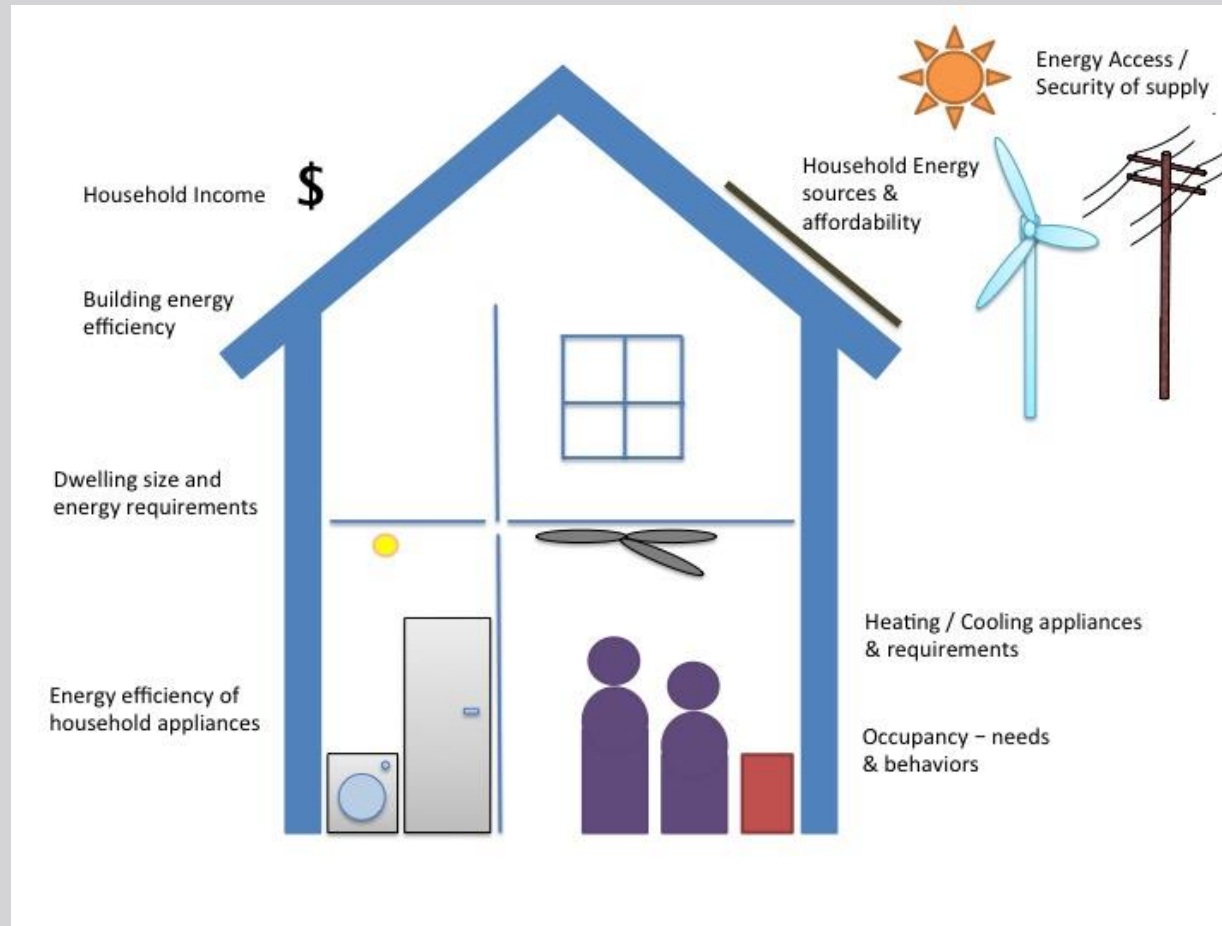


Mercury Energy

Cartoon on  
editorial page  
of main NZ  
newspaper

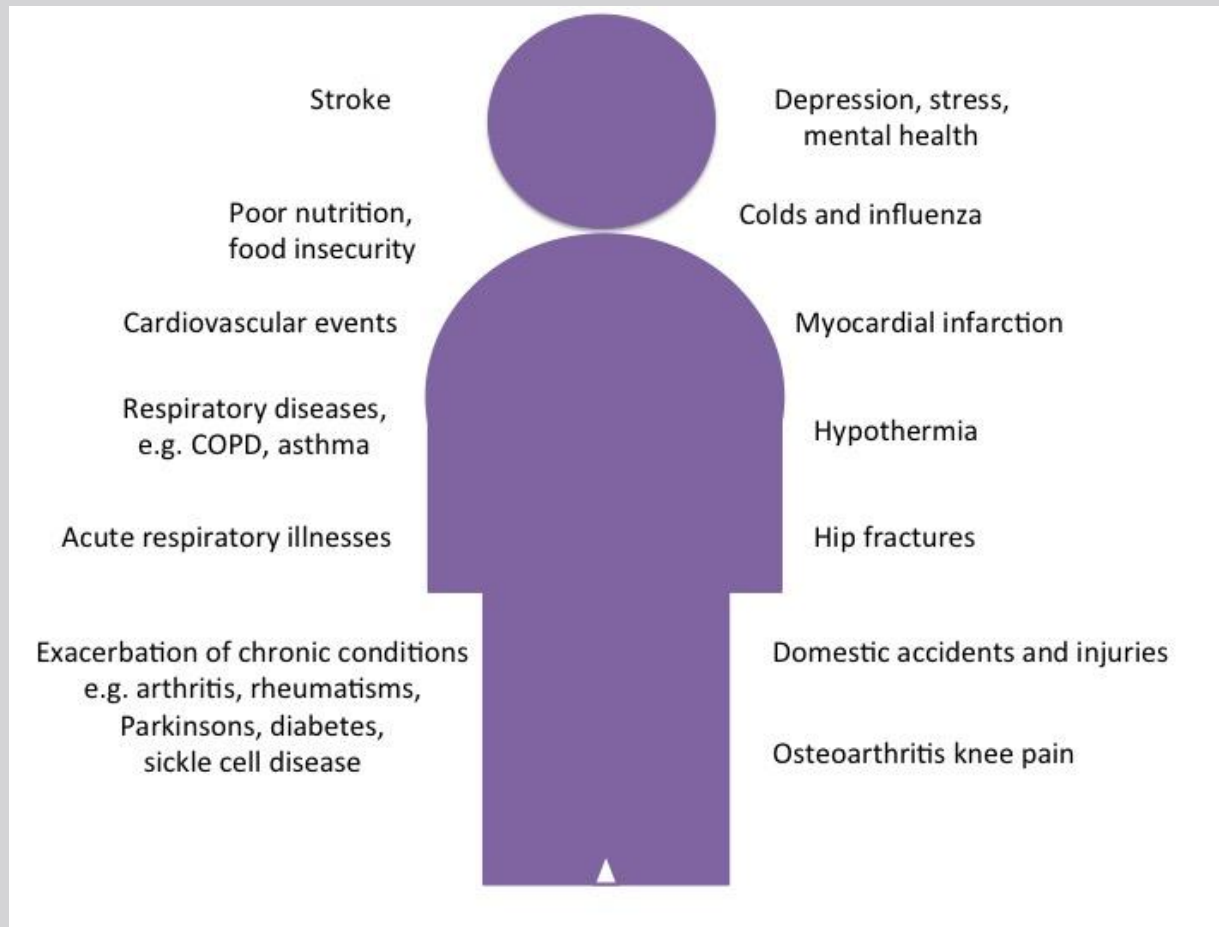


# CAUSES OF ENERGY POVERTY



**O'Sullivan, K., (2019)** Health Impacts of Energy Poverty and Cold Indoor Temperature. In: *Elsevier Encyclopedia of Environmental Health 2<sup>nd</sup> ed.* Jerome Nriagu (Ed).

# HEALTH EFFECTS ENERGY POVERTY: COLD INDOOR TEMPERATURES



O'Sullivan, K., (2019) Health Impacts of Energy Poverty and Cold Indoor Temperature. In: *Elsevier Encyclopedia of Environmental Health 2<sup>nd</sup> ed.* Jerome Nriagu (Ed).

# RESEARCH IDENTIFYING PROBLEM: RCTS

- **25% of NZ households estimated in fuel poverty using above 10% threshold of household income spent on energy**

Howden-Chapman, P., Viggers, H., Chapman, H., O'Sullivan, K., Telfar-Barnard, K., Lloyd, B. (2012) Tackling cold housing and fuel poverty in New Zealand: a review of policies, research and health impacts. *Energy Policy*; 49: 134-142. DOI: 10.1016/j.enpol.2011.09.044.

- **Energy inefficient housing + ineffective heating + inadequate income = fuel poverty**
- **Especially for older people with disabilities, young children, and families – spend more time at home.**
- **Affects respiratory/breathing, heart, circulation, visits to doctor, medicines, sick days.**

# RESEARCH IDENTIFYING PROBLEM

## Community trials

- Housing, **Insulation** & Health study
- Housing, **Heating** & Health study
- Warm Homes for Elderly New Zealanders (WHEZ)  
**winter fuel payment**



# **IMPROVING BUILDINGS, CUTTING CARBON**

**EDITORS**  
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**Philippa Howden-Chapman**

**LINK TO  
SUSTAINABLE  
DEVELOPMENT  
GOALS**

**SDG 3 Good  
health &  
wellbeing**

**SDG 7  
Affordable  
green energy**

**SDG 11  
Sustainable  
cities and  
communities**

**SDG Climate  
action**

# ESTIMATING PREVALENCE, IMPACTS ON RISK GROUPS

- Children **admitted to hospital**, **52%** housing colder than parents prefer, **14% unable to pay electricity on time**, **8%** experienced disconnection for late/non-payment (~4 x national rate)
- Households in Warm Up NZ (insulation programme) **reduced hospitalisation** rates for all children **6%**, children from low-income households **↓ 12%**, **children in private rentals ↓ 19%**.

Kelly, A. et al (2013). Exposure to harmful housing conditions is common in children admitted to Wellington Hospital. *New Zealand Medical Journal*, 126(1387), 108-126.

O'Sullivan, K., Telfar Barnard, L., Viggers, H., & Howden-Chapman, P. (2016). Child and youth fuel poverty: assessing the known and unknown. *People, Place, and Policy*, 10(1), 77-87.  
doi:10.3351/ppp.0010.0001.0006

# STATS NZ UPTAKE OF INDICATORS – GSS 2018

## Feeling the chill



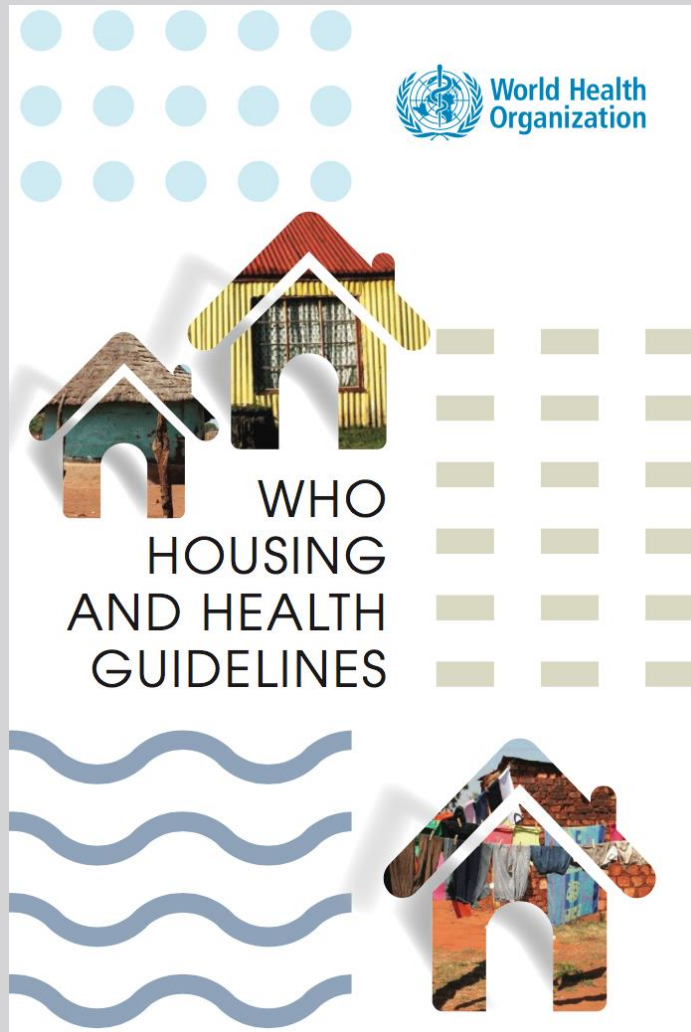
Households in rented accommodation are more likely to live with damp, cold and mould than those living in their own home.

Can you see your breath inside?



**32%** of renters and  
**13%** of owners can


# WHO HHGL 2018



- Published Nov 2018
- <https://www.who.int/sustainable-development/publications/housing-health-guidelines/en/>
- Provide evidence-based recommendations for healthy housing conditions and interventions
- Recommendations on crowding, low and high indoor temperatures, injury hazards, and accessibility
- Summarize WHO GLs on water quality, air quality, neighbourhood noise, asbestos, lead, tobacco smoke, and radon




# LOW INDOOR TEMPERATURE AND INSULATION

Recommendation	Strength of recommendation
 <p>Indoor housing temperatures should be high enough to protect residents from the harmful health effects of cold. For countries with temperate or colder climates, 18 °C has been proposed as a safe and well-balanced indoor temperature to protect the health of general populations during cold seasons.</p>	Strong
<p>In climate zones with a cold season, efficient and safe thermal insulation should be installed in new housing and retrofitted in old housing.</p>	Conditional



# HIGH INDOOR TEMPERATURES

Recommendation	Strength of recommendation
 <p data-bbox="698 753 1488 982">In populations exposed to high ambient temperatures, strategies to protect populations from excess indoor heat should be developed and implemented.</p>	Conditional



# HIGH INDOOR TEMPERATURES



- Do residents living in housing where indoor temperatures are above 24 °C have worse health outcomes than those living in housing with indoor temperatures below 24 °C?
- Focused on:
  - All-cause mortality
  - Heatstroke
  - Hyperthermia
  - Dehydration
  - Hospital admission
- 6 studies with indoor temperature as exposure variable
- None provided direct evidence on the prioritized health outcomes or the minimal risk temperatures for heat-related health effects.
- Conclusion: no firm answer to the question



# HIGH INDOOR TEMPERATURE



- Eight studies investigating indoor heat on health outcomes:
  - sleep disorders (3 studies) evidence of association
  - general health (2 studies)
  - blood pressure (2 studies) some evidence
  - respiratory and cardiovascular disease (2 studies)
  - body temperature (1 study)
  - mental health (1 study)
  - Negative pregnancy outcomes (1 study) some evidence

**MORE RESEARCH NEEDED**

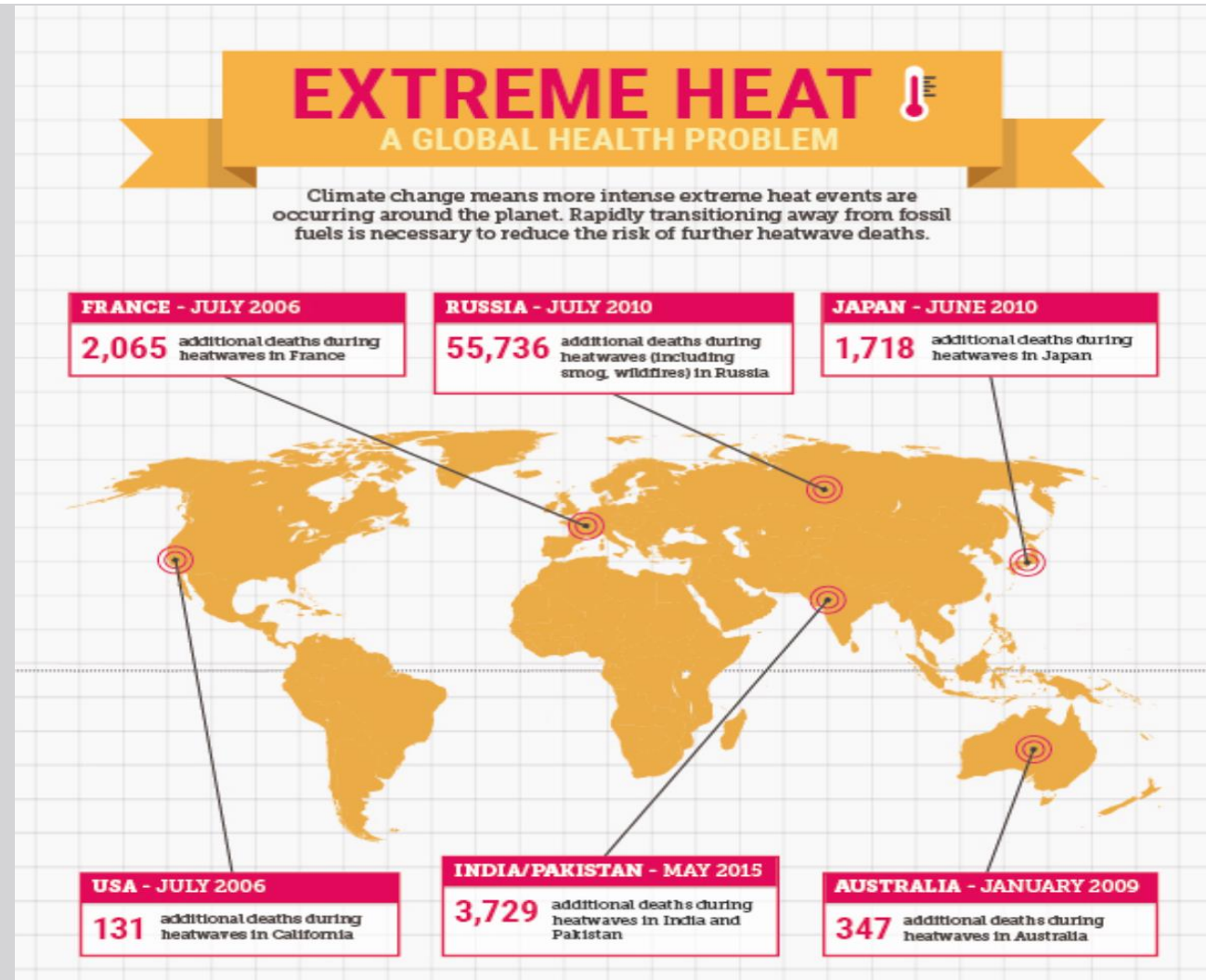


# HIGH INDOOR TEMPERATURES



- HIGH certainty of evidence relating high outdoor temperature to mortality
- MODERATE TO HIGH certainty of evidence that indoor and outdoor temperatures are correlated
- These give support for the recommendation regarding indoor temperatures.

Image: [https://www.climatecouncil.org.au/wp-content/uploads/2018/07/CC\\_HeatHealthReport\\_GlobalHealth.jpg](https://www.climatecouncil.org.au/wp-content/uploads/2018/07/CC_HeatHealthReport_GlobalHealth.jpg)



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