



# Fuel poverty – why we need a personalised approach

**Cold homes have a serious impact on people's health.** They lead to other problems, such as mould and damp, which increase health risks. The NHS spends an estimated £2.5 billion per year on treating illnesses directly linked to cold, damp and dangerous homes.<sup>1</sup> Children, older people, and long-term sick and disabled people are most at risk from the health impacts of cold homes.

**Private renters and people living in social housing are most affected.** One in four households in private rented housing, and nearly one in five in social housing is in fuel poverty.<sup>2</sup> Low incomes, high energy costs and poorly insulated homes all make someone more vulnerable to fuel poverty.

**Working with Coastline Housing, the University of Exeter's Smartline research team surveyed 329 social housing tenants to collect self-reported measures of fuel poverty and health and wellbeing. We also installed smart sensors in 280 of these homes to track temperature and humidity levels. This allowed us to compare and combine self-reported and "revealed" fuel poverty from sensor temperature readings.**

## Key insights from the research:

- Fuel poverty has a significant connection with poor mental health and wellbeing.
- Health conditions affect how people experience the cold. Participants with chronic lung conditions (COPD) were more likely to report being fuel poor, even though their homes were not significantly colder than the average.
- Research participants spent 20 hours a day on average at home during the week or weekend. People who spent more time at home during the week also had colder homes.
- More energy efficient homes were not necessarily warmer. This is relevant because homes with an energy performance rating A-C are excluded from fuel poverty figures – even though occupants could still be living in cold homes.

## Rethinking approaches to fuel poverty

- We need a more flexible approach to identifying households who are vulnerable to cold, to reflect their actual needs for indoor warmth.
- Real-time environmental sensors combined with self-reported measures could help public health teams and social landlords target support by identifying 'hidden' fuel poverty.
- Special attention should be paid to tenants with disabilities and chronic diseases since they are more vulnerable to fuel poverty and health issues.
- Public health measures should take a holistic 'whole house' approach, considering the impact of poor mobility and supporting fuel poor households to be more physically active.
- Smartline has shown that there is potential to upscale the use of sensor data to identify and target support for more vulnerable people.

Contact: [Smartline@exeter.ac.uk](mailto:Smartline@exeter.ac.uk)

<sup>1</sup> Local Government Association (2019): [The cost of unhealthy housing to the NHS – House of Commons debate briefing](#)

<sup>2</sup> Department for Business, Energy & Industrial Strategy (2022): [Annual Fuel Poverty Statistics in England, 2022](#)