Case Study: Warm Homes Programme Evaluation

Tackling fuel poverty to improve health

The Bedford Borough place partnership received funding from the Bedfordshire, Luton and Milton Keynes Integrated Care System to establish a population health management approach to improve health and reduce health inequalities. They chose tackling fuel poverty as their priority area, targeting residents living in areas of high deprivation and fuel poverty/fuel stress who had chronic health conditions which could be exacerbated by living in a cold and/or damp home.

This Warm Homes programme offered eligible residents improvements which could make their homes warmer and/or less damp. The main improvements offered were the installation of replacement gas boilers, loft insulation and/or cavity wall insulation. The National Energy Foundation (NEF) was commissioned to deliver the programme which ran between December 2022 and July 2023.

Solutions for Public Health, a public health team within the CSU's Health & Care Transformation consultancy arm, were commissioned by Bedford Borough Council to conduct the evaluation. Analytical support was provided by the CSU's Business Intelligence (BI) Team.

The challenge

The Warm Homes programme was implemented against a backdrop of concerns about rapidly rising fuel costs, the cost of living generally and a particularly cold winter.

Living in a cold home can negatively affect both physical and mental health and people with existing respiratory problems such as asthma, circulatory problems, diabetes and arthritis are especially vulnerable. A cold home can also raise blood pressure increasing the risk of cardiovascular diseases such as strokes and heart attacks. Children living in cold homes are at increased risk of respiratory problems.

An additional intended benefit of the programme was to reduce carbon emissions, to help the Council meet its targets towards addressing climate change.

Our approach

Bedford Borough Council worked with the CSU's BI Team to identify patients with specified health conditions living in an area with high levels of deprivation and fuel poverty. These patients were flagged on local GP systems and sent letters on behalf of the GP practice inviting them to participate in the Warm Homes programme. The programme was also promoted through partner organisations who could signpost people to self-refer to the programme.

The initial mixed-methods evaluation was produced in September 2023 and included:

- Reviews of wider issues affecting householders' ability to keep their homes warm and dry such as the increasing cost of living, rising energy costs, weather trends and national and local support available to householders.
- Analyses of household and programme activity data, including feedback provided by programme recipients.
- Analyses of health outcomes data (numbers of GP appointments, A&E attendances and inpatient admissions) for three cohorts: those invited to participate in the programme who did not receive an installation; those who received installations as part of the programme, and a control group in a neighbouring local authority.

One of the recommendations of the initial evaluation was to conduct further analysis of health outcomes data when participants had

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benefited from the installations delivered over a full winter period. In the Autumn of 2024 we repeated the analysis of health outcomes using data from July 2021 to June 2024, with the 'treatment period' being July 2023 to June 2024.

This further analysis used Difference-in-Differences regression modelling involving a counterfactual world in which the 'treated' patients did not receive installations based on trends and characteristics of both the treated and the control group. We then compared the actual figures for installation recipients to the hypothetical situation.

Outcomes

1,635 people were invited to participate via their GP surgery. 112 people contacted the programme to find out more and an additional 7 people came forward after learning about the programme through wider communications or partner organisations. After assessment of their eligibility and requirements, 53 people received an installation.

In the initial evaluation in September 2023, of people who had received an installation:

- 81% reported a positive change in their rating with regards to the warmth of their home.
- The proportion of people who felt warm or very warm rose from 26% to 70%.
- 45% showed a positive change with regards to how worried they felt about paying their energy bills
- 54% believed that their home has less of a negative impact on their health after receiving an installation.

Quotes about the positive impact of the programme were provided by participants:

"My home gets warm quicker and says warm!"

"Installation has helped with cold effecting health less"

"Better than it was. My son (who has chronic lung disease) is warmer"

"I was stunned to get the letter and very pleased that [the programme] took this on for people like me to stay warm while keeping my bills down"

The overall average cost of the programme per household was £2,514. The mean lifetime carbon saving for households who received an installation was approximately 14,000 kg CO2 (based on estimated lifetime Carbon savings of each installation).

The further analysis in Autumn 2024 found that:

- Rates of A&E attendances and hospital admissions were similar across the programme and control cohorts. However, at this level of granularity, the majority of patients have no contact with NHS hospitals
- There was a material decrease in primary care activity in January-March 2024 for patients who received an installation, falling by 1.2 appointments per patient
- Given an average number of 4 appointments per quarter, this decrease is also practically significant from the patients' perspective.

There were a number of important caveats to the further analysis findings which were outlined in the reports including, the small number of installation recipients and additional actions that people may have taken to keep their homes warm or look after their health.

Next steps

The work has been presented in a number of forums, including the PHM National Delivery Forum and the BLMK PHM Collaborative, and further opportunities to share learning are being explored.

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