THE SCOTTISH
**FUEL POVERTY**
ADVISORY PANEL



# Fuel poverty and public health: case studies

August 2026

The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Fuel Poverty Advisory Panel.

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# Key findings

This report provides 17 case studies of approaches which target both fuel poverty and health. They are grouped into three themes: social prescribing; multi-agency collaboration, and effective use of data. **The following key findings cut across all themes:**

- There is consistent evidence of cases having positive impacts on wellbeing, comfort, and wider determinants of health, but robust evidence on clinical outcomes is more limited.

- Strong cross-sector collaboration (health, housing, energy advice and other third sector) is vital for all approaches.

- Effective interventions rely on integration into existing systems (especially NHS pathways and local partnerships) rather than operating as standalone or external programmes. This is because the NHS can be a hard organisation to access from the outside, but also because it is a trusted organisation which is likely to encourage engagement.

- In a similar vein, successful interventions are often those which align with existing healthcare interactions (e.g. GP visits, vaccination clinics, hospital admissions) rather than requiring separate engagements.

- While most of the existing evidence base focuses on adults, the health case for targeting children is strong and this evidence gap itself is a reason for action rather than inaction.

- Several of these projects are working with patient groups once they already have a condition, rather than being truly preventative. In the examples of the Alder Hey and Royal London Clean Air Clinics, by the time children reach services like these, housing-related harms have often already become severe enough to contribute to recurrent wheeze, difficult asthma, repeated respiratory infections, emergency attendances or ongoing specialist follow-up. These clinics are doing important and innovative work, but they are downstream of problems that should be preventable much earlier. There may be important opportunities earlier in childhood, particularly through health visitors, primary care, maternity services and early years pathways, to identify families living in cold, damp or mould-affected homes before respiratory morbidity becomes entrenched.

- Holistic, person-centred approaches are consistently emphasised across cases.

- Barriers to access and uptake persist, even where services are available. Several case studies noted low uptake rates and difficulties identifying eligible households.

- The landscape is characterised by small-scale pilot projects, but it appears more challenging for projects to secure long term funding to support scaling. This finding is particularly important because several evaluations highlight that short

project timelines limit the ability to observe changes in long-term health conditions.

- Data availability and linkage is a central enabler of targeting, delivery and evaluation, but is constrained by access barriers, governance issues and system pressures within the NHS.

- Evaluation capacity is generally limited which impacts the ability to demonstrate impact rigorously and support scaling and policy adoption.

The following key findings are theme specific:

**Social prescribing**

- Evidence of health impact is stronger for larger and better-evaluated pilots.

- Effective use of data is essential to identify eligible populations and support scaling.

- Effective collaboration between health professionals and those specialising in fuel poverty/energy advice is vital for the success of any social prescribing project.

- Sustainable funding is needed to allow for social prescribing projects to continue to run and innovate.

**Multi-agency collaboration**

- When establishing projects, it is important to work with pre-existing organisations (private, public, and third sector) and community networks.

- Partnership interventions often have a positive impact on the wider determinants of health, including reducing stress and isolation.

- Consideration needs to be given to capacity and budget constraints of partners, including local authorities, GPs and other health services, and the third sector.

**Effective use of data**

- There is clear potential for innovative analytics and dashboards to support population health management and intervention design.

- Toolkits and shared methodologies can support replication across regions.

- Where direct measures are unavailable, consideration should be given to what data proxies are appropriate for identifying fuel poverty risk.

# Summary of fuel poverty and health case studies

Evidence strength was assessed using the following criteria:

- Strong: robust evaluation, large samples.
- Moderate: smaller scale but still structured evaluation.
- Limited: descriptive findings, small pilots, weak or partial evaluation.
- None: no evaluation currently available.

| Case study | Theme | Location | Target group | What is delivered | Strength of evidence |
|---|---|---|---|---|---|
| 1. Warm Home Prescription | Social prescribing | England and Scotland (multiple sites) | Patients with health conditions worsened by cold homes who are unable to heat their homes to safe temperatures | Energy bill credits and home upgrades delivered via NHS referral | Strong |
| 2. Gentoo Boiler on Prescription | Social prescribing | Sunderland | COPD patients in inefficient homes | Heating and insulation upgrades | Limited |

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|---|---|---|---|---|---|
| 3. Gluasad Còmhla (Moving Together) | Social prescribing | Outer Hebrides | People with long-term health conditions whose health was compromised by living in a cold or hard to heat home | Holistic energy, financial, and home support | Moderate |
| 4. Warm Homes Healthy Futures | Multi-agency | GB wide | People with health conditions affected by cold | NEA coordinated network facilitating advice, safety checks, funding, and training | Limited |
| 5. Warmer Homes Advice and Money (WHAM) | Multi-agency | Bristol, North Somerset, Bath and Northeast Somerset | Low income households, also via hospitals with a focus on combatting damp and mould in people's homes | Energy, financial, and repair support | Limited |
| 6. Home Energy Scotland vaccination drop ins | Multi-agency | Scotland (Lothians, Borders, Fife) | Vaccination clinic attendees (usually older or vulnerable) | Energy advice and referrals | None |
| 7. Sickle Cell Support schemes | Multi-agency | London | People with sickle cell disease | Grants and tailored support | None |
| 8. Clean Air Clinic | Multi-agency | Liverpool | Children with respiratory illness suspected to be linked to environmental exposures | Clinical and environmental assessments | Moderate |

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|---|---|---|---|---|---|
| 9. Children's Environmental Assessment Service | Multi-agency | East London | Children with asthma risk | Monitoring and personalised environmental assessments | Moderate |
| 10. Energycarer Service | Multi-agency | Scotland | Vulnerable households | Intensive advice and hands on support | Limited |
| 11. Warm Banks | Multi-agency | South Tyneside | Residents unable to heat homes | Warm spaces and social support | Moderate |
| 12. Healthy Homes Programme | Multi-agency | Hastings and Rother | Fuel poor households | Heating and insulation installations | Strong |
| 13. Keep Warm Keep Well | Multi-agency | Staffordshire | Vulnerable NHS patients | Data driven referrals and energy support | Moderate |
| 14. SHINE Seasonal Health Intervention Network | Multi-agency | London | Low income and vulnerable residents | Holistic energy and health support | Limited |
| 15. Cheshire and Merseyside project | Effective use of data | Cheshire and Merseyside | High risk adults and children | Linked data targeting and tailored interventions | Moderate |
| 16. UrbanTide | Effective use of data | Sunderland | At risk households | Data and artificial intelligence tool for targeting | None |
| 17. Warm Homes Bedford | Effective use of data | Bedford | Residents living in areas of high deprivation and fuel poverty with health conditions made worse by living in a cold/damp home | Energy efficiency installations | Moderate |

# Introduction

As a part of their 2025/26 and 2026/27 workplans, the Scottish Fuel Poverty Advisory Panel is focusing on fuel poverty and health. It has previously engaged with Energy Systems Catapult on their Warm Home Prescription (WHP) Trial, an intervention designed for people who struggle to afford energy and have severe health conditions made worse by the cold. It enables them to stay warm and well while reducing the energy consumption and carbon emissions of their home. Building on this engagement, the Panel was keen to explore further case studies of approaches which focus on both health and fuel poverty.

In order to be considered for inclusion case studies needed to target both health and fuel poverty directly. As such, an analysis of a fuel poverty intervention which has some health benefits but doesn't specifically target recipients on the grounds of health would not be included. Case studies are from the last 10-15 years and are UK focused. Cases were identified via literature searching on the Scottish Government's KandE database, Google and Google Scholar, as well through discussions with key stakeholders (Energy Catapult, Public Health Scotland, Health Innovation North West Coast). A particularly helpful source was a catalogue of health-related fuel poverty schemes prepared in 2015 by National Energy Action for the then Department of Energy and Climate Change[1]. While this is now somewhat dated and did not cover Scotland, it proved a useful starting point.

Given the nature of this exercise and the location of cases as largely within the NHS, local authorities, and the charity sector with minimal published outputs, it is important to recognise that this is not intended to be an exhaustive list of all relevant projects and it is highly likely that some projects will have been missed. Furthermore, caution should be employed when comparing case studies. This is because they target based on the different criteria, with some cases focused on specific health conditions (COPD, sickle cell disease), while other focus on general long term health conditions. Some cases are longer and more detailed than others, this is driven by the amount of publicly available detail and evidence for each case and is not intended to imply the relative importance of cases.

It should be noted that in 2021, NHS England was restructured as a single unified national body, replacing fragmented local commissioning with around 42 Integrated Care Systems. Furthermore, a number of case studies refer to Clinical Commissioning Groups (CCGs). In 2022 these were replaced by Integrated Care Boards (ICBs).

While many of the case studies included in this report utilise energy efficiency measures as a way to mitigate and prevent fuel poverty related health problems, it's important to note that the interaction between warmth, ventilation, damp, and indoor air quality is complex. As such, retrofit does not always result in improved health. The Scottish Fuel Poverty Advisory Panel has also published research looking at the policy overlaps between fuel poverty and health policy in Scotland, and this report summarises the complexity around energy efficiency measures and health.

The 17 case studies presented in this report are grouped by theme: social prescribing, multi-agency collaboration, and effective use of data. Where case studies are categorised under one theme, this does not necessarily mean that they

don’t span the other themes, demonstrating multiple strengths. For example, the Warm Home Prescription is categorised under social prescribing, but it is also an example of multi-agency collaboration and effective use of data.

In analysing case studies, the report aims to provide a summary of organisations involved, project duration and location, a high level overview of the project and who its beneficiaries are. Where evaluation and other evidence is available this is incorporated, but it should be noted that the strength of evidence varies. In several cases there is minimal evaluation available, with existing evidence often being fairly descriptive in character. This is because in most cases these are small pilot projects, without the means of carrying out robust evaluation. In other cases, projects are ongoing and evaluation is not yet complete. There are, nonetheless, useful learnings which can be drawn from these. Each section begins with a summary of key findings related to each theme.

# Theme 1: Social prescribing

**Key findings**

- There have been several recent pilot projects which utilise social prescribing to provide fuel poor households with energy credit and/or home upgrades/efficiency measures.

- Evidence of impact on health, in particular, has varied depending on the pilot, but the biggest project, the Warm Home Prescription (WHP), found a positive (self-reported) impact on physical and mental health.

- In order to roll out social prescribing as an approach to fuel poverty and its associated health challenges, effective use of data is vital. The WHP Taskforce highlighted that NHS boards should assess the data that they have available to identify how many people in their area have a health condition made worse by living in a cold home and publish these figures. This focus on data was shared by the Moving Together project evaluators.

- Effective collaboration between health professionals and those specialising in fuel poverty/energy advice is vital for the success of any social prescribing.

- Sustainable funding is needed to allow for social prescribing projects to continue to run and innovate.

## Case study 1: Warm Home Prescription (WHP)

**Key details:** The Warm Home Prescription programme has so far supported over 800 vulnerable households in its main 2022–23 trial, with subsequent pilots and expansion phases aiming to reach several thousand more.

**Organisation(s):** Energy Systems Catapult (all iterations); NHS Gloucestershire Clinical Commissioning Group (CCG) (2021-2022); NHS partners in England and Scotland – Aberdeen/Aberdeenshire, Middlesborough, Gloucestershire, London (2022-2023); NHS Greater Manchester; Severn Wye Energy Agency (2021-2022); Changeworks (2022-2024); NEA; Scottish Power (2024-2026); SGN (2024-2026)

**Location(s):** Gloucestershire, Teesside/Middlesbrough, London, Aberdeen/Aberdeenshire

**Duration:** 2021 – present

**Who it supports**: Warm Home Prescription is a service helping people who struggle to afford energy and have severe health conditions made worse by the cold. The service allows them to stay warm and well at home, and out of hospital in winter whilst reducing the energy consumption and carbon emissions of their home.

**What is delivered:** The service works to deliver rapid, practical help:

- NHS teams (including social prescribers and complex care teams linked to GP surgeries) identify eligible patients.

- Eligible patients are those whose health is made worse by living in a cold home, particularly those with respiratory or cardiovascular conditions, or other long-term conditions where cold increases the risk of deterioration or hospitalisation. They also must be unable to heat their homes to safe temperatures due to low income or financial insecurity, high energy costs or energy inefficient housing.
- Patients are contacted by the NHS and offered a “warm home prescription” to be delivered by local energy advisors – who credit their energy account.
- Patients can immediately start heating their home to a healthy temperature.
- Further home energy upgrades are arranged where possible.

**Evaluation and evidence:**
In September 2023, Energy Systems Catapult published the results of an evaluation [2] focused on the impact of the 2022/23 trial on recipients’ health and wellbeing, as well as their attitudes to heat. The research included qualitative interviews (n=30) and two postal/online surveys (n=496, n=513) with WHP recipients. Delivery staff were also invited to take part in an online survey (n=30) and interviews (n=4).

The evaluation found that, overall, WHP had a positive impact on recipients’ reported mental and physical health, as well as their willingness to consider home retrofit measures. 79% and 70% of recipients reported that WHP had a positive effect on their physical and mental health respectively. 8 in 10 (81%) recipients reported heating their homes to a higher temperature than in the previous winter, with most recipients heating their home to healthy temperatures throughout winter.

In September 2023, the Centre for Regional Economic and Social Research (CRESR) at Sheffield Hallam University published an Impact and Value for Money assessment of the WHP project.[3] To support the evaluation recipients were invited to take part in two surveys. The first was at the time when they first received a WHP and the second was at the end of winter 2022/23. In total 496 responses were received to the first ‘baseline’ survey and 513 patients completed the second ‘follow-up’ survey. In total 340 WHP patients completed both a baseline and follow-up survey. In addition, two temperature loggers were sent to all patients who received a WHP to assess whether they heated their home to a recommended temperature. In total 815 patients were sent two loggers and were asked to position one of the loggers in their living room and the other in their bedroom. By the end of the project 628 patients sent back the bedroom logger (giving a response rate of 77%) and 643 patients sent back the living room logger (giving a response rate of 79%).
The total estimated direct operating cost of the WHP project was just under £825,000 (excluding VAT). Energy bill payments for patients who received a prescription comprised the largest cost category – 70% of expenditure (£573,700).

A ’wellbeing adjusted life years’ (WELLBY) approach was used to assess the value of benefits of WHP to the patients themselves. A WELLBY is equivalent to one person experiencing a one point improvement on a ten point wellbeing scale for one year. Patients on average experienced a 1.4 WELLBY increase over the winter period. Across all 823 patients this means the WHP project supported 1186 additional WELLBYs. The average expected social value of the increase in WELLBY is £5,100 per WHP patient. Using this approach, therefore, the 1186 additional

WELLBYs supported by the WHP project produced just over £4.173 million in value. Comparing this monetised societal benefit to the estimated cost of the WHP project suggests that for every £1 of expenditure, WHP supported £5.1 of wellbeing social value to patients.

CRESR recommended that further testing and evaluation of the WHP project is needed to validate these findings in other contexts and to consider the extended (i.e. receiving a WHP over multiple winters) and longer-term impacts of a WHP, particularly on health care demand where the evidence is currently weakest.

Following on from the winter 2022/23 trial, in July 2023 WHP offered home energy improvements to 364 homeowners across two areas (Aberdeen in Scotland and Teesside in England). The home improvements offered were designed to reduce the energy consumption needed to achieve healthy temperatures. Those offered the service had previously received an energy credit from WHP in 2022/23. 166 householders were initially interested in taking part and 92 of those ended of having home energy improvements.

In order to evaluate the benefits of implementing home energy improvements to deliver a warm home, the following was undertaken[4]:

- Research was carried out with participants (those who took up the offer of a WHP of home energy improvements) and non-participants (those who declined to take up the offer). Surveys were sent to participants at the beginning and end of the trial. The number of surveys received back were: n=81 beginning of trial, n=71 end of trial Surveys were sent to non-participants at the beginning and end of the trial. The number of surveys received back were: n=55 beginning of trial, n=196 end of trial.
- Temperature loggers were issued to participants and non-participants (a total of 155 sent). The number of loggers received back were: n=68 participants n=34 non-participants.
- Qualitative interviews were conducted at various points in the customer journey. 3 rounds of n=8 x 30-minute phone calls with residents and 3 rounds of n=2 x 30-minute phone calls with IMTs (Installation Management Team).

The research found that mental health and wellbeing were maintained throughout this winter and further analysis suggested that the intervention positively impacted mental health. From the available sample of people who had home energy improvements (n=68), temperature logger data shows that over half (53%) of them achieved healthy temperatures above 18 degrees Celsius for most of the time. Most people did not put their health at extreme risk over winter 2023/24. While around half of that sample achieved temperatures above 18 degrees Celsius most of the time, three quarters kept the rooms at temperatures above 16 degrees Celsius almost all the time.

## Case study 2: Gentoo's Boiler on Prescription Scheme

**Key details:** small scale pilot **providing** home improvements for the homes of six patients with COPD in Sunderland.

**Organisation(s):** Gentoo Housing Association, Sunderland Clinical Commissioning Group (CCG), Durham Darlington Easington and Sedgefield (DDES) CCG

**Location:** Sunderland

**Duration:** Launched in 2013 and trial data collected over 18 months. Closing report published in March 2016

**Who it supported:** Partnerships with CCGs allowed for actual health data to be used to target and as a measure of success. Using this, Gentoo were able to establish that one in three Gentoo customers in the local area of their retrofit scheme had presented themselves at A&E in the previous year, compared to one in seven of non-Gentoo customers across the city of Sunderland. Those eligible had Chronic Obstructive Pulmonary Disease (COPD) and lived in a Gentoo home with an EPC rating of D.

**What was delivered:** In January 2014 six homes of patients of Chronic Obstructive Pulmonary Disease (COPD) were improved with a combination if energy and thermal measures including new boilers, double glazing and insulation.[5]

Scheme aimed to help Gentoo customers to be healthier and happier in their home, and help CCGs to:

- Reduce emergency admissions and re-admissions.
- Improve patients' self-care and sustainability.
- Improve the quality of life for people with long term health conditions.
- Increase life expectancy of the local population.

**Evaluation and evidence:** It is important to note that this was a very small scale intervention, and so the evaluation evidence[6] should be treated with caution.

As previously noted, six homes of patients of Chronic Obstructive Pulmonary Disease (COPD) were improved with energy and thermal measures. A control group was also created with six patients with COPD who frequently attended their GP and hospital but whose homes had not been improved with any thermal or energy efficiency works.

Results after 6 months of the trial:

- 28% reduction in GP appointments.
- 33% reduction in outpatient appointments.
- Up to 35.6% reduction in gas consumption per month.
- Up to £29.92 saving on gas bill per month.
- Generally, an increase between 2 and 7 SAP points, however a maximum increase of 47 points.
- Up to a 42% increase in living room temperature.
- Up to 14% increase in bedroom temperature.

Results after 18 months of the trial:

- 60% reduction in the number of GP appointments needed by those taking part in the trial.
- Attendances at A&E have decreased by 30%. There is a difference in the winter period pre and post installation with fewer attendances post installation.
- Outpatient appointments have decreased 22% (12 appointments) over the course of the trial. These appointments may relate to planned care for a range of conditions, and as a result it is possible that outpatient appointments may not be related to cold related health conditions.

- Emergency admissions have decreased by 25% (2 appointments) over the course of the trial.
- No significant change in either the number of items prescribed or the cost of the patients' prescriptions.
- Patients' energy bills have reduced on average by 14% as a result of the improvement work carried out in their homes.

## Case Study 3: Gluasad Còmhla (Moving Together)

**Key details:** tailored support provided to 198 households containing someone with a long-term health condition in the Outer Hebrides.

**Organisation(s):** Tighean Innse Gall (TIG), Langabhat Medical Practice, The Shed, Western Isles Association for Mental Health (WIAMH), Western Isles Foyer, Western Isles Citizens Advice Service

**Location:** Outer Hebrides

**Duration:** 2018 – 2020

**Who it supported:** GPs and health professionals identified people whose health was compromised by living in a cold or hard to heat home. Over two years, 199 households were assisted through the project.

**What was delivered:** Gluasad Còmhla (Moving Together) built on existing practice of Tighean Innse Gall (TIG) and other partners in the Outer Hebrides, to develop an innovative approach to identifying and assisting people whose health is compromised by living in a cold or hard-to-heat home. Project worked in partnership with GPs, as well as other health professionals, including health visitors and specialists in dementia and Parkinson's disease.

The project provided tailored support to people with long-term health conditions. This included assistance with switching to more affordable tariffs, access to grants and benefits, home energy advice, and access to insulation and technologies including white goods and renewable energy systems. At the point of project referral, the client and their home was assessed in a holistic manner to ensure that all routes to making the home warmer were addressed. This included the behaviour of the client, the fabric of the house, health related needs and their household income.
Support provided by the project included home visits to look at energy issues in the home and/or provide advice. Initial conversations resulted in focused assistance, including help with bills and switching tariffs, identifying and applying for relevant grants and benefits, insulation, surveys of housing condition and monitoring. Other forms of assistance included installing renewables and helping householders access LED lights and energy-efficient white goods. This support is what TIG were able to give rather than necessarily the totality of the help required by the householders.

**Evidence and Evaluation:** The project was evaluated by the Sustainable Housing & Urban Studies Unit at the University of Salford.[7] This used a predominantly qualitative methodology consisting of interviews with individual householders (17) and stakeholders (23) and supplemented by an online and postal survey in January 2020 (27 responses out of a possible 198 households supported). Data from TIG

covering the type and distribution of support measures was also analysed, and two workshops also held with stakeholders after the first phase of the project.

Householders evidenced a range of challenges relating to the quality of their homes and the impact on their health. One interviewee said that they had been close to moving away from their home but were now more confident that they could achieve a comfortable temperature in their current home: *"it was coming to the stage that I was nearly… I would be better moving into another house for my health, but it's warm now".*

Helping to lower costs resulted in people being more confident using their heating and could also have implications for other aspects of life, including diet, social life and mobility.

Whilst material changes to houses and financial savings were the measurable outcomes of the project, this feeling of support and guidance and the benefits of this for mental health and wellbeing should not be underestimated. Findings from householder survey on health should be interpreted with care. On the one hand, they suggest no clear relationships with overall health, ability to cope day to day, visiting GPs and seeking support from the NHS. On the other hand, this may reflect the nature of long-term conditions, which are not only unlikely to change significantly over the relatively short timescale of the project but are also subject to their own variances over time.

Householder comments reflected additional, less tangible impacts on wellbeing. One householder described being better able to cope, reporting that "*other events have challenged me and affected my coping overall in 2019"* but that *"in respect of the work done, I cope better in the house, which is so important, as I rarely go out".* Meaningful partnerships and trusted organisations were seen as important in spreading trust in the project, and the involvement of NHS staff gives particular authority to messaging.

GPs interviewed were positive about the project but were also candid about limitations. The GPs spoke about the limitations of the resources they had at their disposal when faced with complex health issues and other interrelated problems, and it is important to acknowledge the practical constraints placed on GPs in the form of short appointments and high patient volumes. Despite these constraints, health professionals saw potential in the holistic nature of Moving Together. There was also a sense that Moving Together had increased their awareness of the impacts of cold homes and provided them with a mechanism through which to act.

# Theme 2: Multi-agency collaboration

**Key findings**

- There are numerous case studies which demonstrate the importance of multi-agency partnerships in delivering projects which target both fuel poverty and health.

- When establishing projects, it is important to work with pre-existing organisations (private, public, and third sector) and community networks. This process should be built into project timelines.

- Evaluation of these projects is, in many cases, limited. This is because many of these pilots are operating on a small scale. Nonetheless, in order to share learning from and potentially scale up projects, robust evaluation is vital.

- Interventions (energy efficiency, new heating systems, warm banks) have substantial benefits for health and wellbeing but also have a positive impact on the wider determinants of health, including reduction in stress and isolation.

- Consideration needs to be given to capacity and budget constraints of partners, including local authorities, GPs and other health services, and the third sector.

## Case study 4: Warm Homes, Healthy Futures

**Key details:** network connecting health, housing and energy experts to deliver support locally to keep people warm, safe and healthy at home. Made up of 26 partner organisations working with over 500 health professionals across more than 100 communities in GB.

**Organisation(s):** National Energy Action (NEA), Energy Action Scotland, NHS bodies, public health teams, local authorities, housing and community organisations across more than 100 locations, Cadent, Northern Gas Networks, SGN, Wales & West Utilities. 26 delivery partners providing localised energy advice and support, and over 500 referral partners, including GPs, social prescribers, COPD nurses and care teams.

**Location:** Across GB

**Duration:** Ongoing, launched April 2024

**Who it supports:** The programme is targeted at individuals with physical or mental health conditions that are exacerbated by cold homes. Individuals are identified for support via health and social care professionals, including GPs, social prescribers, cancer care, pharmacists, mental health services, community health, and adult social care.

**What is delivers:** Warm Homes, Healthy Futures is a National Energy Action co-ordinated network connecting health, housing and energy experts to deliver support locally to keep people warm, safe and healthy at home. It establishes a pathway for

health and social care professionals to connect the vulnerable people they support to vital energy and $CO_2$ safety advice, income maximisation, essential gas appliance servicing, as well as related crisis support. The project also raises awareness in communities and trains frontline professionals on the health risks of cold, damp homes and CO safety. The programme aims to be flexible in order to draw on local and regional intelligence to understand and shape delivery.

There are currently 26 partner organisations operating across local government and the voluntary, community and social enterprise sectors. These organisations are working with over 500 health professionals across more than 100 communities.

**Evaluation and evidence:** Full evaluation of the programme is not yet available. It is intended that it will take the following design:

- Stream 1: what are the quantifiable impacts of the programme – social return on investment.
- Stream 2: what is/was the lived experience of households we helped pre- and post- intervention?
- Stream 3: what lessons can be learnt which spotlight principles and may benefit future programmes design?

There are some descriptive statistics available but no detail on the methodology behind them. Following the first year of the programme, NEA reports that:

- Nearly 17,000 people were reached, and over 8,000 were given in-depth advice.
- Over 3,300 benefit checks were carried out.
- More than £350,000 in crisis funding accessed.
- More than 600 frontline professionals trained.
- Over 5,000 CO alarms distributed.
- £25,000 in fuel debt relief.
- Over 3,000 households offered gas appliance safety checks.
- More than 5,000 people reached in person at community events.
- Fuel vouchers, warmth packs and wider support given to hundreds of people[8].

As of March 2026, NEA reports that the programme has:

- Reached over 39,000 people and provided in-depth advice for 17,000.
- Unlocked £7.7 million in benefits and £1.8 million in additional financial outcomes.
- Trained over 3,000 professionals across the health and social care sector.
- Held 27,700 conversations on carbon monoxide safety and energy efficiency.
- Improved health outcomes – with 29% of clients reporting better physical health and 33% reporting better mental health.
- Reduced fuel poverty – fuel poverty[1] fell by 29% for those receiving support[9].

Clients who have received support through Warm Homes, Healthy Futures say that:

[1] It's not clear how the Scottish definition of fuel poverty is factored into this calculation.

- They are less likely to fall behind on energy bills and to need to ration food and fuel.
- They have better knowledge of how to save energy while staying comfortable.
- They feel more confident communicating with their suppliers and better able to heat their homes safely.

National Energy Action recently presented on the programme at their Insight to Impact Network. Beyond direct delivery, they highlighted that the programme has helped to shift the policy and practice conversation on cold homes as a health issue. Including by:

- Raising the profile of health-connected fuel poverty at Westminster.
- Positioning cold homes and health more strongly in national policy debates.
- Extending influence through strategic partnerships.
- Supporting growing policy engagement with government.
- Strengthening the case for health-connected fuel poverty support as a system solution.

## Case study 5: Warmer Homes, Advice and Money (WHAM)

**Key details:** multi-agency partnership in Bristol, North Somerset, Bath and Northeast Somerset launched in 2017. From September 2017 to January 2024 6,538 households were supported.

**Organisation(s):** Centre for Sustainable Energy, We Care Home Improvements, Talking Money, North Bristol Advice Centre, Citizens Advice (Bristol, North Somerset, and B&NES branches) Bristol Energy Network, AMS electricals, Clean Slate (Quid's In), North Bristol NHS Trust, and Weston Area Health NHS Trust

**Location(s):** Bristol, North Somerset, Bath and Northeast Somerset

**Duration:** Ongoing, launched in 2017

**Who it supports:** those on low incomes and those struggling to afford to heat their homes. Also has a referral route via hospitals, with a particular focus on combatting damp and mould in people's homes.

**What is delivered:** WHAM is a multi-agency partnership led by the Centre for Sustainable Energy which aims to tackle the interconnected causes of fuel poverty through providing advice on energy, money, benefits and carrying out home repairs. The project works closely with local authorities, public health organisations and the NHS to combat the rising occurrence of damp and mould in people's homes. Hospital staff can make referrals directly to WHAM, with support being given even while the patient is still in hospital.

The project has caseworkers who rotate between each partner organisation, understanding the specialisms of each organisation, becoming the single point of contact for beneficiaries and co-ordinating the work undertaken by all partners.

**Evaluation and evidence:** Minimal evaluation or evidence of impact available. The service's 2024 Impact Report notes that from September 2017 to January 2024, WHAM has supported 6,538 households to the value of £3.63 million in case outcomes[10].

Clients supported have emphasised the high quality of the support provided, and the compassion and kindness of caseworkers. One client said:

*"Neal [WHAM caseworker] has been an absolute angel. Without his help I really don't know what we would've done, I was at my wits end. Without him nothing would have been resolved. I can't thank him enough.*

*The dehumidifier helped with the damp situation, and my partner's breathing is better. Neal is a lovely positive caseworker, you helped get us through it all.*

*This service is really important in this crises, you need this to help people out there. You are a Martin Lewis[11]."*

The project is recognised as good practice by NHS England and Public Health England in The 2nd Atlas of variation in risk factors and healthcare for respiratory disease in England (September 2019).

## Case study 6: Home Energy Scotland, vaccination clinic drop ins

**Key details:** energy advice provided at vaccine centres in NHS Lothian, NHS Borders and NHS Fife.

**Organisations(s):** Home Energy Scotland (HES), NHS Lothian, NHS Borders, NHS Fife

**Location(s):** Lothians, Borders, Fife

**Duration:** Since 2023 (at least) in Lothian and Borders, possibly earlier (2021-22) in NHS Fife

**Who it supports:** Support is targeted at those receiving winter and spring vaccinations. Eligibility for vaccinations varies by vaccine but generally relates to age (65 for flu, 75 for COVID-19) or having a weakened immune system.

**What is delivered:** HES has worked in partnership with NHS Lothian, NHS Borders, NHS Fife to provide advice at vaccine centres. The service supports people to stay warm for less in their homes and also gives advice on how you can reduce your energy use to lower your bills but still stay warm in your home. Support is also provided to households to see if they are eligible for any support to make energy efficiency improvements to their home, including insulation and central heating[12].

**Evaluation and evidence:** none.

## Case study 7: Helping Sickle Cell Patients with the Cost of Heating via the Mayor of London's Warmer Homes Programme and the Lambeth Sickle Cell Support Scheme

**Key details:** grants for energy efficiency measures available to people with sickle cell disease in London.

**Organisation(s):** Mayor of London, Lambeth Council, various NHS trusts in London

**Location(s):** London

**Duration:** Mayor of London Warmer Homes Programme, 2022 – present; Lambeth Sickle Cell Support Scheme, 2023 – present

**Who it supports:** People with sickle cell disease living in London generally (for the Mayor of London's Warmer Homes Programme) and Lambeth specifically (for the Lambeth Sickle Cell Support Scheme).

**What is delivered:** The Mayor of London's Warmer Homes Programme explicitly recognises haemoglobinopathies, including sickle cell disease, as eligibility criteria because cold exposure is a known trigger for pain crises.

The Programme provides grants of between £5,000 and £25,000 to eligible low income homeowners and private tenants, with funding amounts depending on existing energy efficiency rating, tenure and fuel type (i.e. gas, electricity, oil or LPG). Options available to those eligible include installation of heat pumps, insulation, and solar energy; heating system improvements or repairs, and draught proofing[13].

The Lambeth Sickle Cell Support Scheme provides residents with sickle cell diseases non-clinical support to help them avoid crisis and improve their health and wellbeing. The support provided is designed alongside residents and may include receiving energy efficiency measures, advice to maximise incomes or financial support to help with energy bills and other associated costs[14].

**Evaluation and evidence:** none

## Case study 8: The Clean Air Clinic

**Key details:** paediatric clinic in Liverpool for patients whose recurrent illness is suspected to be linked to environmental exposures, running since 2021.

**Organisation(s):** Alder Hey Children's Hospital Trust, plus collaboration with multiple health pathways (health visitors, GPs, Emergency Department, and paediatric clinics), local authorities, landlords and housing associations.

**Location(s):** Liverpool

**Duration:** Ongoing, founded in 2021

**Who it supports:** This is a service for patients whose recurrent illness is suspected to be linked to environmental exposures. Referrals typically involve children with recurrent wheeze, asthma or respiratory infections. While some cases are linked to outdoor air pollution or industrial emissions, most are related to poor housing conditions – particularly damp and mould. Patients are referred through multiple pathways, including via health visitors, GPs, Emergency Departments, and paediatric clinics[15].

**What is delivered:** Paediatric respiratory consultant, Professional Ian Sinha, formed the initiative after observing that a significant proportion of his work involved addressing environmental and housing issues. Each consultation involves a detailed clinical history, environmental history, integrated assessment and report. Video calls enable the team to visualise the home environment, focusing on problematic areas such as damp, mould, ventilation, and smoking/vaping, as well as travel and transport. Families are asked to provide photographic evidence which is included in the written report.

The clinical reports produced serve as evidence-based advocacy tolls that are shared with councils, landlords, and housing associations, either by the families themselves or by the clinic directly, to trigger environmental interventions. This collaborative approach with councils, housing associations, and communities is vital, and requires proactive engagement and the trusted relationships to support the navigation of complex bureaucracy. Further, this approach represents a culture shift which sees paediatric clinicians stepping outside of hospitals to tackle the root causes of illness in partnership with the systems that shape children's environments[16].

**Evaluation and evidence:** see case study 9 below.

## Case study 9: Children's Environmental Assessment Service

**Key details:** paediatric respiratory clinic in East London which monitors pollution levels and their effects on patients, operating since 2023.

**Organisation(s):** Royal London Hospital

**Location(s):** East London

**Duration:** ongoing, opened in 2023

**Who it supports:** Children who have, or are at risk of developing, asthma.

**What is delivered:** The clinic was developed by Professor Jonathan Grigg, a researcher in air pollution and child health, and Dr Abigail Whitehouse, a paediatric respiratory consultant and senior clinical lecturer, to integrate environmental health research into clinical practice. The clinic monitors pollution levels and their effects on patients. It assesses both outdoor and indoor pollution exposure and aims to provide data-driven assessments of environmental exposure risks and potential mitigation strategies[17].

The one-hour appointment includes a full medical history and examination. Following this, there is a home visit to deliver and set up portable air quality monitors (which will be used over a three-day period), take relevant environmental photographs and conduct mould sensitisation tests. A separate appointment for mould blood tests is arranged, and children are brought back to clinic for follow up. The intention is that the accumulated information will create a picture of a child's risk, and that the data can be used to inform bespoke recommendations on reducing exposure and supporting housing and lifestyle changes. By monitoring pollution levels both in the home and at school, the team produces an exposure report for each child. They then work with the child and their family to find ways of reducing their level of exposure.

**Evaluation and evidence:** The Royal College of Paediatrics and Child Health (RCPCH) have reported on both the Alder Hey and Royal London Clinics[18]. The report combines findings from interviews with clinic teams (n=7), a survey of paediatricians (n=24), and engagement with children, young people, and families. The RCPCH report highlighted that the two clinics demonstrate how a dedicated, multidisciplinary approach can address the environmental determinants of health. The importance of personalised reports, collaborative advocacy, and extended, dedicated consultation is emphasised, with the result of these efforts including securing families improved housing and reduced exposure to harmful environmental conditions.

The report does, however, note sector-wide challenges. Despite socioeconomic deprivation, poor housing conditions, and high pollution exposure serving as significant barriers to good child health, these issues are often unaddressed in routine care. This is due to time constraints, limited training, and systemic resource pressures. Furthermore, these current models rely on charitable and academic funding and a small number of expert clinicians. As a result, without sustainable funding and dedicated training, replication across the NHS will be a challenge.

Nonetheless, the report concludes that the clinics offer valuable insights into cross-sector collaboration, holistic assessment, and patient empowerment. Children and young people and parents involved in the study discussed the importance of collaboration between multiple public services. Families are often scared to raise the issue of substandard housing due to fear of eviction and also found some housing services to be dismissive of complaints around conditions. The two clean air clinics' combination of personalised, evidence-citing reports and more influential points of contact within housing and council organisations has led to faster and more productive interventions. It was also noted that the existence of the clinics serve to validate the concerns of families, while having clarity on the links between housing and health reduces the associated stigma.

All Clean Air Clinic clinicians agreed that education around environmental and social determinants of health were key outcomes of the clinics. This could include educating allied health professionals and working with partner organisations (such as existing collaborations with Global Action Plan) to create training materials. It could also specifically include upskilling paediatricians by embedding environmental health into the general paediatric curriculum and exams[19].

## Case study 10: Home Energy Scotland Energycarer Service

**Key details:** specialist energy advice service for vulnerable households established in 2017 operating in Scotland.

**Organisation(s):** Home Energy Scotland (HES), and collaboration with local partners including the NHS, social services, local housing networks, and advice providers.

**Location(s):** Pilot projects took place in Annandale & Eskdale (South West Scotland) and Moray East (North West Scotland), since rolled out in the rest of Scotland.

**Duration:** Ongoing, pilot in 2017-19

**Who it supports:** Energycarers are specialist energy advisors who can provide intensive support to acutely vulnerable households with issues relating to physical or mental health, disability, family circumstances, low income and expensive heating. Often these are householders who are likely to require more than one face-to-face visit and are less able to make full use of the free phone service and website[20].

Referrals come internally from HES, but the service is also promoted among local partners including the NHS, social services, local housing networks, and advice providers.

**What is delivered**: Energycarers work to help householders achieve affordable warmth, so they can afford to keep their home at a comfortable and healthy temperature.

The service works in partnership with local organisations, so HES looks first to access support through local partner organisations before arranging a home visit. If no partner is in place and a visit would be helpful, an Energycarer meets the householder, sometimes with a relative or carer present, to look at how their home uses energy and see what could be improved.

The Energycarer supports the householder during the initial energy check and throughout the process of any changes made to their home heating or insulation. They work with the householder to make sure they can control the temperature in their home and find the best energy tariff.

Energycarers help householders to:

- Find funding for energy efficiency improvements or home repairs through Warmer Homes Scotland and other funds.
- Prepare their home for work to be carried out.
- Approach their private landlord about energy issues.
- Resolve fuel billing issues[21].

**Evaluation and evidence:** In 2019 the University of Edinburgh undertook an evaluation of the pilot project[22]. The evaluation involved: social survey (17 pre-intervention, 13 post-intervention); internal temperature monitoring with households receiving the service and a control group receiving a standard HES Community Liaison Officer service; interviews (n=3) with the HES Homecare team; a series of case studies, and a live learning document compiled by the HES Homecare team. However, it should be noted that the social survey and internal temperature monitoring did not reach the number of participants required for statistical analysis, which means that the findings from this aspect of the evaluation do not form a robust basis for policy development.

The pilot struggled to reach the numbers targeted, demonstrating the challenges for identifying and supporting vulnerable groups in rural areas with a high index of multiple deprivation.

A critical part of the Energycarer's role was to establish partnerships with community and healthcare organisations in the region. The relationship between health and social care providers in Moray took time to develop, and the HES Homecare team reported that this delayed referrals. As such, the majority of referrals still came through Home Energy Scotland's existing database of clients. The findings showed that it can be difficult to maintain partnerships with the variety of organisations that could potentially help in making referrals. At interview, the HES Homecare team reported that it could be challenging to maintain these partnerships whilst also managing customer journeys. As such, the pilot suggests that a more systematic strategy, including support for public health and social care services operating in liaison with neighbourhood and community organisations is very important.

Through HES Homecare, the residents received additional support through the processes of applying for funds and receiving interventions in the home. One of the HES Homecare team noted that *"the freedom to spend time with the householder, to establish that relationship of trust and to support them every step of the way"* was one of the main benefits of the scheme. This type of service was also highlighted as particularly important for a resident with chronic fatigue who made progress in receiving additional benefits with the help of regular reminders and Energycarer support. Having a consistent and personable level of support was identified by the HES Homecare team as a critical aspect of this service. However, while effective, the individual case approach applied through HES Homecare is resource intensive. As a result, the evaluation found that work needs to be done in order to develop a stronger area-based approach and to utilise existing local networks and services more efficiently for the coordination of an area-based strategy[23].

## Case study 11: South Tyneside Welcoming Places Warm Banks Scheme

**Key details:** warm banks held across 70 venues in South Tyneside, launched in winter 2022.

**Organisation(s):** South Tyneside Council and 70 venues including community spaces, council buildings, family hubs, libraries, and local businesses. The Welcoming Place scheme built on preexisting organisations and locations; by

expanding existing programmes to include a warm bank offer and developing other services and activities.

**Location(s):** South Tyneside

**Duration:** Ongoing, launched in winter 2022

**Who it supports:** Local residents who cannot afford to heat their homes. Although the project is described as a health intervention, no detail is provided on how targeting for the service was carried out.

**What is delivered:** South Tyneside's Welcoming Places scheme was launched in winter 2022 in response the cost-of-living crisis. Warm banks, also known as warm spaces or warm hubs, are a relatively new type of health intervention to support those experiencing fuel poverty to stay warm for free if they cannot afford the heating in their homes. As well being a place for people to stay warm, Welcoming Places also set out to be spaces where people can socialise, access support and advice, and give back to their community[24].

**Evaluation and evidence:** A small qualitative analysis of the scheme was published by Teodorowski et al in 2024[25]. The evaluation of the project consisted of two stages. In stage 1, semi-structured interviews (n = 16) were conducted with residents who attended Welcoming Places and two focus groups with people running them (n = 9). In stage 2, the initial findings from stage 1 were discussed in a focus group with residents (n = 8).

The evaluation found that attendance numbers were higher during colder weather. Most participants felt they could use Welcoming Places as an alternative to putting heating on at home and to stay warm during the cold months. The ability to stay warm was of particular importance to the interviewed residents who had underlying health condition which required them to stay warm, they said:

*"...with having leukaemia you feel the cold, the pressure of paying your bills, I mean I know we got help last year from the government but it was still pressure to pay the bills, you know. And it was just a couple of hours where you are not spending your money but you are keeping warm."*

Staying somewhere warm allowed participants to stay active; this included with activities organised by the Welcoming Places that encouraged attendees to stay physically active:

*"[T]hey have Pilates here, but you couldn't do that unless the place was warm, (...) we have a sewing group here, a knitting group, we do keep fit, which is fantastic for the old people."*

Another major benefit that many discussed was the positive impact on mental health and wellbeing. The Welcoming Places offered an opportunity for residents to socialise with others and avoid isolation at home. For some, the community offered by the Welcoming Places was crucial as they reflected on the social isolation that had developed since the COVID-19 pandemic. One resident said:

*"You know you can come in on your own, and somebody will straight away say hello and 'how are you' and, and you don't feel alone. Which to me, makes me feel really comfortable."*

Overall, through this evaluation, it became clear that, in addition to providing a warm place to spend time and affordable food, the Welcoming Places had a significant impact on the mental health and well-being of residents. Many residents spoke highly of the community and friendships that had been built while they attended their local Welcoming Place.

## Case study 12: NHS Hastings and Rother Clinical Commissioning Group (CCG) Healthy Homes Programme

**Key details:** heating and insulation measures delivered to 146 households in Hastings and Rother over an 18 month period from October 2016.

**Organisation(s):** NHS Hastings and Rother Clinical CCG, Winter Home Check Service ran by East Sussex Council Public Health team, Hastings Borough Council

**Location(s):** Hastings and Rother

**Duration:** Project was established in October 2016 as an 18-month pilot

**Who it supported:** The programme was targeted at poor condition properties in the private sector (owner-occupiers and private tenants) where fuel poverty is an issue due to unsatisfactory heating, poor thermal insulation, and generally poor energy efficiency.

**What it delivered:** The pilot project funded installation of major heating and insulation measures, through the Winter Home Check Service. The programme aimed to reach at least 148 properties in wards with the highest number of fuel poor households in Hastings and Rother (i.e. Braybrooke, Castle, Gensing, Old Hastings, Central St Leonards, and Bexhill Central). Major measures funded by the programme included: cavity wall insulation, hard-to-treat cavity works, loft insulation, floor insulation, solid wall insulation, full central heating systems, central heating boiler replacement, and storage heaters[26].

**Evaluation and evidence:** The University of Brighton were commissioned to carry out a single-cohort mixed-methods evaluation, with before and after data collection points[27]. The results of the evaluation were published in 2019. Data collection for the evaluation was carried out via three main phases: baseline (pre-intervention) survey data collection (n=146); follow-up (post-intervention) survey data collection, and follow-up qualitative data collection (23 interviews with beneficiaries, 12 with stakeholders).

To assess health and wellbeing, a general health status question and the Warwick-Edinburgh Mental Wellbeing Scale were used. Baseline data were collected before any heating and/or insulation work had started and follow-up data were collected after all intervention work was completed. Self-rated health and wellbeing in beneficiaries increased significantly from 2.0 and 39.3 respectively, to 2.9 and 42.5

post-installation. Interestingly, health and wellbeing of those who had a minor measure installed, in addition to a major measure, benefitted more than those who only had a major measure installed.

23 beneficiaries were interviewed about their experiences of the programme and the impact that the new system has on their lives. Clear examples were provided of the positive impacts on physical health and wellbeing including people reporting fewer chest infections, reduced pain, feeling less anxious and depressed, and generally feeling happier and more relaxed. Interviews also highlighted broader areas of impact such as reduced social isolation, increased use of domestic space, and an increased sense of control.

12 interviews with key stakeholders of the programme were carried out to gather information on the delivery of the programme. A particular strength of the programme included the development of strong partnerships within the statutory and voluntary sector, which was viewed as essential for the scheme to be successful. It's successful delivery was due to its integration within an already established service with existing partnerships and referral networks (the Winter Home Check Service). One stakeholder said:

*"I think the main achievements are that we always said that we would want to deliver this at the greatest scale that we could, but in partnership and building on the existing relationships that exist between statutory and voluntary and community sector organisations, so it is added value, it is aligned, it is enhanced support for vulnerable people in our most deprived communities".*

## Case study 13: Keep Warm, Keep Well

**Key details:** fuel poverty dashboard and energy advice service built into NHS structures to support vulnerable patients in Staffordshire since 2016.

**Organisation(s):** Beat the Cold, Staffordshire Community Energy (SCE), University Hospitals of North Midlands (UHNM)

**Location(s):** Staffordshire

**Duration:** Ongoing, launched in 2016

**Who it supports:** Vulnerable patients identified by healthcare professionals.

**What is delivered:** Keep Warm, Keep Well is a programme coordinated and part funded by Staffordshire Community Energy with support from University Hospitals of North Midlands and delivered by Beat the Cold. As well as demonstrating multi-agency collaboration, it is an interesting example of **innovative funding**, utilising a model where surplus income from SCE's community-owed solar panels on University Hospitals of North Midlands buildings is ringfenced to fund local fuel poverty support, with additional funding provided through the Energy Redress Scheme. Any surplus income from the hospital PV installation is ringfenced in a dedicated community benefit fund, which cannot be used for any purpose other than addressing fuel poverty in Staffordshire[28].

The programme is designed to work within NHS systems, not alongside them, with fuel poverty being treated as a routine health issue, not an external referral. Patient cohorts are identified via One Health and Care shared care record (Graphnet), this is a fuel poverty dashboard embedded within NHS digital systems. Health and community professionals such as GPs, social prescribers and local charities can then refer patients to the service with this digital referral pathway becoming part of routine NHS activity.

Once referred, Beat the Cold provides tailored energy advice, practical support and advocacy with energy suppliers. Help can include fuel vouchers, energy debt management, water bill reductions, and small home improvements such as draught proofing or radiator foils.

**Evaluation and evidence:** An evaluation of the service was undertaken by the University of Staffordshire's Centre for Health and Development (CHAD) and published in 2025[29]. Evaluation is based on the analysis of routinely collected data from 406 households, an in-depth survey from 108 participants, 24 participant interviews and 5 stakeholder interviews.

Based on the survey completed by 108 participants:

- 84% indicated that they received enough information from Beat the Cold on how to stay warm and well during the winter.
- 64% felt that Beat the Cold had a positive impact on reducing energy costs.
- 86% felt that Beat the Cold has helped their ability to stay warm in winter.
- Participants who received financial support were 15 times more likely to report that they stayed warm and well during winter.
- Provision of information appeared to be even more effective: individuals who felt they had received sufficient information reported they were 43 times more likely to improve their ability to stay warm.

Following support from Beat the Cold: 62% said their wellbeing and life satisfaction had improved; 48% said their physical health had improved, and a further 40% reported that their physical health had not deteriorated.

Through the self-report survey, the evaluation sought to assess the impact of the service on healthcare service provision. However, challenges with the data meant that it was not possible to analyse the findings in relation to healthcare impact with confidence. This was primarily due to limitations associated with the use of survey-based data when examining pre and post healthcare service use, including potential response bias, low response to health service use questions, and difficulties when triangulating the self-reported healthcare service use information.

Looking at the qualitative data, participants often emphasised that the ability to keep warm was not only a matter of comfort, but had a significant impact on health, particularly for those living with chronic or age-related conditions. In several cases, Beat the Cold's support, whether through direct energy payments or practical advice contributed to easing physical symptoms and improving overall wellbeing. One participant with fibromyalgia described how the increased warmth in their home helped relieve pain:

*"Physically it helps as well because with the fibro…I'm so sensitive to hot and cold, when I'm cold, my bones and the muscles ache. So it was helping being able to have*

*that little bit of extra warmth…it helped with my physical pain barrier…it sort of has had a ripple effect. It helps with other things, not just the financial thing".*

Participants reported that Beat the Cold's support had a substantial positive effect on their mental health. Many described feeling less anxious and stressed because of receiving financial assistance with energy costs, which helped ease the burden of bills and everyday expenses. The service from Beat the Cold is described as empathetic, tailored, and human-centered, often going beyond energy advice into broader emotional and social care. For individuals with mental health challenges or concentration difficulties, the ease of the service was particularly significant. One participant shared how much they appreciated that much of the effort was made on their behalf, reducing their own burden[30].

## Case study 14: Seasonal Health Intervention Network (SHINE) Islington

**Key details:** a fuel poverty service for London residents with complex health, income, and housing pressures, launched in 2010 and expanded in 2026.

**Organisation(s):** Islington Council, North Central London ICB, GP surgeries and primary care networks (PCNs), social prescribing teams, local authority adult social care, as well as a range of partner agencies delivering energy advice, including Age UK Islington, Energy Saving Trust and Citizens Advice.

**Location(s):** Islington initially but now extended throughout London.

**Duration:** Ongoing, launched in 2010 and expanded in 2016.

**Who it supports:** The service targets London residents facing the greatest health, income, and housing pressures. Eligibility criteria is as follows: household income below £31,000; receiving means-tested benefits; a household member who has a disability OR has a long term health condition worsened by the cold OR is a child under 15 OR is an adult over 60 OR spends more than 10% of income on energy.

**What is delivered:** A fuel poverty and affordable warmth service which supports residents with complex health, mobility and safeguarding needs[31]. The service aims to provide holistic support for vulnerable adults, modelling the service on four key elements:

1. **Holistic strategy addressing fuel poverty** – targets energy issues plus cascading social and health harms to improve quality of life.
2. **Long-term solutions beyond financial aid –** combines energy efficiency, health referrals and wellbeing support to reduce short-term dependency.
3. **Addresses broader consequences –** mitigates poor nutrition and declining mental and physical wellbeing linked to fuel poverty.
4. **Sustainable quality of life improvements –** this is the ultimate aim of the service, a multi-dimensional approach to make outcomes lasting and reduce repeat crisis support[32].

The project has focused on embedding itself within health and social care systems, providing a one-stop referral system for the NHS and third sector to help them provide affordable warmth and seasonal health interventions to London residents.

The service has supported uptake of NHS primary care referrals through refresher sessions, simplified prompts, and troubleshooting with practice managers.

The service provides the following services:

- Energy-saving advice.
- Help accessing grants for heating and insulation.
- Support with energy bills and debt.
- ‘Energy doctor’ home visits to install energy-saving measures and offer tailored advice.
- Referrals for Warm Homes grant.
- Falls assessment.
- Fire safety checks by the London Fire Brigade.
- Air quality alerts for people with respiratory conditions via airTEXT.
- Handyperson service for minor home repair.
- Thermal imaging scans, used to detect key areas of heat loss in your home[33].

**Evaluation and evidence:** much of the publicly available evidence on SHINE is now relatively dated. There is some recent descriptive evidence, which summarises that across London in 25/26, the service created total estimated savings of £849,445; energy costs savings vis home visits of £421,249; over £47,361 worth of debt retrieved, and 470 fuel vouchers issued worth £18,800[34].

# Theme 3: Effective use of data

**Key findings**

- As was flagged under the social prescribing theme, data-linkage initiatives combining NHS health data, income, housing and fuel poverty data are vital to effectively target those experiencing fuel poverty and related health conditions.

- There are clear examples of innovation in this space, with the UrbanTide uZero platform demonstrating what is possible when relationships are established, datasets linked, and insightful and user-friendly dashboards developed.

- However, the NHS can be hard to access as an outsider, with high levels of data protection and systems under pressure. The Cheshire and Merseyside project worked well because it came from within the NHS, but such success may be harder to achieve if initiated externally.

- Cheshire and Merseyside's provision of a toolkit and blueprint guide is a useful way to support other areas to develop their own data dashboards and subsequent projects.

- In the cases below, fuel poverty data is available at a granular level. Consideration should be given to how the Scottish fuel poverty definition could be used to target support in a similar way.

- Where the Scottish definition cannot be operationalised, it is important to consider what data proxies are appropriate. The types of data used by UrbanTide to develop their fuel poverty metric are a good starting point here.

## Case study 15: Cheshire and Merseyside fuel poverty project

**Key details:** linked dataset utilised to create trailblazer fuel poverty projects for target adult and child groups in Cheshire and Merseyside. First trailblazer commenced in 2023.

**Organisation(s):** NHS Cheshire and Merseyside, Cheshire and Merseyside Integrated Care Board (ICB), Health Innovation West Coast, Optum UK, Graphnet

**Locations(s):** Cheshire and Merseyside, specifically trailblazer projects in St. Helens, Knowsley, Warrington, The Wirral.

**Duration:** Ongoing, first trailblazer project in St. Helens commenced in February 2023

**Who is supports:** The dataset discussed below identified two target cohorts:

- An adult group with a COPD diagnosis who lived in neighbourhoods with the highest rates of fuel poverty and carried a 50% or higher risk of an emergency admission.

- A children's group aged 0-4 years prescribed a salbutamol inhaler in the past 12 months, and with a 5% or higher chance of emergency admission.

**What is delivered:** Project brings together the NHS, voluntary and community sector and local authority partners. NHS Cheshire and Merseyside and Health Innovation North West worked in conjunction with Optum UK and Graphnet to create a linked dataset which combines GP data with secondary care, mental health, social care and other socio-economic datasets. Specifically, the approach brought together the following, as defined in the scheme's blueprint guide:[35]

- **Analysis of fuel poverty hotspots:** drawing on official government data, this identified the Lower Layer Super Output Areas (LSOAs) of around 1,500 people or 650 households with high levels of fuel poverty across the ICS.

- **Predicted and actual health care utilisation data:** using the Johns Hopkins Adjusted Clinical Groups (ACG) algorithms, the Integrated Care Board (ICB) population was also divided up into Resource Utilisation Bands (RUB) reflecting expected and actual usage of health care in acute and primary care settings.

- **Further stratification of fuel poor populations:** local CIPHA data[2] also enables teams to assess the vulnerability of its fuel poor population using diagnosed condition, risk of admission, mortality risk and other factors such as living alone.

The data showed that 1.54m people across Cheshire and Merseyside have a medical condition that would seriously increase their risk of harm if their home was poorly heated. 490,000 of those are known to live in a fuel poverty 'hotspot', defined as being in the top 20% of the most fuel poor areas in England.

Optum then facilitated workshop sessions, effectively utilising multi-agency working to involve clinicians and other professionals across NHS, local authority and voluntary sector organisations to interrogate the data and work together to develop targeted actions to support people at risk. Trailblazer projects were developed off of the back of this work. These projects each deliver tailored clinical and non-clinical interventions, such as medicines optimisation, pulmonary rehabilitation referrals, support for smoking cessation, and signposting to financial assistance.

[2] CIPHA is a linked data platform which brings together health and social care data from across Cheshire and Merseyside. Originally established to support the region's COVID-19 response, CIPHA now helps NHS and partner organisations across the ICS to understand and map population health data to support service design and improvement.

Health Innovation North West Coast has produced a fuel poverty toolkit. This brings together assets developed with the teams across Cheshire and Merseyside to identify, engage and support those at greatest risk. This includes guidance on how to access the CIPHA dashboard, a blueprint guide on how the project was developed, and an asset map of all partners engaged with as a part of the project.

**Evaluation and evidence:** Graphnet undertook an evaluation of the project's fuel poverty dashboard in 2023[36]. Two groups were targeted, members of the Fuel Poverty Steering Group for the project and Fuel Poverty Dashboard Users (clinical and non-clinical). This was a very small scale and targeted evaluation, utilising a survey (n=11 of a possible 21) and interviews (n=8 of a possible 15). In terms of the Fuel Poverty Steering Group, key findings include:

- 100% agreed that the fuel poverty dashboard provides an opportunity to improve the quality of care to high-risk patient experiencing fuel poverty.
- 91% agreed that data analytics helped draw meaningful insight to address fuel poverty.
- 91% agreed that the partnerships established within the fuel poverty project have contributed to achieving fuel poverty goals and objectives, and increased access to resource for COPD and Asthma patients living in fuel poverty.

The interviews with fuel poverty dashboard users found that:

- The fuel poverty dashboard provides actionable insights to support the design of preventative interventions.
- Promotes understanding of social determinants of health and the delivery of holistic health and care services[37].

There is not yet evaluation available for all the trailblazer projects, however an outcome evaluation 12 months following intervention has been published for the St. Helens and Knowsley project[38]. The purpose of the evaluation was to investigate whether the fuel poverty pilot in St. Helens and Knowsley place led to a reduction in primary and or secondary care activity in the first 12 months following a patient intervention. A differences-in-differences analysis was applied to the cohort comparing outcomes in the 12 months (52 weeks) after intervention between people who had received an intervention within the pilot and patients who did not. It should be noted that the cohort size for this intervention was small (254 patients in each of the intervention and control groups).

The fuel poverty pilot was associated with a 9.8% reduction in GP appointments (400 appointments avoided) in Knowsley and St. Helens place compared to what would otherwise have been expected. Within the scope of activity for Knowsley and St Helens, for the 254 patients analysed, this is estimated to have avoided approximately £14,800 from primary care in the first-year post intervention (based on indicative GP consultation costing £37). Scaled to 1000 patients, which would have avoided approximately 1,575 GP appointments or approximately £58,275.

No impact was found on emergency admissions or A&E attendance due to the intervention, nor was there any impact found on primary care prescriptions[39].

## Case study 16: UrbanTide collaboration with Sunderland City Council

**Key details:** a 2022 pilot project with Sunderland City Council to identify ageing households most at risk of fuel poverty and cold and damp homes. The platform integrated smart meter data with health, housing and demographic data to better target care interventions.

**Organisation(s):** UrbanTide, Sunderland City Council (SCC)

**Location:** Sunderland

**Duration:** Pilot collaboration with SCC took place in 2022, but work to develop UrbanTide's AI platform uSmart began in 2015

**Who it supported:** Ageing households most at risk of fuel poverty and cold and damp homes

**What was delivered:** UrbanTide is a small company which supports government, local authorities, and private companies and organisations to unlock data and utilise AI to solve global challenges. Between 2021 and 2022, UrbanTide led a UKRI-funded project to develop a method for identifying customers who are in, or at risk of fuel poverty. The project team merged a deep understanding of vulnerability and fuel poverty with expertise in artificial intelligence (AI) and data science, supported by partners including the Data Communications Company, University College London and the Connected Places Catapult. In parallel, UrbanTide also contributed AI capabilities to a related project led by UK Power Networks and Energy Systems Catapult ("Social Connect"), which similarly used smart meter, socio-economic and geographic data to identify households in need of support. This combination of expertise was essential for identifying and analysing relevant data, and for developing a predictive tool capable of estimating, at a street-by-street level, the prevalence of customers who are in or at risk of fuel poverty. This platform has been called uZero and incorporates smart meter data provided by the Data Communications Company, EPC data as a proxy for the energy efficiency of homes, Index of Multiple Deprivation/Scottish Index of Multiple Deprivation data, data on benefits claimants, and income data in order to produce a fuel poverty metric. The smart meter data is key to the platform, and contains information such as when emergency credit is activated, or a prepayment meter is topped up. The selected datasets have been integrated into a digital tool designed to analyse and present insights on customers estimated to be at risk. A user-friendly interface was also developed, enabling users to explore and interrogate the data[40].

In 2022, UrbanTide worked on a pilot project with Sunderland City Council to support them to identify ageing households most at risk of fuel poverty and cold and damp homes. The adapted platform integrates smart meter data with health, housing and demographic data to provide reliable insights that help SCC efficiently plan support services and better target care interventions[41]. Datasets utilised included GP data related to obesity, asthma, and other health conditions linked to deprivation. The

result was 1 billion cross-sector data points used to identify and target support services.

**Evaluation and evidence:** none available.

## Case study 17: Warm Homes Programme, Bedford

**Key details:** In December 2022- July 2023, 53 households received an energy efficiency installation following identification as having a chronic health condition exacerbated by living in a cold damp home and as living in areas of high deprivation and fuel poverty.

**Organisation(s):** Bedford Borough Council, NHS Arden and Greater East Midlands Commissioning Support Unit (CSU), The National Energy Foundation

**Location:** Bedford

**Duration:** December 2022 – July 2023

**Who it supported:** Residents living in areas of high deprivation and fuel poverty who had chronic health conditions which could be exacerbated by living in a cold and/or damp home.

**What was delivered:** 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. Bedford Borough Council worked with the CSU's Business Intelligence 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[42].

The 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.

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

This was a fairly small scale project. 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.

**Evaluation and evidence:** Evaluation of the project was carried out in two parts. An initial mixed-methods evaluation produced in September 2023 which reviewed wider issues affecting householders' ability to keep their homes warm and dry; analysed household and programme activity data, and analyses of health outcomes data (numbers of GP appointments, A&E attendances and inpatient admissions) for 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. In autumn 2024, the health outcomes analysis was repeated to reflect the potential longer term impacts of the interventions. This further analysis used difference-in differences regression modelling.

In the initial evaluation in September 2023, of people who had received an installation (n=53):

- 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.

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 four appointments per quarter, this decrease is also practically significant from the patients' perspective[43].

When interpreting these evaluation findings, it is again worth noting the relatively small number of installation recipients, as well as the fact that any additional actions that people may have taken to keep their homes warm or look after their health are not accounted for.

# Annex A: Glossary

**Clinical Commissioning Groups (CCG)** – a CCG was an NHS organisation in England, made up mainly of GPs and other clinicians, responsible for planning and commissioning (buying) healthcare services for their local population. In 2022, these were replaced by Integrated Care Boards (ICBs).

**Combined Intelligence for Population Health Action (CIPHA) -** a population health analytics platform that brings together health and social care data to support planning, decision-making, and service design and improvement in the NHS.

**Commissioning Support Unit** - an organisation that provides external support, specialist expertise, and administrative services to NHS commissioners (such as Integrated Care Boards).

**Integrated Care Board (ICB)** – a statutory NHS organisation in England responsible for planning, funding, and coordinating health services for a defined local population.

**One Health and Care shared care record** – confidential NHS shared care record designed to centralise patient information from various health and care organisations.

**Primary Care Network (PCN)** - a group of GP practices that work together with other local health and care providers to deliver coordinated, community-based services to a defined population.

**WELLBY (Wellbeing Adjusted Life Year)** - equivalent to one person experiencing a one point improvement on a ten-point wellbeing scale for one year.

# Endnotes

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