

“The best gift I ever received!”

Connecting Homes For Health

Executive Summary



Action for Warm Homes

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THE CONNECTING HOMES FOR HEALTH PILOT: WHAT WAS IT? WHO DID IT HELP AND WHY?

The Connecting Homes for Health pilot research project aimed to provide 80 to 100 fuel-poor households (who were vulnerable to cold-related ill health) living within parts of the North East catchment area of Northern Gas Networks - namely County Durham and Sunderland - with free gas grid connections, first time gas central heating systems and free energy efficiency advice in order to:

1. **Test and measure** the impact of applying health-based eligibility criteria to the provision of gas grid connections and first-time gas central heating measures on the health and wellbeing of vulnerable residents who are in or at risk of fuel poverty
2. Support the **direct application** of relevant national public health guidance
3. **Develop recommendations** for gas grid connection procedures which enable the health impacts of living in a cold home to be addressed, including the adoption of health-based eligibility criteria for the Fuel Poor Network Extension Scheme (FPNES) following the end of the current RIIO-GD1 price control mechanism in 2021
4. Bring added value to the Warm Home Discount Industry Initiatives (WHD II) scheme by **evidencing wider health-impacts** achieved through the provision of first-time gas central heating systems in off-gas areas and the delivery of holistic energy advice

The pilot demonstrates the potential for measures-based Warm Home Discount Industry Initiatives funding to complement the Fuel Poor Network Extension Scheme when combined with appropriate, evidence-based targeting mechanisms to bring greater comfort, reduce hardship, improve health and alleviate the burden of just 'trying to cope' with difficult, expensive or non-existent heating and hot water systems. It is an indication of the benefits that can be brought to bear on situations of fuel poverty and cold-related health inequalities by developing replicable pathways using existing mechanisms for assistance alongside the application of existing sources of publicly available data.

■ National Energy Action (NEA)

NEA is the national fuel poverty charity working across Great Britain to ensure that everyone can affordably access the energy needed for comfort and wellbeing at home. NEA led on the research and was responsible for the identification and recruitment of eligible households into the project. This was done through a combination of targeted mail-outs using intelligence provided through evidence-based mapping activities, as well as area-based face-to-face recruitment. NEA worked with households to guide them through the various stages of the project, including the provision of a gas grid connection, gas meter installation, heating measures installation, and post-installation advice and support. NEA also led the work to assess the impact of the support provided.

■ Northern Gas Networks (NGN)

NGN are a Gas Distribution Network operating in the North of England (covering the North East, Northern Cumbria and much of Yorkshire). They transport gas to 2,700,000 customers. NGN commissioned the research element of the Connecting Homes for Health Project and were responsible for providing gas grid connections to participant households (funding for gas central heating measures and energy efficiency advice was provided through Warm Home Discount Industry Initiatives).

■ YES Energy Solutions

YES is a Community Interest Company who, as part of their work, help households to reduce fuel bills and save energy by providing energy efficiency services. YES were responsible for the installation of gas central heating systems in properties participating in the project.

TARGETING AND ELIGIBILITY

Applying the concept of proportionate universalism to Connecting Homes for Health, the eligibility criteria used needed to ensure that help was targeted at those who are the most vulnerable in society and who are least able to independently achieve affordable warmth at home. At the same time, restricting eligibility criteria too narrowly would mean that others who were still likely to be extremely vulnerable (but who were on or just above a given eligibility threshold) might be forced to suffer from cold-related ill health without adequate support being provided.

To be eligible for the Connecting Homes for Health pilot, households needed to:

- Have a net income of less than £21,000 (excluding income from Disability Living Allowance or Carers Allowance, for example). This was judged on a case-by-case basis to enable older, sick or vulnerable residents who were slightly above the threshold to receive support where they would otherwise have remained without an adequate heating system
- Have someone living in the home who has a health condition that can be linked with living in a cold home. A small number of households where no specific health conditions were present, but a household member was extremely vulnerable to the health impacts of living in a cold home, were accepted onto the project to prevent future ill health occurring (e.g. there was a new-born baby living in a home with no heating or hot water)
- Have personal savings of no more than £12,000 (allowing for £3,000 funeral costs). Again, this was judged on a case-by-case basis to enable older, sick or vulnerable residents who were slightly above the threshold to receive support where they would otherwise have remained without an adequate heating system.
- Live within a designated postcode area within County Durham and Sunderland identified via the targeted mapping exercise
- Not have a gas central heating system in the property

A mapping exercise was designed and carried out for County Durham and Sunderland, intended to contain the pilot to an area in which the majority of households were low income, likely to be in or at risk of fuel poverty, living in energy inefficient housing and at risk of multiple, cold-related ill health conditions. The mapping involved identifying GP practices within the two local authority areas that were showing high prevalence of multiple cold-related health indicators according to the Quality Outcomes Framework (QOF). Areas were given weighted rankings according to prevalence levels of cold-related morbidity across a number of metrics (like COPD, asthma, cardiovascular disease, stroke). These were then overlapped with the Index of Multiple Deprivation (IMD) rank (along with additional deprivation indicators) and fuel poverty prevalence at Ward level in order to give each GP practice catchment area an overall health/deprivation/fuel poverty risk score. Postcodes falling within a 2-mile radius of each of the highest scoring practices were identified and given to NGN, who carried out an additional layer of mapping to identify which properties were off-gas.

“I’ve never been cold once this winter, whereas other winters, I have sat absolutely freezing; even though the fire was on, it doesn’t bring the heat out like the gas does. It is fabulous. I love it. It is the best thing I ever did.”

THE DIFFERENCE MADE: RESULTS FROM THE PILOT

The Connecting Homes for Health pilot scheme achieved significant benefits for vulnerable households in terms of reducing their risk of subjective fuel poverty and in alleviating cold-related ill health. This indicates that the application of the health-based and financial eligibility criteria and targeting mechanisms (developed during the first phase of the scheme) to the provision of gas grid connection procedures and the delivery of energy efficiency advice and support (including the installation of free gas central heating systems) was successfully able to reduce the experience of health and other social inequalities by a delimited group of extremely vulnerable households.

Home heating and control

The home heating and control experiences of participant households had dramatically transformed for the better following the support that they received, and the positive benefits continued to accrue and endure well after the initial period following the installation.

- Before receiving support, 75.7% of participants were either unsatisfied or very unsatisfied with the temperature in their home. One year after, 100% were satisfied or very satisfied.
- Before intervention, over half (59%) were not satisfied with how easy their heating system was to use. Within a year, 100% were satisfied or very satisfied.
- Almost three quarters (73.6%) were either unsatisfied or very unsatisfied with the amount of control they had over their heating before receiving support but, again, 100% were either satisfied or very satisfied afterwards.
- Whilst nearly two thirds (63.7%) were not satisfied with how well their house kept the heat in pre-intervention, post-intervention 85.9% were satisfied.

Participants described how their new heating system meant they could achieve a better level of warmth at home, when they needed it. This came with improved control, allowing heating use to be tailored to individual need and removing the physical burden of managing a solid fuel system. Homes were transformed from cold and often miserable places, to places of comfort and warmth. Participants felt more liberated within their home, free of the chains of fleeces, blankets and shawls that were previously needed to stay warm. It meant households could use areas of the house that they had previously abandoned. Not only did this increase the space available to them, but transformed everyday practices such as now being able to eat as a family at the dining table, cook proper meals in a kitchen or using spare rooms as areas to pursue hobbies. People could now occupy their home as they would want to, transforming properties from places of having to manage and adapt life to the tyranny of a heating system, to a home where they were freed from the restraints of feeling cold. There were wider social benefits to having improved thermal comfort at home, with ramifications for education and learning as well as facilitating the potential for those with additional needs to fully participate in society. However, it remained essential that households be able to access adequate advice and support following their intervention, to ensure the benefits brought by the switch to gas were not limited by issues such as existing fuel debt.

Keeping warm at home

The combination of receiving a free gas grid connection and gas central heating system, alongside dedicated support and tailored energy efficiency advice, was successful in dramatically and significantly reducing the experience of subjective fuel poverty amongst vulnerable households suffering from cold-related ill health.

- Before receiving support, 93.1% of households were in subjective fuel poverty
- Within a year, 95.1% of participating households were not in subjective fuel poverty
- One year on, 100% of participants were satisfied with their new gas central heating system
- Of these, 61.9% were happy with how much the system cost to run; 85.7% said that they were happy with how easy it was to control; 88.1% were satisfied with the level of heat provided; 50% were satisfied with how the system looked and/or its cleanliness (cosmetic reasons)

Households described the transformations that had occurred in their ability to achieve adequate warmth at home, and the dramatic changes that they had seen to their energy bills following the installation of their new heating system. As such, people could now feel more connected to family and friends, able to focus on other things when they visited, rather than being ashamed of how cold and unwelcoming their homes were. For some, getting out of bed was no longer a dreaded ordeal, now that they knew they would have a warm and comfortable start to the day.

People now felt that their heating systems were easier to manage. Those who previously had solid fuel systems especially were keen to emphasise the sense of freedom and relief that they now enjoyed after no longer having to carry heavy fuel or clean out dirty systems. Not only could this improve mobility, reduce the risk of falls and the exacerbation of joint pain, but could furthermore alleviate worries that the toxicity of the fuel they were using was affecting their respiratory health. In turn, the effects of such benefits could impact upon mental health by enabling a sense of improved wellbeing. The relief of having more efficient heating and hot water systems that were easy to manage was further reinforced for some by a sense that they had now been able to escape the 'danger' posed by their previous heating system; whether as a result of no longer breathing in toxic fumes, avoiding hot fuel being spat out, or having access to improved sanitation.

Some households took a little longer than others to adjust to their new heating systems but, ultimately, participants were happy with their new systems across multiple indicators. Where households indicated dissatisfaction with their new heating system at the 1-3 month stage, the issue was flagged by the Research Team with NEA's advice team who re-visited to property to ensure households understood how to manage and/or control their new system and were on appropriate tariffs/payment methods, as well as looking to identify and remedy as far as possible any issues that may have arisen following the installation itself. Such support was important to ensure participants were able to make the most of their new gas central heating systems, and that they would not suffer detriment as a result of not knowing how to switch tariff or change an Economy 7 meter, for example.

Access to, and management of, hot water

Households were more able to affordably and easily access enough hot water to meet their needs, post-intervention.

- 90.7% of participants felt that it was now easier to heat enough hot water for their needs at home.
- Over two-thirds (68.3%) felt that it was now cheaper to heat enough water for their needs at home, and over a quarter (26.8%) neither agreed nor disagreed.

- 91.2% of those that previously had solid fuel systems said that heating water in summer or when it was warm outside no longer made their homes too hot
- Over a third of households now felt that they used more hot water than they did before (34.9%), and 23.2% felt that they did not

Having improved access to hot water meant that participants were able to make bathing and hygiene related decisions based on preference, rather than according to the limitations set by their hot water system. They could also more easily and quickly access the hot water that they needed. Not only did this lead to a greater sense of convenience, it provided a sense of relief for those who needed regular and dependable access to hot water for the management of health conditions. Participants described how having a gas boiler had improved how they were able to manage hot water needs over the summer, without having to simultaneously over-heat their property or spend money on extra fuel. Others highlighted how having a gas combi boiler had enabled them to reduce waste in terms of heating up water that they didn't need.

However, some households could benefit from clearer information before their installation takes place with regards to what might happen to the speed with which hot water travels through their system. Those who are on a water meter may require additional advice and around water efficiency and how to access water poverty support, should they struggle with their water bill.

Bill affordability

The project was successful in enabling greater access to more affordable energy, or it at least did not increase bills, for a large proportion of participant households. Some, however, were still experiencing financial difficulties. This could relate to such households paying more for their gas than they did their previous fuel, or that they were now consuming more energy than they did before due to improved performance or controllability in their new heating system. It may also relate to continued wider financial vulnerability of the household. In general, however, reduced or stable costs, improved access to dependable and controllable heat, and increased predictability of payments combined to result in positive financial outcomes for participants.

- Before receiving their new gas central heating system, 69.9% of respondents said that they either found it fairly difficult or very difficult to afford their energy bills. A quarter (25.3%) found it either very easy or fairly easy.
- By the time 9-12 months had passed, 77.8% of respondents said that they found it fairly or very easy to pay for their energy bills, and only 16.7% found it fairly or very difficult.
- A year on, almost half felt that their energy was more affordable (47.6%) and 16.7% said that it cost about the same. For 11.9%, bills were less affordable.
- Before their new gas central heating system was installed, 74.2% of participants said that they would have their heating on lower or less often than they would like so that their bills were not too high, either all/most of the time or some of the time. This reduced by almost a third to 51.9% at the 9-12 month stage.
- The proportion of households that were going without electricity all or some of the time because they could not afford top-up their PPM decreased by almost half, from 25.4% before intervention to 12.9% one year after.
- The majority of participants had also been heating fewer rooms than they would have liked so that their energy bill was not too high, pre-intervention (81.9%). This had reduced to 27.9% a year after the intervention.
- Before intervention, two-thirds (66.3%) of participants were not buying essentials such as food and clothes so that they could pay their household bills. This reduced by more than half to 32.5%, 9-12 months afterwards.

- Before intervention, 61% of households agreed to some extent that they often worried about paying all of their household bills on time. By the time 9–12 months had passed since they received support, this had reduced to 34%.
- 62.6% of participants had agreed to some extent pre-intervention that money was one of their biggest worries. After 9–12 months, this had dropped to 50%.
- Pre-intervention, just over a third of respondents (35.4%) agreed to some extent that their energy bills were manageable. After 9–12 months had passed, this had more than doubled to 76.8%.
- Before, 34% agreed to some extent that their household budget was manageable, and this almost doubled to 67.4%, post-intervention.

The proportion of participants resorting to the rationing of their central heating, going without electricity on their PPM, heating fewer rooms in order to save on their bills or not buying things that are really essentials (like food) had been greatly reduced following the provision of energy efficiency measures and advice-based support. However, results also indicate continued financial vulnerability amongst some households who were obliged to continue to implement coping strategies in order to effectively manage their household budget, at the same time that they perceived heat as being more accessible and/or affordable as a result of their new system. As such, the alleviation of subjective fuel poverty may not generally equate to an alleviation of wider poverty and the complete eradication of rationing practices (often described as ‘frugality’) at the same time that it can make coping with wider challenges easier and life more comfortable in some aspects.

Post-intervention, participants described how reductions in the cost of their energy meant that they now felt able to have the heating on higher and more often. Having that bit of leeway introduced into household budgets as a result of energy savings meant households could now buy essentials that they previously would have gone without. Some had been able to reduce their energy costs (will still staying warm at home) to the extent that they were able to make considerable savings. Such experiences had a transformative effect on their lives, enabling a sense of financial independence, self-reliance and of no longer living or surviving on the brink. The relief caused by greater financial savings in turn created benefits to mental health, with participants describing themselves as having a sense of contentment, security and, indeed, empowerment. It meant that people did not have worry about falling into debt, going without heating, food or other essentials, or having to resort to borrowing money from friends and family.

Overall, the scheme was successfully able to reduce financial worry amongst participants with regards to the management of household budgets and how able they were to pay their bills, though a degree of worry did remain for a proportion of households – this was likely linked to their wider financial vulnerability and circumstances.

Impact on cold-related ill health

Post-intervention, participant households were more likely to perceive themselves as being in good physical and/or mental health, were likely to feel that existing conditions had either improved or at the very least not worsened, and that to varying degrees they were likely to possibly, probably or very probably link observed changes to health with their new central heating systems. Participants were less likely to feel that they were cold at home and that this had a corresponding impact upon on their health and wellbeing after the intervention, providing further indications that the project was successful in significantly alleviating the physical and mental health impacts of living in a cold home for participant households, as well as improving their ability to cope with existing illness. In addition, improvements continued to be seen up to a year after households had received support, suggesting that the health-related benefits of such support could accrue and endure over time.

- Pre-intervention, only 13.7% of participant households rated their physical health as either good or very good, and 37% rated their mental health as such.
- After 9-12 months, 74.4% now rated their physical health as good or very good and the proportion of households that rated their mental health as such remained stable (78.6%).
- Post-intervention, half of respondents felt that their health had improved to some extent (50% at the 9-12 month stage). After 1-3 months 7.9% of respondents felt that their health had improved 'a lot', but after a year this had increased to 20%.
- Just under half of participants reported as having experienced no changes to an existing health condition at the 9-12 month (45%) stage.
- One year on, over half (51.7%) felt that any changes they had experienced were either very probably or probably linked with the support they had received. Another fifth (20.7%) felt that they could possibly be linked. Just over a quarter (27.6%) felt that they were either probably not or very probably not related.
- Pre-intervention, 82.7% of participants agreed or strongly agreed that aspects of their physical health were affected by being unable to keep warm at home. However, this had reduced to 7.2% after 9-12 months.
- Before receiving support, around half (48%) of participants felt that aspects of their mental health were being affected by being unable to keep warm at home. This had dropped to 4.8% one year afterwards.
- Whilst almost three quarters of respondents (73.2%) said that their ability to cope with existing illness was affected being cold at home before intervention, this was reduced to 4.8% (after 9-12 months).

Those who had to be at home for extended periods and who needed to feel warm at home because of their health conditions felt more able to affordably achieve adequate levels of thermal comfort. Limitations on their mobility were easier to manage. Older participants with chronic respiratory conditions reported an easing of the symptoms associated with their illness and participants with young children would highlight the positive changes they had seen to their respiratory health. This was often linked by participants with improved air quality, reduce damp and mould and increased thermal comfort. Improvements to mental health were often associated with increased feelings of comfort and a sense that someone's home was now 'on their side' and no longer impeding every day activities like cooking, cleaning, washing and drying. They were also linked with feeling warmer and happier at home, and with being able to access hot water whenever it was needed. For some, improved mental health came with reduced stress and worry about how and when they were going to pay for their fuel. Having reduced heating costs had helped them to enjoy a greater sense of mental wellbeing due to not having to worry about their finances as much, or the decisions they might have to make in order to balance budgets. One of the wider ramifications of improvements to mental health resulting from improved thermal comfort and financial wellbeing were that some participants felt more empowered to address other areas of their lives that had also been causing them distress, such as high water bills. For others, it enabled them to enjoy more time with family members and friends, reducing their sense of social isolation. Changes to how their heating system was controlled meant others could feel more comfortable in the face of existing illness – without their heating system adding additional distress and discomfort.

“We’ve opened the dining room. We don’t eat on the settee like we used to before because that’s where the fire was. Now we’ve got a dining room table and we eat at the table now... Really, the difference to the house is just fantastic...It makes so much difference just to be able to use the space we’ve got.”

Scheme satisfaction

Overall, there were very high levels of client satisfaction amongst scheme recipients regarding each stage of their Connecting Homes for Health journey. Households would often link their sense of satisfaction with the scheme with the health-related and financial benefits that they had experienced. As such, they would often express a sense of overwhelming gratitude and state that the scheme had changed their lives for the better, or that their decision to participate in the scheme had been the best decision that they had ever made.

- 97.5% of participants were either satisfied or very satisfied with the process of signing up for the scheme. The remaining 2.4% were neither satisfied nor dissatisfied.
- 100% of participants said that they were either very satisfied or satisfied with the experience of having their home connected to the gas grid and gas central heating system installed
- With regards, to the quality of the works carried in their home, 95.1% were either satisfied or very satisfied, whilst 2.4% felt neutral towards it. 2.4% said that they were dissatisfied.
- 90% of respondents said that they were either very satisfied or satisfied with the energy-related advice that they received, and no respondents were dissatisfied with it.

The patience and skill of advisors and those managing the scheme was highlighted by participants who appreciated the time taken to guide them through the process in ways that were appropriate to their needs. This again emphasises the importance of having the capacity to provide tailored guidance to vulnerable households with complex needs during all stages of a project, ensuring that they feel informed and supported each step of the way.

Some participants did note issues that they had experienced either following their installation or as part of the process, and their comments highlighted the importance of making budgetary space available during the process of delivery to support households through their installation journey in order to ensure their continued participation and avoid undue stress or worry. They also highlighted the importance of implementing appropriate quality control procedures at each state of project management. Overall, however, participants were generally delighted to have their new gas central heating systems installed. The fact that it was delivered at no cost to the household meant that those who would otherwise have been unable to benefit from support could now do so. Participants described the life-changing nature of the help that they had received, expressing gratitude, relief, amazement and a sense of joy.

Notes from the field, pre-intervention

There was one woman whose boyfriend had used wooden pallets to make sort of 'wooden cladding' over one large wall in the kitchen. She was talking about how much warmer the kitchen was now, and how she had tried to make it Moroccan-themed by hanging drapes off the pallets. You just think, if people have to put wooden pallets on the wall to make it warmer, there's a problem somewhere isn't there? She said one of the hardest things was having to share baths, as there was never enough hot water. Sometimes, three people (the daughter, the mother, and the boyfriend) would have to use the same bathwater one after another. She didn't have anywhere to dry her clothes and had them hanging around the house - including over the staircase and directly over the storage heaters. She said she found the storage heaters very expensive to run.

Steve

Steve is a disabled war veteran. He suffers from PTSD. He lives alone with his dog, Baxter, whom he considers to be his closest friend in the world.

Steve had been obliged to leave his job as a result of his worsening health: his income was drastically reduced, he had fallen into arrears with his mortgage payments and there was a strong chance that his home could be repossessed. He was in dispute with the Ministry of Defence (MoD) over the calculation of his war pension, and he was living on Universal Credit. He could not afford to pay his energy bills, especially in light of his expensive and inefficient heating system: one storage heater in the living room and two portable electric heaters. He therefore generally found himself sitting in the dark and cold at home: he would wear a pair of leather gloves to try and keep his hands warm, but that wasn't enough to prevent the pain creeping into his joints and causing him great discomfort. However, he preferred to suffer the pain in his hands than to risk falling further into fuel debt with his energy supplier. During his dispute with the MoD, his Universal Credit payments were temporarily stopped. He had no food in the house, only dog food. For days he did not eat but drank only water. Steve felt incredibly ashamed of the circumstances in which he found himself and had progressively cut off contact with friends and family as a result. He did not want them to see him struggling and was too proud to stomach the thought of their pity or their offers to help. Feeling cold, hungry and isolated made it harder for him to cope with the symptoms of his PTSD. The only person he ever really saw was his dad, who was suffering from a terminal illness and lived nearby.

Steve's participation in the Connecting Homes for Health scheme was somewhat serendipitous. Normally, he did not answer the front door to anyone unless he was expecting them. The day the NEA advisor knocked, he thought it was the postman asking if he could accept a parcel for his neighbour. He opened the door, Baxter pushed forward and jumped in a friendly manner to greet the advisor. However, Baxter was such a large dog that in doing so, he managed to knock her off her feet and she fell over. Steve felt so bad about this that he invited her into the property to make sure that she was OK – he later said that if that hadn't happened, he would have turned her away and refused to hear about the scheme. However, after speaking with the advisor and letting her into his home, Steve took the decision to say 'yes', and signed up for the project.

One year later, Steve is transformed. He is now able to heat every room in his house and maintain a comfortable temperature throughout. He now has an efficient and fully working heating and hot water system and knows that he can stay warm when he needs it. Despite using his heating system more, his energy costs have reduced so much that he now is able to save money each month. As a result, he has £500 in his savings account. He can afford to buy the food he wants – not just the bare minimum of food that he needs. He has even had help in securing a manageable repayment plan with his energy supplier and is gradually clearing the fuel debt that he accrued before signing up to the scheme. His leather gloves are no longer needed when he is at home: his hands do not hurt anymore, and he can take regular hot baths to further help manage his joint pain. He feels financially independent, and happy. Because he no longer feels hungry and cold, he feels as though he is in better place mentally to be able to deal with the symptoms of his PTSD. His voice now sounds bright and upbeat whereas, before, he sounded sad and forlorn, and was prone to tears. He even felt confident enough to call his water supplier and challenge a bill which he deemed to be too high: in the process he discovered a water leak, was able to fix this himself and get the high bill written off by his water company. He says that letting the NEA advisor into his home that day was the best thing that he has ever done. The scheme, he says, has transformed his life: it has given him his health and financial independence back, and given him hope once again.

DELIVERY INSIGHTS AND LESSONS LEARNED: IDENTIFYING REPLICABLE PATHWAYS OF SUPPORT

The Connecting Homes for Health pilot scheme achieved significant benefits for vulnerable households in terms of reducing their risk of subjective fuel poverty and in alleviating cold-related ill health. This indicates that the application of the health-based and financial eligibility criteria and targeting mechanisms (developed during the first phase of the scheme) to the provision of gas grid connection procedures and the delivery of energy efficiency advice and support (including the installation of free gas central heating systems) was successfully able to reduce the experience of health and other social inequalities by a delimited group of extremely vulnerable households.

However, it is also important to understand how the delivery pathways developed and enacted during the delivery phase of the project (including the connection of households to the gas grid, the installation of their gas central heating measures and the provision of tailored advice and support) were key in enabling such results to be achieved.

Engaging and supporting the most vulnerable households

Retaining the original eligibility criteria and keeping to mapped target areas as far as possible meant the team was dedicated to finding ever-more creative solutions to help those most hard-to-reach participants, rather than widening eligibility and helping those who were easiest to and resorting to a much wider geographical range to bring in the numbers. Ultimately, preliminary mapping is important to identify target communities or areas, but that should be the start and not the end point of a successful recruitment strategy, especially when it comes to engaging and retaining the participation of extremely vulnerable clients. The reality is much more complex, and much more expensive, to deliver.

It meant repeated letters, phone-calls, text messages, face-to-face home visits, door-knocking, private and social landlord liaison. It also meant managing communications with the local council, parish councils, and taking on board the processing of FPNES paperwork. Not only that, it meant organising and carrying out house clearances and storage space, coordinating the provision of small measures such as carpets and curtains, identifying and booking adequate interpretation services and making onward referrals to other agencies able to provide additional support for multiple vulnerabilities. It was also essential that follow-up advice be provided at multiple intervals after an intervention. At times, the application of a small crisis fund meant that the project was able to retain the participation of households, who would have otherwise fallen by the wayside. Importantly, the retention of such households was achieved by spending relatively small amounts of money. The key factor was in staff taking the time to understand the barriers facing each individual household, and creatively seeking out ways that would remove that barrier.

Retaining the participation of vulnerable households in hard-to-treat properties

The extra time and effort spent in recruiting and retaining the participation of vulnerable, hard-to-reach households was also necessary when securing gas connections for 'hard-to-connect' properties. For example, in three cases, complications arose when land that would need to be dug to lay gas pipes crossed private property, and permission to work on the land had to be sought. Challenges were encountered with regards to identifying whether a household had a Meter Point Reference Number, or MPRN, as well as in securing a timely gas meter installation. Whilst the responsibility of doing so lies with an energy supplier, the process was incredibly complex with multiple organisations attributing responsibility to others. Through a stroke of serendipity, a member of the project team had permission to access Exo Serve (the system where all the MPRNs are registered). That meant the team was able to speed up the initial part of the process. Future projects would need to make sure this step was accounted for in delivery timeframes.

Energy suppliers were then quoting up to 3 months or more for getting a meter installed. Had the team had to rely on this to get the necessary gas meters installed, the WHD Industry Initiatives delivery deadline would have passed before the installations could be completed. Instead, a company called Citrus Energy was identified who, as part of their energy advice and switching service, are able to secure first time gas meter installations by comparing deals and installation timeframes between different suppliers. Bringing an external partner on board meant that the project was then able to secure a turnaround time of 10 days to get gas meters fitted. If working in this way meant that the household wasn't able to get the best energy deal on the market, the team would later switch them once their meter and new system was installed.

Logistical challenges and barriers to delivery

The reality of engaging and retaining the participation of extremely vulnerable clients is complex and expensive, to deliver due to the need for in-depth face-to-face support which takes individual needs and requirements into account. Whilst vulnerable tenants were keen to sign up to the project, some private landlords refused permission. Some landlords agreed to the works in principle, but delayed signing relevant paperwork, jeopardizing the potential for their tenant to receive support through the scheme.

Some properties recruited into the project had previously received a gas connection through the FPNES as part of the DECC Central Heating Fund (CHF). Despite the GDN receiving assurances that the complementary gas central heating system would be installed, therefore complying with their obligation, the commitments made under the CHF to install a gas central heating system were subsequently not fulfilled in some cases. The GDN identified and made the project team aware of the challenge and opportunity for the Connecting Homes for Health project to support these households by bringing alternative funding (in this case through WHD) to support the gas central heating installations. Despite the positive outcome in this instance, this points to an apparent policy misalignment between the FPNES and funding streams like the former CHF or WHD II. This misalignment may have resulted from restrictive delivery timeframes and/or the consequences of stop-start funding streams for the provision of energy efficiency measures.

Scheme recruitment can be most successful during the winter period. Given that Warm Home Discount Industry Initiatives projects need to be completed by the 31st of March, this means there is a discrepancy between periods of high recruitment and required delivery timescales. Where the local authorities do not have a published ECO-Flex declaration, households vulnerable to cold-related ill health may not be eligible for support under the FPNES through the general FPNES/Fuel Poverty Assessment route (but who met project eligibility criteria).

The team were unable to identify official minimum energy efficiency installation quality standards, and so produced an installation checklist that installers had to use to ensure works were carried out to the highest of standards. Installers were told that the quality of installation in every property would be checked, and before and after photos were provided for works carried out. Similarly, after some households experienced leaks and burst pipes within their existing pipework once their new system was up and running, installers were further required to run tests more efficiently and effectively once they finished a job. It was also important to work with installers who understood or were able to be flexible in relation to the vulnerabilities of households. Taking these lessons learned into account, the following table outlines practical recommendations for project managers and organisations such as energy suppliers and gas distribution networks looking to deliver gas grid connection and energy efficiency support projects to vulnerable households at risk of fuel poverty and cold-related ill health. It also outlines a series of policy-based recommendations that would be necessary to enable and facilitate the future replicability of schemes like the Connecting Homes for Health pilot, in order to address cold-related health inequalities arising from the experience of fuel poverty.

RECOMMENDATIONS FOR REPLICATING CONNECTING HOMES FOR HEALTH PATHWAYS

Practical recommendations for scheme delivery organisations and commissioning bodies	
Designing schemes to address cold-related health inequalities	Following the public health concept of proportional universalism in tackling health inequalities (such as ill-health resulting from cold homes), project eligibility criteria should be set in such a way as to target the most vulnerable households in society whilst retaining some capacity for flexibility where individual cases require it.
	Project commissioners and delivery teams should make use of existing, publicly available data sets to identify local hotspots that demonstrate the most need across multiple vulnerability metrics. This might involve overlaying data on fuel poverty and deprivation at LSOA level, Public Health Outcomes Framework (PHOF) or Quality Outcomes Framework (QOF) performance at GP practice level, and property- or LSOA-level energy efficiency data, for example.
Ensuring your scheme can engage those who are most in need of, and most likely to benefit from, support	If future projects are to engage and support the most vulnerable households, and avoid 'cherry picking' the 'lower hanging fruit' (households that are most responsive and easiest to engage), adequate provision needs to be built in to projects to ensure staff will have the time, resource and flexibility that is required to do so. This must include the facility for staff to provide face-to-face and detailed support to households at each stage of delivery. Creative engagement methods that acknowledge and take into account complex vulnerabilities will be required if recruitment within target areas identified through preliminary mapping exercises is to be successful.
	Future projects should consider the use of crisis funds to support households with additional needs (such as hoarders and those unable to move furniture etc.) due to mobility issues or other health problems. The cost of staff time to manage this project needs to be incorporated into project budgets.
	Offer to collect evidence from participants in multiple formats from the start of a project, making explicit the variety of options available to them, including home visits. Consider how health-based eligibility criteria should take into account trips to the doctor or everyday complaints and be flexible in how a 'health condition' is classified when identifying and recruiting scheme participants.

Practical recommendations for scheme delivery organisations and commissioning bodies	
Understanding partner roles prior to delivery commencement	The use of project management software works best and most efficiently when all project delivery partners use it as their main tool for managing delivery and recording information. As such, training for all relevant staff members is recommended at project outset, to ensure a consistent approach to delivery and information management across all partners. The delivery experience of households can be further enhanced when there is one body helps coordinates activity and interaction with clients.
	Before project commencement, there needs to be a clear understanding by each partner of what their role in the project will require. Each partner needs to not only identify and brief internal pathways, processes and staff members that are relevant to this, but should also brief each project partner with the information. Silent partners (who are not part of a consortium but nevertheless required for elements of delivery) should also be identified, engaged and briefed prior to project commencement , with any relevant paperwork put in place from the start (such as data-sharing agreements).
	At project planning stage, all partners with a role in the delivery process (including commissioning partners) should brief relevant internal teams and account for the project when carrying out relevant capacity planning. Other project partners should be fully informed of the teams and contacts with whom they should liaise and advise of any limitations on capacity or internal processes that could affect delivery within the required timescale as soon as possible, and take/facilitate suitable action to mitigate their impact on the project.
Ensuring smooth delivery of works	GDNs should consider adding in a section on their portals for landlord contact details whereby the tenant gives the GDN permission to contact the landlord on their behalf, for purposes of the connection.
	The staff time to manage the process of laying mains gas pipework for hard-to-connect properties, as well as direct costs associated with legal requirements, should be incorporated into future project budgets. This is a necessary step in ensuring vulnerable customers with additional needs are able to complete a gas connection customer journey.
	Appropriate quality standards and quality assurance procedures for installation works in homes should be identified and set-out prior to delivery commencement and all installation partners should be made aware of (and agree to comply with) both the standard and the procedures.
	Identifying and understanding vulnerability training for installers before project commencement should be considered.

Policy recommendations to enable future replication of Connecting Homes for Health pathways	
UK Government	First-time central heating support can make an enormous difference to the lives of vulnerable households in or at risk of fuel poverty and cold-related ill health. Benefits such as those evidenced within this report should not be discounted when considering wider policy interventions to decarbonise and/or improve air quality.
	To ensure vulnerable customers at risk of fuel poverty and other forms of deprivation have access to a range of energy-related support that will increase their financial and energy-related resilience, the UK Government should urgently clarify that they intend for the WHD to continue to be available past April 2021 , helping to mitigate the current uncertainty surrounding the scheme. The UK Government should also ensure that the next iteration of WHD continues provision for industry initiatives with an increased permitted level of spending for these activities.
	The UK Government should ensure that all licenced suppliers (i.e. with >50,000 customer accounts) are required to provide all elements of the WHD , thus increasing the scope of the scheme to address energy-related and financial vulnerability across a larger number of customers who are in or at risk of fuel poverty.
	BEIS should consider how definitions of fuel poverty designed to measure progress against national strategies and targets can be translated into a useful tool or guidance for judging scheme eligibility criteria at a practical local level , in ways which take individual household needs, composition and situations into account.
	BEIS and MHCLG must investigate the compliance rates of the PRS MEES and identify how this can be maximised , so that no households misses out on crucial energy efficiency improvements. BEIS and MHCLG should also consider how to encourage landlords who minimally comply with MEES to support vulnerable tenants in going beyond the minimum energy efficiency requirement for their property where the potential for benefit to tenant health and wellbeing is identified.
UK Government and Public Health England (PHE)	BEIS and Public Health England should consider how guidance for the targeting of health-based affordable warmth schemes can be developed using existing evidence and public health theory so as to marry up the need to prevent future ill health with the need to address existing health inequalities.
UK Government and Ofgem	Ofgem and BEIS should consider the production of minimum energy efficiency installation quality standards for schemes offering support to vulnerable households.
	Ofgem and BEIS should consider ways that future projects and funding streams can cover the shortfall between discounts provided through FPNES, variations in local authority ECO-Flex eligibility, and the cost of a gas connection for fuel-poor households.
	Ofgem and the UK Government should consider how different energy efficiency funding streams, including the FPNES, WHD II and any future national energy efficiency schemes can be more effectively aligned to ensure households receive the full package of support available. They should ensure obligated companies are able to meet the requirements placed upon them to the best of their ability. Ofgem must also ensure that FPNES targets in RIIO GD2 are stretching, allowing for more fuel poor households to obtain a gas connection that could significantly reduce their fuel bill and/or increase their level of comfort.

Policy recommendations to enable future replication of Connecting Homes for Health pathways	
Ofgem	Suppliers delivering WHD Industry Initiatives must continue to work together with appropriate agencies to make sure fuel poverty support services can offer energy efficiency measures alongside a holistic advice package aimed at improving energy-related financial resilience, accessing energy efficiency advice and improving energy-related capabilities. Support provision should allow the incorporation of debt relief, crisis and hardship funding for clients in need, where appropriate.
	Ofgem should consider developing a framework for gas grid connection procedures which enable the health impacts of living in a cold home to be addressed, including the adoption of health-based eligibility criteria for the Fuel Poor Network Extension Scheme (FPNES) following the end of the current RIIO-GD1 price control mechanism in 2021.
Ofgem, energy suppliers and GDNs	WHD Industry Initiatives schemes should trial and reflect inclusive design principles for service delivery that can address the multiple advice and support needs of vulnerable clients, alleviate fuel poverty and reduce health inequalities, bringing significant added value to the WHD scheme.
	Ofgem and energy suppliers should work to ensure that required WHD II timeframes for delivery reflect the most appropriate timescale for the delivery of support to extremely vulnerable households , especially where schemes aim to reduce local health inequalities and alleviate fuel poverty.
	Ofgem and GDNs should work to ensure that the new “use it or lose it allowance” in RIIO GD2 is effectively deployed to alleviate fuel poverty and reduce health inequalities amongst vulnerable energy customers.

Potential wider benefits of the Connecting Homes for Health pilot scheme to UK plc

Existing evidence of the financial impact of energy efficiency support	The cost-savings potential of the Connecting Homes for Health Scheme
Cost-savings of tackling cold-related ill health	
<p>In 2016 the BRE estimated that the overall cost to the NHS of poor housing containing category 1 hazards is £1.4bn, with costs to society which includes the medical costs plus, for example, lost education and employment opportunities of £18.6bn¹. The BRE also found that if all of the English housing stock with a SAP below the historic average of 41 was to be brought up to at least the current average of 51 through heating and insulation improvements, the health cost-benefit to the NHS would be some £750 million per annum². Stafford has calculated that the costs of cold homes to the NHS for: cardiovascular disease was £3,124 per case; for respiratory illness, £4,359; for falls, £2,453 per case; for common mental disorders (CMD), £1,543. These figures demonstrate the potentially substantial costs to the NHS per case of cold-related ill health³. Evaluation of the Warm At Home Programme by Sheffield Hallam estimated that the programme had led to 121.8 Quality Adjusted Life Years (QALYs – 1 QALY = 1 year of life in perfect health). This was the equivalent of around £2,436,000 in additional benefits.⁴</p>	<p>Connecting Homes for Health households displayed a high risk of suffering from cold-related ill health and there was often more than health condition present in each household. Results indicate that the scheme was successful in significantly alleviating the physical and mental health impacts of living in a cold home for participant households, as well as improving their ability to cope with existing illness. For example, before intervention, 13.7% rated physical health as either good or very good. Afterwards, 74.4% did so. Similarly, before intervention, 37% rated mental health as good or very good. Afterwards, 78.6% did so. Although 82.7% said physical health was affected by cold at home pre-intervention, only 7.2% felt so afterwards. Before, 48% said mental health was affected by cold at home, whereas after the intervention only 4.8% felt so. Improvements continued to be seen up to a year after households had received support, suggesting that the health-related accrue and endure over time. The dramatic self-reported improvements to health post-intervention give an indication of the extent of financial benefits that could accrue to the NHS and to wider society as a result of such support.</p>
Wider benefits of tackling household debt and increasing personal financial resilience	
<p>Bad debt impacts energy suppliers - increasing the likelihood of supplier failure and overall increasing costs for customers, including those who suffer the debt, adding to the debt cycle⁵. If significant utility debt persists, it will impact on the whole economy, putting a downward pressure on households spending on local goods and local businesses. We have bitter experience of how household debt can negatively impact on the economy via the financial sector.</p>	<p>The Connecting Homes for Health project either made energy bills more affordable or at least did not increase bills for a large proportion of participant households. Reduced or stable energy costs, improved access to dependable and controllable heat, and increased predictability of payments combined to result in positive financial outcomes for participants. For example, before receiving support, 69.9% of participating households found it hard to afford their energy bills. After participating in the scheme, 77.8% found it easy. Similarly, whilst only 35.4% felt their energy bills were manageable pre-intervention, 76.8% did so afterwards. Although only 34% felt that their household budget was manageable before support, 67.4% felt that it was manageable afterwards. Not only does this indicate that households were more able to afford their energy (thereby reducing the likelihood that they would fall into fuel debt), but that the financial resilience and spending power of the household was increased.</p>

1 Roys, M., Nichol S., Garrett, H, and Margoles, S. (2016) The full cost of poor housing.

2 Nichol S., Roys M., Davidson M., Ormandy D., and Ambrose P. (2010) Quantifying the cost of poor housing in England

3 Stafford, B., 2014, The social cost of cold homes in an English city: developing a transferable policy tool, Journal of Public Health Vol.37(2): 251-257

4 Sheffield Hallam University, 2016, Warm, Safe and Well: The Evaluation of the Warm at Home Programme, Centre for Regional Economic and Social

Research

5 https://www.ofgem.gov.uk/system/files/docs/2018/09/appendix_6_-_operating_costs.pdf

	<p>Participants were using more energy (before, 74.2% were rationing their use of central heating at home. This reduced to 51.9% after. Households going without electricity because they could not afford top-up their PPM decreased from 25.4% before to 12.9% after intervention. Before, 81.9% were heating fewer rooms to save money. After, this had reduced to 27.9%. Finally, prior to receiving support, 66.3% were not buying essentials (like food) so they could pay household bills. After: this reduced to 32.5%. It is likely that such increases in household spending power and alleviation of financial pressure had a positive impact on economic spending both locally and in terms of energy supply.</p>
Contributing to the Fuel Poverty Strategy for England	
<p>The Fuel Poverty Strategy for England (2015) sets a target to “ensure that as many fuel poor households as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030”.⁶ The strategy states that this target is “in line with the activity required to improve the energy efficiency of the wider housing stock in order to meet our carbon budgets”. Households that are off the gas grid are 1.5 times more at risk of fuel poverty than those with a gas mains connection, and housing which would be considered hard-to-treat (HTT) accounts for 62millionMt of CO2 emissions each year (the housing stock as a whole accounts for 123millionMt of CO2). HTT properties represent 42% of the housing stock, but account for over half of domestic sector CO2 emissions. Importantly, 72% of the HTT housing stock is off the gas network and comprises dwellings with solid walls.⁷</p>	<p>Through the Connecting Homes for Health project, participants were able to more effectively, efficiently and affordably heat their homes to the required level for comfort and wellbeing. For example, before intervention, 75.7% of participants were either unsatisfied or very unsatisfied with the temperature in their home. One year after, 100% were satisfied or very satisfied. Only a fifth (20.6%) were satisfied with how well their house kept the heat in preintervention. Post-intervention, 85.9% were satisfied. Before intervention, 93.1% of Connecting Homes for Health participants were in subjective fuel poverty. Following the intervention, this had been reduced to 4.9%. Such dramatic improvements to the thermal comfort experienced by participants as a result of reduced costs and improved energy efficiency at home indicate the potential for the project to have both improved property SAP ratings and reduce the risk of HHSRS Category 1 hazards for excess cold indicates the potential of the project to contribute towards meeting the targets set out in the Fuel Poverty Strategy for England (2015)</p>

⁶ HM Government, 2015, Cutting the Cost of Keeping Warm: A fuel poverty strategy for England. Available: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/408644/cutting_the_cost_of_keeping_warm.pdf [Accessed 03/11/2016]

⁷ Rural Services Network for the Commission for Rural Communities (2010) Understanding the real depth and impact of fuel poverty in rural England.



CONNECTING HOMES FOR HEALTH

Executive Summary



Action for Warm Homes

NATIONAL ENERGY ACTION

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