





# Warmth for Wellbeing

# **Final Evaluation Report**

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### Acknowledgements

This report was made possible by the professionalism, commitment and enthusiasm of the Warmth for Wellbeing project partners, project coordinators and frontline staff. In particular we would like to thank the Money Advice Service, St Luke's Advice Centre and Brighton and Hove Energy Services Co-operative who not only worked tirelessly with households in the City, but also agreed to speak with citizens living in cold homes, to ask if the project had resulted in any significant change in their circumstances. Our thanks go to them for putting so much time and thought into collecting and analysing Warmth for Wellbeing client stories.

Our involvement in this project came about due to the courage and foresight of project coordinators Emily Ballantyne (Citizens Advice) and Paul Bramwell (Independent Consultant). They were concerned that, in practice, conventional mental health and quality of life measurement tools (questionnaires) did not capture the key issues facing their clients and at times, were not ethical to use in the context of home visits or one-off advice. Frontline staff had described how entering someone's home in order to look around and ask questions about house repairs, heating systems, bills and personal finances required significant skill in relationship building. Proceeding to ask people questions designed to identify 'degree of mental health crisis' in this context was experienced as 'a step too far'. Relating household circumstances directly to questions on whether or not individuals felt 'close to other people' or 'optimistic about life', frequently caused distress, which in turn affected the wellbeing of frontline advisers.

This method of data collection was quickly stopped and the project coordinators accepted an invitation to present their experiences to an audience of voluntary and community sector professionals, commissioners and funders at a symposium organised by the 'Monitoring, Evaluation and Impact Partnership' <a href="http://blogs.brighton.ac.uk/meicommunity/">http://blogs.brighton.ac.uk/meicommunity/</a> which took place in Brighton in September 2016. This event was held in conjunction with an Economic and Social Research Council (ESRC) seminar series entitled 'New practices for New Publics' <a href="http://blogs.brighton.ac.uk/newpracticesfornewpublics/">http://blogs.brighton.ac.uk/newpracticesfornewpublics/</a> in which both Catherine and I were engaged. We agreed to work with the group to develop a different approach to developing and sharing knowledge of 'what works'.

We are also grateful for the valuable feedback and advice we received on early drafts of this report from Brighton and Hove Clinical Commissioning Group and Brighton and Hove City Council's Housing Strategy and Development Department. We hope we will all look back on this as the beginning of a long and sustained, city-wide collaboration between community organisations, key public institutions and citizens to address the challenging issues raised in this report.

Our biggest thanks are reserved for the people whose voices the contributors to this report have tried to make heard. Thank you to the 25 residents of Brighton and Hove who offered their stories. We will report back to you and share our own 'most significant change' stories to show you how your stories have made a difference to fuel poverty intervention in Brighton and Hove.

Graphic design provided by Little Seed Ethical Design: littleseeddesign.com



### **Executive Summary**

- 1. Warmth for Wellbeing (W4W) was a short-term (15 month), fuel poverty intervention project funded by British Gas Energy Trust as part of its Healthy Homes programme. Funding for the project (£395,158) was successfully acquired by Citizens Advice (CA) who are the lead partner and have coordinated the project since it began in November 2015. Supported by Brighton & Hove City Council (BHCC) and Brighton & Hove Clinical Commissioning Group (B&H CCG), the project involves 13 partners from the voluntary and community sectors, including social enterprises, charities and co-operatives.
- 2. The Universities of Brighton and Sussex were asked to provide an independent evaluation of the project. In support of this they facilitated a process of qualitative, narrative-based data collection or 'story collection' using the 'most significant change' (MSC) method. Data collection was undertaken by frontline project workers with clients who had experienced fuel poverty or who were otherwise 'cold in their homes'. Frontline workers met to discuss and compare stories, alongside the academic evaluators, in order to draw out key learning from the project. This evaluation combines findings from the MSC process with routinely collected project monitoring and evaluation data in order to ascertain how and to what extent the W4W design, coordination and implementation formed an effective intervention in fuel poverty in Brighton and Hove.
- **3.** The main finding of this evaluation is that the W4W project has had a significant impact on the lives of vulnerable people living in cold homes in Brighton and Hove. As of 1<sup>st</sup> March 2017, it has provided direct support to more than 555 households, offering in-depth advice to 313 people, hardship grants to 350 people and energy efficiency adaptations to 251 households. Its success is attributed to two main components of the project design and implementation: the **model of partnership working and leadership** adopted; and an **in-depth casework** and follow-up approach. A further 276 people have received advice about energy efficiency and switching energy provider and over 400 people have been given information on energy efficiency.
- **4.** The W4W partnership were effective at **developing** and **collectively implementing** measures to successfully address the issues facing people who are living in cold homes. Whilst the conditions through which fuel poverty is produced are **complex, wide-ranging and in many ways unique to each household**, there are also patterns that explain why and how it occurs and therefore what interventions will be effective. The W4W project partnership successfully mapped these patterns to intervention design and implementation throughout the project.
- 5. The partnership model and the in-depth casework approach adopted enabled: i.) attentiveness to the household-specific conditions which had led to clients being cold at home (including: poor fabric of home, issues with heating system, lack of money, debt-related problems, complex billing and tariffs) ii.) a system of cross-referral or 'signposting' enabling client access to a range of specialist knowledge, including sources of grant funding, home energy adaptation measures and further services through which issues facing households could be addressed and iii.) a working practice of following-up and 'staying with' complex cases until problems had been resolved.
- **6.** The W4W model is important because, as the project monitoring data shows, a significant proportion of clients required multiple forms of intervention in order for them to be able to heat



their home adequately. These typically involved both an energy assessment home visit and advice on personal finances also involving a visit to the home.

- 7. In-depth casework absorbed more resource than was originally anticipated. However, this is consistent with project monitoring data and client MSC stories which show that **barriers** to feeling sufficiently warm at home were **rarely singular**. They were multiple, inter-related and took time to resolve. However, this evaluation demonstrates that once barriers to ensuring people are sufficiently warm in their homes are removed clients typically experienced **multiple benefits** from **fuel poverty alleviation** that helped improve mental and physical health, and reduce social isolation (e.g. by enabling people to re-engage with friends, relatives and communities). Clients described regaining a sense of control over their domestic environment, finances and capacity to care for themselves and their dependents that fundamentally improved their wellbeing.
- **8.** Two issues remained a challenge for the W4W project. These were: i.) **identifying houses** and households that were cold or experiencing fuel poverty and ii.) maintaining similar levels of **referral** across project partners. Approaches that the project took to addressing these challenges are described in section 7. but it is in this area that sharing learning with the broader Healthy Homes programme would be beneficial. Project learning on fuel poverty 'risk factors' could prove important to future interventions, specifically in relation to establishing links between atrisk groups, fuel inefficient properties and strategies for identifying fuel poverty.
- **9.** This report provides a brief overview of the W4W project followed by a description of the evaluation method and data used. The remaining sections describe the experiences of project beneficiaries, analysing their accounts in terms of the patterns of barriers and benefits they described, wherever possible in their own words. Further work is required to cross-reference these patterns with project monitoring data and public health in order to gain insight into the extent to which the **25 clients interviewed** are representative of the people experiencing fuel poverty in the City as a whole. This would also assist in targeting interventions to those most in need.

The Universities of Brighton and Sussex will seek to remain engaged with this important issue and where possible contribute new analyses to deepen understanding of policy action to alleviate citizen experiences of being 'cold at home' in the City.





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#### 1. Introduction

Warmth for Wellbeing (W4W) was a short-term (15 month), pilot fuel poverty intervention project funded by British Gas Energy Trust as part of its Healthy Homes programme. Funding for the project (£395,158) was successfully applied for by the Citizens Advice (CA) who are the lead partner and have coordinated the project since it began in November 2015. Supported by Brighton & Hove City Council (BHCC) and Brighton & Hove Clinical Commissioning Group (B&H CCG), the project involves 13 partners from the voluntary and community sectors, including social enterprises, charities and co-operatives.

The Universities of Brighton and Sussex were asked to provide an independent evaluation of the project. There is already good evidence of the health and wellbeing benefits that can follow from interventions to make people warmer at home (Maidment et al. 2014; NICE 2015). This evaluation was therefore focused on how the particular interventions offered through the W4W project engaged clients and the effects these engagements had on people's lives. In support of this, the academic evaluators facilitated a process of qualitative, narrative-based data collection – or 'story collection' – using the 'most significant change' (MSC) method. This evaluation combines findings from the MSC process with routinely collected project monitoring and evaluation data in order to ascertain to what extent the W4W design, coordination and implementation formed an effective intervention in fuel poverty in Brighton and Hove.

In England, the indicator used to measure fuel poverty is the Low Income High Costs (LIHC) indicator (Hills 2012). According to this measure, a household is considered to be fuel poor if:

- they have required fuel costs that are above average (the national median level)
- were they to spend that amount, they would be left with a residual income below the official poverty line

In this report, we refer to households that are fuel poor and to 'people who are cold in their homes'. This is to account for those households who were not fuel poor according to the above definition but who, for other reasons, had become unable to resolve the often complex issues associated with house and heating system repairs and/or negotiations with landlords, energy supply and loan companies. In practice, the W4W partnership took 'being cold at home', rather than the technical definition of fuel poverty, as the point of departure for offering households access to a range of possible interventions.

There were 319 excess winter deaths between 2012/3 and 2014/5 in Brighton and Hove (Public Health England 2016) that can be attributed to cold homes. According to Public Health England 12.3% of households in Brighton and Hove are currently in Fuel Poverty, which is approximately 15,459 households across the City. Since November 2015, the W4W project reached 555 households living in cold homes, offering them in-depth advice, hardship grants and energy efficiency adaptations. Many of these interventions, especially those relating to energy efficiency, will have ongoing effects in making homes easier to keep warm, whilst others offered immediate assistance to people who were struggling to pay energy bills and manage debt. The success of the project is attributed to two main components: the **model of partnership** working adopted; and an **in-depth casework** and follow-up approach.



In the rest of the report we first explain the evaluation methodology before providing an overview of the project design and implementation. We then use stories collected from clients of the project by frontline staff to discuss clients' experiences of fuel poverty and the W4W project. We go on to combine this qualitative data with quantitative data routinely collected as part of project monitoring processes in order to describe the 'patterns of barriers' to being warm at home, and the benefits that can result from becoming warmer. Finally we discuss some of the challenges the project faced and plans for the future.



Rotten window frame



Ill-fitting draughty door



Mould growing on ceiling



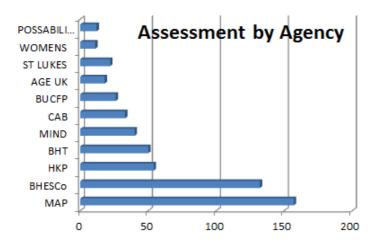
Ill-fitting draughty door

### 2. Project Design and Implementation

Based on knowledge about the multi-dimensional causes of fuel poverty - including both low incomes and hard-to-heat homes - the W4W project was designed to offer a range of interventions to individuals and households who were referred into the scheme by different partner organisations, or else accessed the project directly using a free phone number. Partner organisations included those already offering housing, debt and benefit advice (Money Advice Plus, Citizens Advice, St Luke's Advice Service, Brighton Housing Trust and Possability People) and those in the community energy sector (BHESCo and National Energy Action) as well as organisations working in a more holistic way with specific groups in the city who are known to be more vulnerable to fuel poverty such as disabled people, older people and families on a low income (Age UK, British Red Cross, Mind, Hangleton & Knoll Project, Brighton Women's Centre and Brighton Unemployed Centre Families Project).

All partner organisations could refer people into the programme (see Figure 1 for chart of initial assessments) and offer interventions that were specific to their expertise. Clients could receive one or more interventions, ranging from individual financial advice (by phone or in person), advice on energy saving and heating their home efficiently, home energy efficiency interventions and/or hardship grants. In addition, the project offered fuel poverty awareness training, access to an e-learning package and warm packs. Having a project structure that enabled cross-referral was an important component of the partnership working enabled by the programme (see Figure 2 flowchart of assessment, referral and allocation in the project), and as a design is supported by previous research (e.g. Snell et al. 2015).

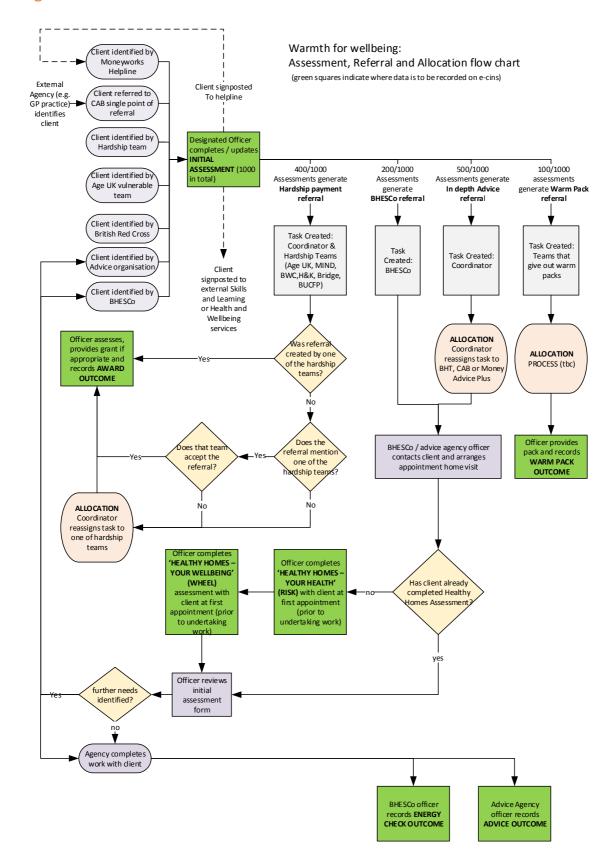
Figure 1:
Number of initial assessments by W4W partner organisations





9

#### Figure 2





Strategies for identifying potentially cold or fuel poor households included focusing on people with specific health needs and working in partnership with healthcare organisations as well as those already named as partners. Project staff worked with GP surgeries to generate a list of patients categorised according to a risk stratification tool, who were contacted by the W4W project team. Leaflets were distributed to temporary accommodation, local authority service desks, flu vaccination clinics and local hospitals. This was in addition to targeting food banks and other points of contact with people living with poverty.

Building on the experience of partner organisations who offer debt and housing advice, the project encouraged in-depth case work with clients, offering face-to-face advice on several occasions, with follow-up phone calls if necessary, as well as support with forms, making contact with other agencies, phone calls to energy suppliers and energy efficiency adaptations to the home. Hardship payments helped engage households with this process by offering them something tangible early on in the process. Though debt advice was available over the telephone, and through existing drop-in advice sessions, going to people's homes allowed for issues about housing fabric, heating systems and energy practices to be addressed in situ and in detail, and for people who were housebound to be reached. Clients were offered specific technologies to help with energy efficiency, including LED bulbs that use less energy, and radiator reflectors or draught excluders. They could also get energy monitors which allowed them to track and understand energy use across the household and over time. Visits from BHESCo case workers also resulted in helping people become registered on the Priority Service Register or move from a pre-payment or 'key' meter to a credit meter. In many cases clients were also supported to switch from inappropriate energy tariffs, switch providers to get cheaper energy and/or access Warm Home Discounts.

Given the high-level of partnership working, the complexity of fuel poverty itself and the need for correspondingly complex interventions a high level of competency was required in the coordination and management of activities. This was in evidence from the two project coordinators and was a distinct strength of the project. In addition, the project was supported by use of a shared database of clients (ECINS) offering up-to-date information on communications, contacts and referrals. Although not straightforward to implement, the ECINS system benefitted the project by supporting a sense of the client base as shared and affording immediate access to referral information, client history and most recent contacts.





#### 3. Evaluation Method

Three sets of data were drawn upon for this evaluation: 1) self-reported monitoring data collected by W4W partners over the course of the project accessed via the central project database 2) interviews with 4 members from the partner group responsible for conducting energy assessments in people's homes 3) client narratives (collected by frontline workers) of changes they experienced as a result of project interventions.

The client narratives were generated using the 'Most Significant Change' technique of data collection. This method was selected as an alternative to more structured approaches to collecting outcomes data which tend to replicate a siloed approach to understanding the effects of fuel poverty. Using a narrative approach enabled clients to describe 1) their situation before they engaged with the W4W partnership, 2) the specific barriers they experienced to being warm at home, 3) how W4W interventions had supported them to overcome those barriers and finally 4) the most significant changes for them as a result of the intervention.

The MSC technique requires frontline project workers to formulate up to a maximum of 3 questions using the following format:

'Looking back over the time since your first contact with us in [month and year of first contact], in your opinion, what do you think was the most significant change in....?'

The W4W partnership frontline advisers developed 3 versions of this question that asked clients to think about changes to 1) 'your home' (or 'where you are living' if temporary accommodation) 2) 'in yourself' (and 'for those you live with', if sharing accommodation), and 3) 'in what you do outside the house'?

Using a 'story collection form,' which included a discussion of consent, story use and anonymity, 25 stories were collected. These were then collectively analysed at a 'story coding workshop' attended by frontline staff, project coordinators and academic evaluators at which attendees took a small number of stories and annotated them, marking up key issues arising from the text and grouping these together under headings. The issues and headings were then compared during a whole group discussion and a common set of headings was agreed on. These headings or 'codes' were then used to annotate a second set of stories and again coding choices were discussed to check they remained relevant and where necessary add in any new or emerging issues. The list of codes was re-visited and refined throughout the workshop but stabilised around the following key categories: money; physical health; mental health; social activities and relationships.

During the MSC story collection process clients were specifically asked to speak in their own words about the changes they had experienced and frontline staff were asked to write down the stories in the client's own voice (in the first person). The stories offer insights into: the specific and often inter-related causes of fuel poverty and being cold at home; the interventions offered by the W4W partnership; and the concrete effects these had. Analysis of the 'patterns of causes' described by W4W clients, places monitoring data in a more informed context, enabling us to see for example, the context within which the W4W interventions were experienced, how health and other benefits evolved and what helped or hindered people in achieving warmer homes.



The secondary analysis of data carried out by the two universities was granted ethical approval by the University of Brighton's, School of Applied Social Science, Tier 1 Ethics Panel.

### 4. Most Significant Change stories

The opportunity sample of 25 stories collected from W4W clients describe how fuel poverty and being cold at home become a reality via a range of inter-connected issues - affecting people's homes, health, families, social lives and financial situations - that often converge around a specific event or time period. W4W partners recognised that these areas of life are fundamentally inter-related and together act as a foundation that can support (or hinder) people's capacity to make positive changes in their lives. Strengthening and stabilising this foundation makes challenges easier to contend with and in some cases can create opportunities for aspirational and life enhancing experiences. The in-depth casework and close partnership working between home energy assessment and personal finance advice partners was particularly effective at enabling clients to address diverse but inter-related concerns and stabilise specific aspects of their lives. This is in evidence in the MSC stories offered by clients who, for example, reported:

**Story 7:** BHESCo and Money Advice Plus have both helped me tremendously with my financial situation and this has given me peace-of-mind. BHESCo were really patient and spent ages negotiating with the energy company to help me organise my debts and have drastically reduced what I was paying for energy, which was a huge relief.

Clients described home energy assessments and practical interventions that accompanied these as educational and as producing substantive changes in their circumstances that could be potentially sustained.

Story 5: [The BHESCo adviser] helped me to change my energy supplier to one which is more economical. He also fitted radiator reflector panels to improve the heating, he assessed my energy use and talked through different ways I could keep the cost of energy down. He brought some LED energy saving lights and fitted them in. He also helped me to figure out the mobile heating / hot water programmer which I haven't been able to work out on my own.

It should be noted that energy assessment visits and subsequent face-to-face and telephone follow-up support from the W4W energy services project partner BHESCo were recognised by clients and project partners alike as being a cornerstone of the project's success. In the story above, the client describes the BHESCo adviser as visiting them at their property on at least 4 occasions. BHESCo advisers provided an engaged, supportive and solution-focused service on issues that could be both technically and bureaucratically complicated, and where sensitivities associated with 'walking around people's homes' and potentially witnessing difficult living conditions were treated with both compassion and efficacy. In contrast with other advice and support services offered in this field, this level of 'care' from an energy service provider stands out as being in distinct contrast with how people are 'normally treated'.

As well as material interventions in housing infrastructure and heating systems BHESCo also supported clients in their negotiations with two sets of relationships that were key to altering



conditions that were creating fuel poverty. These were: relationships with landlords; and relationships with energy supply companies.

Story 16: Then BHESCo came and visited. They were brilliant! They discovered that there was an unauthorised debt on my meter; not a real debt but an estimated debt and they [energy supply company] were taking £8 every time I charged the card. I was putting loads of money on the card and couldn't understand why it wasn't lasting. They were able to get that refunded and cancel the debt on the card.

Of equal importance to stabilising clients' situations and supporting their ongoing capacity to pay bills was the casework they received from W4W debt and financial advice services. Supporting clients to access forms of financial support that they were entitled to and helping restructure personal finances were reported by clients as being of tremendous significance.

**Story 5:** Jill came to my home on about 3 occasions. She helped me complete various outstanding forms to the Council and to apply for PIP [Personal Independence Payment]. She was extremely helpful to me and I felt greatly supported by her at a very difficult time.

The hardship grants were also recognised as important to addressing immediate financial concerns in a way that gave clients 'the chance to think' what to do next to improve their situation.

MSC Story 15: The hardship payment allowed me to put money on my gas card to pay for gas. This had a huge impact. Not having hot water had been quite demoralising and was affecting my mental health as well as impacting my physical health.

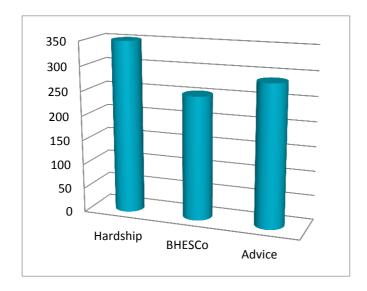


BHESCo installing radiator reflector panel



Figure 3 is based on monitoring data showing the number and type of intervention received and offers an indication of the extent to which interventions for the 555 clients supported were used in combination with each other.

Figure 3
Number and type of intervention (total interventions n=888)



It is important to note that not all clients associated the support provided by the W4W with the aim of achieving warmer homes. For a small number, benefits advice, debt advice and housing advice were of such fundamental importance to addressing their immediate needs that these issues dominated their MSC stories. However, the majority of clients recognised these interventions as collectively contributing to the alleviation of fuel poverty and saw the interrelationship between: homes that are hard to heat; financial difficulties; and consequences for their mental and physical health.

MSC Story 7: the support from the W4W project gives me the strength to carry on and the help, advice on energy, financial support to service my hot water system, health and benefit entitlement has been invaluable. I can manage my life a lot better than I would without it.

Whilst debt and benefit advice services are more established, the role of 'energy service advocate' is less well-recognised but this role and its significance emerges strongly from the W4W project evaluation. However, it should be noted that advice services are subject to public funding cuts and are rapidly diminishing in range and number.

The following section explores the barriers experienced by clients in more detail.



#### 5. Patterns of barriers

There was rarely a single reason why people were experiencing fuel poverty or living in cold homes and this had implications both for the intervention required and the benefits achieved. Barriers to being warm at home had typically accumulated over time, with underlying issues growing in number, range and complexity until they were experienced as insurmountable. This was not simply a question of individual circumstance or perception; the issues involved would be experienced by anyone as bureaucratically, technically and materially complicated. Recent reports have emphasised the contribution of low incomes and hard-to-heat homes (Hills report, 2012). However, the conditions creating fuel poverty also include, the physical fabric and condition of the home (e.g. single glazing, solid wall construction), heating systems and technologies (fan and storage heaters, lack of gas), unstable as well as low incomes (including those resulting from benefits sanctions or cuts), and inappropriate tariffs and practices that led to high energy use. These were all evidenced in the evaluation (Figure 4).

People who are housebound or have mobility issues due to disability or chronic illness often have higher energy needs and are more affected by poor quality housing. For example people over 65 are estimated to spend more than 85% of their time in the home and this rises to 90% for those aged over 85 (House of Lords 2005). Many make economies on heating: in one study over a third were found not to be heating their bedroom, bathroom or living room to save money (Age Concern and Help The Aged 2009), though older people are also diverse, and may have different needs and coping strategies (Day 2015). Disabled people may also have higher energy needs (Snell et al 2015).



Figure 4: Diagram showing barriers to warm homes

#### Debt

Unemployment
Benefit sanctions and cuts

#### **Energy Supply**

Billing and tariffs
Customer service

#### **Energy use practices**

Times of day when turn on heating sources Cooking

# Household energy

home and ability to move around. Linked to disability and chronic illness, especially mental health issues.

#### **Heating system**

(capacity of heating system to generate warmth)

# Physical fabric of home

(capacity to retain warmth)

# Housing Tenure

house ownership or landlord relationship

#### **Energy Supply**

(Infrastructure)
Meters / monitors ,
type of supply

# Contractual arrangements

for repair and upkeep

The partnership model used in the W4W project enabled a diverse range of knowledge and expertise in resolving complex issues to be used in resolving client issues. In these conditions, follow-up was crucial to ensuring issues had been resolved as without a holistic approach, tangible and ongoing benefits were hard to achieve. Interventions included soft measures (e.g. debt advice, tariff switching, supplying energy saving light bulbs) and hard measures (e.g. wall insulation, ventilation, boiler repair/replacement, major draft repairs, meter changes, replacement heating system components). However, there were far fewer hard measures implemented than soft measures as Figure 6 shows. This can be attributed in part to conditions created by housing tenure.



Figure 5
Number and type of measures implemented involving energy service providers

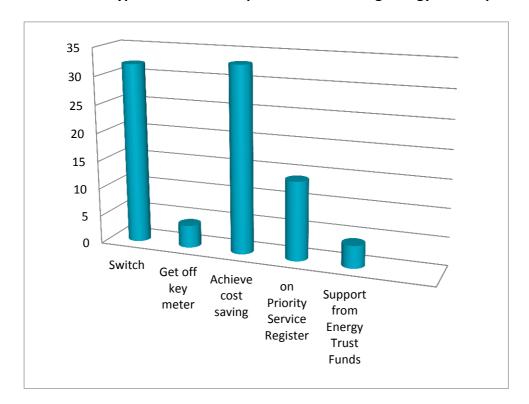
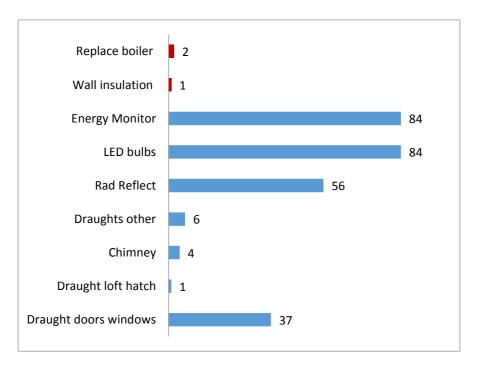


Figure 6
Number and type of energy efficiency measures implemented in people's homes (hard measures in red)



Among the W4W clients were people living in homes with very poor physical fabric, for example with cold, damp and mould covered walls which BHESCo workers sought to record (see Figures 7 and 8). Such mould is accepted as being capable of both causing and aggravating respiratory illness. Housing tenure was itself an indicator of fuel poverty with people living in private rental, council and social housing reporting poorly fitting windows and doors, along with long waits to see improvements. The link between private rented housing and increased incidence of fuel poverty is consistent with national findings (Annual Fuel Poverty Statistics Report 2016).

Figure 7:
BHESCo photograph showing damp internal wall with extensive mould



Figure 8: BHESCo photograph showing damp internal wall and ceiling



Housing tenure holds implications for the implementation of hard measures required to address fuel poverty as these have to be negotiated with Landlords. Without their co-operation or the capacity to contractually oblige them to support fuel poverty actions there will always be a limit to what can be achieved. W4W clients were encouraged to use the energy assessment reports written by BHESCo to begin a negotiation with Landlords about property maintenance and repairs. BHESCo themselves were cautious not to raise issues with Landlords directly because, in many cases, clients were concerned this would be perceived negatively by their Landlord and affect the stability of their tenure. This constitutes clear evidence that speaking out against conditions that create fuel poverty is problematic for those affected and advocacy is therefore required.

It could be assumed that social landlords would be easier to influence than private landlords with respect to the implementation of hard measures to improve hard-to-heat homes. However, as Figure 7 shows, out of 555 clients 248 were living in some form of social housing. Regrettably some serious examples of fuel poverty were found in Council managed temporary accommodation in which being cold added to the stress and anxiety of being in short term housing. In MSC Story 3, a client with a disability found it hard to negotiate with the Council to have an electricity meter moved and subsequently fell climbing to reach it. The client was living in a home where there was only one room with a single storage heater and no heating in the kitchen or bathroom. This led them to attempt to cut back on time spent cooking or washing because of the cold in those areas.

The underlying reasons for fuel poverty and hard-to-heat homes in the social housing sector need to be examined further. There are a number of key points to consider. Procurement of properties for temporary and social housing is influenced by housing availability, which in Brighton and Hove is severely limited (BHCC 2015). If contractual instruments are robust and standards clearly specified then contractual terms can be upheld, but this requires equally robust contract management. In any environment where there is a lack of supply, if contractual terms are broken, capacity to go to another supplier can be limited or non-existent and this can have consequences for contract management. The same conditions can apply to procurement of property maintenance services making the timely repair of properties (to address energy inefficiencies and prevent them from being cold) hard to achieve. Analysis of these conditions is critical to the alleviation of fuel poverty in the City and should be the focus of research and policy action.



Boiler old and inefficient

Warmth for wellbeing



However, whereas social housing tenants are not necessarily vulnerable, people accepted as homeless by the Council and assigned temporary accommodation are, which increases the level of concern felt when fuel poverty is identified in these properties. It is unacceptable to house vulnerable people in accommodation that will render them fuel poor, cold in their homes, negatively impacting their mental and physical health. Yet there were examples of this occurring. BHESCo themselves approached the City Council's temporary accommodation office with evidence of poor quality housing and fuel poverty and gained assurance that the examples would be examined more closely.

The account below comes from two W4W energy advisers who when asked, having completed 80 home visits, to describe the house in which they themselves had felt most profoundly cold described a flat offered as emergency accommodation. The following is an excerpt from the interview transcript.

**Interviewer 1:** This might be an obvious question but when you were doing visits in the colder part of the year did you walk into properties in which you felt palpably cold?

**David:** Yes.... Are you thinking of the same one?

Craig: Well, yes, it was a young lady. She was probably in her early 20s I think, wasn't she? Real mental health problems as well as physical. And she was really concerned that the poor quality of the housing – it was emergency accommodation wasn't it? Was affecting her health. She was really, really struggling.

David: And you could believe it walking in there because I could feel cold – I had my coat on and I could feel the cold and the damp, I could feel it.

**Interviewer 1:** Was there any source of heat in there or was she...?

David: No-

Craig: There was one metal plate heater-

David: Which had blown basically. Sparks had flown off it and it was basically kaput. And all she had was this pathetic convection heater which obviously was going to cost her a fortune to run that. To heat this big open block – about this size – but just one bed and a bathroom to the side and the kitchen was just there. It was like a square box – a really big square box [all 4 walls externally-facing]. So imagine trying to heat that. And then the glazing not being efficient. It was appalling, absolutely appalling.



When confronted with identified fuel poverty in temporary accommodation barriers to change should be addressed collectively and expediently. More work needs to be done to identify example cases, in order to analyse exactly where problems lie, and propose alternative solutions. It should be noted that to a large extent these are endemic issues that affect local authorities across the country. We turn to these broader issues in the final section of this report.

In addition to the need to negotiate with landlords (or other contracted parties responsible for repairs), clients may also need to negotiate with energy companies and loan providers. Taking on these negotiations given a.) their complexity, b.) their cost (when conducted over the telephone), c.) the stigma associated with debt, benefits and homelessness, and in addition to d.) challenges presented by mental health, physical health and domestic violence, were themselves barriers to addressing fuel poverty. Interestingly, clients reported that seeing someone engage successfully in these negotiations acted as a form of positive role modelling that 'gave hope' and encouraged people to take action themselves.

Nevertheless, the accumulation of underlying barriers had consequences for clients' physical and mental health which added to difficulty in resolving problems. For example, in MSC Story 1, the client was on medication for back pain, high blood pressure and cardiovascular disease risk, and had mental health problems including Post-Traumatic Stress Disorder from wartime experiences. He explained how his own efforts to cope with health problems affected his energy use. "I have to have long hot showers for my back pain, usually about 15 minutes. I don't have a bath to soak in and because it is an electric shower it uses a lot of electricity to heat the element." However, lately he reported "my physical health has got a bit worse because I haven't been able to afford having the heating on too much". The flat was heat inefficient suffering from poor insulation and ill-fitting windows. "I am finding I pay more in this 1-bed flat than I ever did in my 2-bed flat, particularly my water bills. I have also had help at St Cuthman's foodbank on three occasions, but I can't get any more food for 4 weeks so my situation has got worse again." He was paying extra for gas and electricity each month to pay off debt, and was extremely grateful for hardship grants from MIND and help applying for the Warm Home Discount (from BHESCo), but "still can't afford the heating bills, so try not to turn it on very much."



Insulation of water cylinder poor



People frequently talked of not knowing that there were better tariffs available from energy suppliers before receiving advice from W4W on this and still lacking time, energy and belief in their ability to switch supplier (see also Lorenc et al 2013).

MSC Story 5 'The light bulb people [BHESCo] have put in three light bulbs and helped me change my energy supplier – this I had been wanting to do for five years.... Being ill I have many priorities, little time, much less energy and no money. I can only do one thing at a time. My priorities were all about improving my health conditions. I had more or less neglected my immediate surroundings for the last six years.'



Inefficient incandescent lightbulb

Another client, who was referred by MIND and suffering severe depression and physical pain caused by "being hit by a drunk driver" some years previously reflected that benefit advice was an "enormous help" but also that "BHESCo has done an energy company switch for me which saves me a week as my illness means I can't get my head around things like this" (MSC Story 7). Many clients did not know they could be entitled to Warm Homes Discounts based on pension credits or other (rather complex) eligibility criteria, or able to switch to tariffs that recognise the additional needs of people with disabilities. There were many other practical barriers to actually making the switch successfully (e.g. long phone calls, errors introduced in billing). For example one woman referred from the Hangleton & Knoll Project (MSC Story 6) described how previous attempts to change supplier had seemed to create extra charges and standing charges that had a very high impact as she was struggling to afford enough food.

The additional importance of very low incomes and debt in the stories of fuel poverty gathered here meant that hardship grants or energy savings might be used to pay for food, not fuel, or even pay for washing of clothing or bedding. Reductions in energy bills over the longer term were also earmarked for reducing other debts or immediate household needs, rather than achieving warmer homes. However, as we discuss in the next section this should not be read as a limitation of the project, but rather its ability to respond to the specific context in which clients struggled to



keep their homes warm. Many people telling their stories as part of the evaluation had first come into contact with the project at a food bank, and the majority of referrals came from debt advice organisations. More than 330 were in receipt of housing benefit. Though these broader problems could not be fixed by W4W alone, successful interventions around the fabric of the home, energy systems and use as well as debt could create the conditions for other problems to be addressed by clients and local services.

#### 6. Patterns of benefits

Just as barriers to being warm at home accumulated over time, the benefits that clients described from W4W were correspondingly multiple and inter-related. Relief from debt, a reduction in weekly bills and support in negotiating with banks, energy suppliers, landlords and contractors were practical interventions that brought with them a sense of relief, which in turn produced health and mental health benefits. These benefits occurred in addition to those that came directly from feeling warmer at home.

MSC Story 11: When you're in debt, it is very frightening and disempowering, and you feel like you don't know where to turn to. Having that support gave me the confidence to go to the bank, on my own which has helped me improve my credit rating. I am about £250 per month better off now – because I have fewer bank charges, no energy debt, which means I can pay off other debts I have accumulated. It's empowering because I now feel I can help myself – it is about that feeling and not just being reliant on handouts.

Based on the MSC stories and monitoring data an important finding from the evaluation is that because the conditions producing fuel poverty are multiple, the benefits of alleviation are also multiple and in many (but not all) cases create a cascade of inter-related changes in people's lives that they experience as positive.

Clients benefitted from the person-centred and longitudinal manner in which W4W partners worked. The relationship-building approach taken by partners and the interventions they made with authority figures on behalf of clients became positive examples of how, with some support, change can be brought about despite challenging circumstances.

MSC Story 21: I felt so isolated and vulnerable. Didn't have the energy to engage with people. It's very hard living with M.E. Family can be quite funny with me. I was so low on energy. You coming gave me some support. I don't feel so alone. You getting things straight makes me feel secure – I can rest and stop worrying about my tenancy. I'm more confident in my situation and I know things aren't as bad as I anticipated.

As Figure 9 shows, a high number of W4W clients had mental health problems, and/or were disabled, and/or were living with chronic illness. The health benefits felt by these clients were related to underlying health conditions, but often because being warmer and having access to sources of warmth played an important role in the coping strategies associated with being house or room-bound for periods of time and in living with chronic pain. Clients described strategies



such as switching on underfloor heating and then lying on the floor to relieve chronic joint pain, or having a warm shower or bath. Being warm was therefore closely associated with ideas of being able to self-care. Correspondingly, being cold was described as exacerbating joint pain, which in turn made cooking and cleaning difficult, and when combined with unheated water, made washing (hair, body, clothes) very challenging. This in turn affected activity levels and sociability.

MSC Story 14: Being cold I can't get up and do an activity, or sit at a table, I have to stay under a duvet. A friend may say do some artwork...but there's not that much you can do with a duvet over you and my hands are not working and I can't even hold a pencil [because of joint pain exacerbated by cold]

Social benefits were often the last to be felt, as one client said "I can say that my health has improved. I am getting there; I feel much better organised. I still don't go out much but things are better." (MSC Story 16). Another client said "I am not yet getting out and about at the moment. It takes time to get better." (MSC Story 19)

Being person-centred and allowing clients to work at their own pace enabled understanding and awareness of the causes of fuel poverty to be conveyed in a way clients could take in gradually.

MSC Story 14: This has been interesting for me. BHESCo came to my home (it's rare that people come to 'housebound' homes). And importantly it wasn't a single communication, so two visits and a couple of emails later have led to more possibilities in my mind.

Whilst some changes were comparatively straightforward to achieve others were part of a broader picture that was more difficult or slow to change. Therefore, for example, some clients reported that their home was still cold following contact with W4W but that they had learned to control and target their energy usage. Another client described how their (chronic) health condition had deteriorated but that this did not take away from the fact they were now warmer at home and therefore happier. It is for these reasons that the outcomes of fuel poverty interventions cannot be described in a straightforward 'cause' and 'effect' terms and this has implications for future evaluation.

Where clients were in a position to pass on benefits to others in their household or realise broader social benefits from being warm, these were significant. For example, one client described how having had support to address her own debts she then supported her daughter to address hers. At the end of the story she describes feeling 'like a different person' and wanting to volunteer herself to help others as she had been helped (MSC story 17).

It is important to see these examples as ideal cases rather than a target that is achievable with every client. Nonetheless, they are important indicators of what it is possible to achieve and markers of success to be attributed to the W4W in-depth casework model.



## 7. Challenges and future development

We have identified two key issues for the future development of the project. The first is around the identification of clients for referral and assessment. The second concerns the relative efficacy of interventions and combinations of interventions offered by the programme. However, there are broader issues shaping the current context for fuel poverty in England and Wales, in particular the capacity to implement hard measures to address energy inefficiency and improve the quality of housing in private rented and social housing sectors. We turn to these first before subsequently returning to questions of identification and intervention design for fuel poverty alleviation in Brighton and Hove.



BHESCo Energy efficiency measures

As previously noted, housing tenure has an instrumental effect on the degree to which people are able to implement hard measures to make their homes more energy efficient. In both social and private rented housing, the cooperation or compliance of Landlords and housing owners is required to implement hard measures. Compared to the South East average of 30% of households living in rented housing, Brighton and Hove has a total of 47.7% (NAO 2017). There are also higher than yearly average levels of homelessness in the City which puts pressure on temporary accommodation provision. There is an imbalance in the supply and demand for temporary housing whereby the number of households in temporary accommodation increased dramatically between 2009 and 2015 and is now at 13.1 households per 1000 population compared to the regional average of 4.3 households (NAO 2017) B&H was one of 25 local authorities for whom a 'radical package of measures' was introduced in 2015 by central government to tackle homelessness. However, the 'for-profit' business case with respect to temporary housing is not strong. The gap between market rent and Local Housing Allowance levels can be considerable so there is a lack of incentive for these providers. Lack of supply leaves local authorities in the difficult position of having to balance interests. Asserting contractual obligations regarding housing quality risks unsettling this balance of interests. Sources of funding previously available to the City Council such as the private sector renewal funding which helped owners and landlords improve the quality of housing no longer exist (BHCC Housing Strategy, 2015). This is in addition to wider third and public sector reductions in funding from central

government which see the City Council having to respond to a 30% cut in its net budget over the period 2015/16 to 2019/20.

The systemic and political pressures facing Local Authorities are considerable. Nonetheless, in the face of identified fuel poverty we would argue that persistent barriers to change have to be addressed and more analysis and public discussion is required to identify exactly where problems lie and what alternative solutions exist. This is particularly pressing in the case of temporary accommodation where hard-to-heat homes exacerbate the vulnerability of recently homeless individuals and families.

Moving back to questions of identification, the experience of families with young children (<5) was not a strong theme in the MSC stories, and this group made up a smaller proportion of those in the project (around 10%) than estimated in national level discussions of fuel poverty (suggested to be 20% in Hills Report 2012). One possible response would be to trial advice and/or referral through Children's Centres (an approach tried in a project by the Children's Society in Bradford, see Ayre et al. 2016). The same was true for people over 75, who made up just over 7% of referrals (this contrasts with the 10% of age 75+ proposed by Hills Report 2012). The same report also acknowledged that efforts to reach those in fuel poverty would probably require initial contact with a greater number than reported numbers suggest. There is no simple way of making these contacts although further collaborative working with services in the City, including social workers, who regularly enter people's homes could be an important strategy.

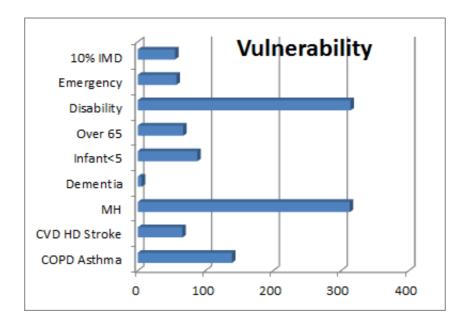
The W4W project started from the position that opportunities to reach different groups could be created through involving a range of different support organisations and health providers across the City in the referral process. However, in practice most referrals came from a relatively small sub-set of partners (see Figure 1). It is unclear whether this reflects greater levels of need among particular target groups (for example, those seeking debt advice) or whether this was a question of how the project was delivered by different partners, or indeed how different partners recorded their activities on the central database.

Initial assessments and 'signposting' to other services offered by the project were key to the project's success and it was not clear that all project partners approached these activities in the same way. Some partners may have had capacity to address client needs internally and so their clients may not appear as referrals for specific services in the monitoring data. As this evaluation is largely based on these data it is important to note these potential variations. On the whole, however, it was widely reported that having a centralised IT system to record referrals offered considerable advantages as well as data sharing and protection challenges.

Though total referrals from health providers were relatively low, interestingly, the project did reach many people with a clear health problem, including mental health, disabilities and long term conditions like CVD, asthma, (see Figure 9). These issues have been shown by previous research to be strongly associated with fuel poverty, especially mental health (Maidment et al. 2014) and disability (Snell et al. 2015). The involvement of St Luke's as a specialist advice service offering support to people with disabilities and mental health problems appeared to offer targeted recruitment, but many people accessing the project through debt or housing advice also reported mental health problems linked to stress, anxiety and previous trauma. The partners tried identifying clients via General Practice surgeries but this did not prove a successful identification strategy.



Figure 9. W4W clients with pre-specified factors making them vulnerable to fuel poverty



In the academic and policy literature there has been considerable debate about whether interventions should be targeted at 'at risk' population groups or at housing known to be thermally inefficient (Hamza and Gilroy 2011). The W4W project mixed both strategies. Yet even when going through organisations working with specific groups the experience of the project confirmed previous discussion of the very diverse needs of those with disabilities or long term physical or mental health issues (Hall et al 2013). The stories also testified to the significance of people's existing strengths and coping mechanisms. An 'asset-based' analysis of the strengths, skills and competencies demonstrated in the stories shows that people manage multiple competing demands and (up to a point) are very resilient in the face of fuel poverty (Chard and Walker 2016, Walker and Day 2012). Those who were struggling benefitted from contact with a W4W worker and from referrals to services who advise individuals / households on these kinds of issues. However, it was not possible to evaluate whether those reached by the project had the greatest problems, or whether some solutions may have been found without the project. There is likely still to be considerable invisible fuel poverty within the city: for example, the lower numbers



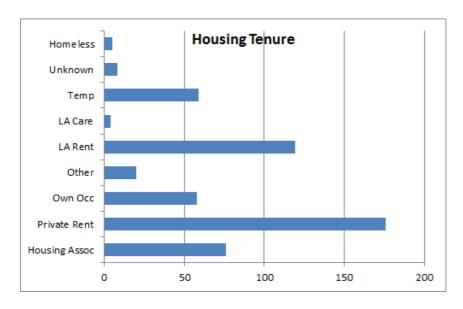
Ill-fitting and draughty window



of older people in the project than might have been predicted (Hills et al 012) may be in part a result of these people's difficulty in accessing services outside their homes.

The project also attempted to reach people in housing that might be particularly thermally inefficient, due to its general fabric or to the energy system, for example by leafleting in particular areas. For groups like BHESCo who are focused on energy interventions this might be a relatively efficient way of reaching people who could be helped by energy efficiency measures relevant to particular types of housing. There might also be scope for further targeted advice and support for tariff and supplier switching, given the considerable effect this seemed to have on many people contributing MSC stories. Similarly, pre-payment meters were a routine source of problems for W4W as they do not generate print outs or bills that can be analysed. As discussed above, it was noted that cold homes could be found in the social and council housing sector as well as private rental sector (see Figure 7). Further analysis is needed to establish whether there are specific problems in the social housing sector, when compared to the particular problems found in the private rental sector, as identified by research conducted in other UK cities (Snell et al. 2015).





The second key issue where we think more work would be helpful is around the relative efficacy of interventions and combinations of interventions offered by the programme. We have noted that in the qualitative evidence used in this report, interventions by BHESCo around energy efficiency measures, tariff and supplier switching, support in negotiating improvements in housing insulation or repairs and support with prepayment meters were particularly effective, as was debt advice and hardship payments. The combination of both interventions, supported by a conscientious and client-centred approach to making partner-to-partner referrals and engaging in follow-up, were key contributors to the project's success.

This is a particularly innovative and promising element of the project, offering a different approach to other services in the City, and creating opportunities for detailed discussions with



people about their daily practices of living, whilst avoiding some of the pressure to provide 'moral accounts' of everyday life on low incomes and the stigma surrounding poor housing. However, in-depth casework was expensive if considered as a cost per client. It might sometimes be simpler and cheaper to offer people one-off hardship payments, rather than casework, even though it was observed that payments might well be spent on food or debt relief, rather than on energy that produced warmer homes. A key question is whether the same 'cascading' benefits clients experienced, where not just one but multiple issues were improved, would occur from a one-off hardship payment. Findings suggest that it was the sustained support and advocacy received, as well as material changes to the home, which positively affected clients' wellbeing. Arguably, when taken collectively, the benefits to health, reduction in social isolation and empowerment in the face of domestic violence described in the MSC stories, may offset the costs of in-depth casework.



BHESCo draft proofing window

There were a relatively small number of hard measures implemented through the project such as roof and wall insulation or the replacement of energy efficient boilers with only 5 clients supported to access these. BHESCo were an important partner in this respect in that they had access to and knowledge of grant funds to support these measures. At this stage it is not known if the interventions made to make housing affordably warm will provide benefits for future tenants or whether 'problem properties' which are not structurally improved will continuously create conditions for fuel poverty. It might be advisable to introduce a 'watchlist' of properties in the city known to have repeatedly created conditions for fuel poverty, and give subsequent potential tenants access to this information.

There are broader questions of accountability here that have not been addressed. Clearly, many of the conditions that create fuel poverty are caused by factors over which individual citizens have little control. There is a relationship between the complexity of energy services and difficulties that citizens experience in resolving fuel poverty. There is also a relationship between the degree to which people can make changes to the fabric of the property they live in. The W4W project (via funding from BGET) has taken responsibility for resolving issues that have arisen due to deficits in housing standards and energy service provision. Given how important intervention in fuel poverty is to the wellbeing of people in the City, the question remains: how can such services be financed sustainably in the current context of reduced health and public service spending? It would seem that some of the responsibility for the conditions that create fuel poverty should be shared with those who have contributed to the creation of those conditions.

What seems clear from the complexity of the issues described by clients and from the W4W monitoring data is that, within the current model of energy provision, a need has emerged for 'energy advocates' who have specialist knowledge of household energy issues. Social enterprise organisations such as BHESCo are well-placed to meet this need as they have the organisational capacity to combine specialist knowledge of energy services with social support and advocacy. In



the W4W project it was this combination that enabled people living in fuel poverty to make progress toward overcoming barriers to being warm at home, particularly when offered alongside the equally specialist and supportive **debt advice services** offered by this project. Overall, the project team and coordinators should be commended for their excellent work in designing and delivering and effective intervention in this troubling and complex area.

#### References

Age Concern and Help The Aged 2009. *One voice. Shaping our ageing society,* London, Age Concern and Help The Aged.

Annual Fuel Poverty Statistics Report 2016: England, Department of Energy and Climate Change, 30 June 2016

Ayres, D, Capron, L., Guertler, P. and Royston, S. (2016) Warm and Informed. Evaluation and findings. The Children's Society.

http://www.childrenssociety.org.uk/sites/default/files/Warm%20and%20Informed%20-%20full%20report 0.pdf (accessed 4 March 2017).

Brighton and Hove City Council (2015) Housing Strategy. <a href="http://www.brighton-hove.gov.uk/sites/brighton-hove.gov.uk/sites

hove.gov.uk/files/Housing%20Strategy%202015%20%28FULL%20COUNCIL%20FINAL%29.pdf [Last accessed 01.03.17]

Chard, R. and Walker, G. (2016) Living with fuel poverty in older age: Coping strategies and their problematic implications. *Energy Research & Social Science*, 18: 62-70.

Clinch, J.P. and Healy, J.D. (2000) Cost-benefit analysis of domestic energy efficiency. *Energy Policy* 29:2:113-124.

Day, R. (2015) Low carbon thermal technologies in an ageing society – What are the issues? *Energy Policy*, 84: 250–256.

Hall, S.M., Hards, S. and Bulkeley, H. (2013) New approaches to energy: equity, justice and vulnerability. Introduction to the special issues, *Local Environment: the International Journal of Justice and* Sustainability 18: 4: 413-421.

Hamza, N. and Gilroy, R. (2011) The challenge to UK energy policy: an ageing population perspective on energy saving measures and consumption. *Energy Policy* 39:782:789.

Hills, J. (2012) *Getting the measure of fuel poverty. Final report of the fuel poverty review*. Centre for Analysis of Social Exclusion (Report No. 72), London School of Economics and Political Science.

House of Lords, 2005. Ageing: Scientific Aspects HM Government, London.

Lorenc, A., Pedro, L., Badesha, B., Dize, C., Fernow, I. and Dias, L. (2013) Tackling fuel poverty through facilitating energy tariff switching: a participatory action research study in vulnerable groups. *Public Health* 127: 894-901.

Maidment et al. (2014) The impact of household energy efficiency measures on health: a meta-analysis. *Energy Policy* 65: 583-593.



National Audit Office (2017) Housing in England Overview, Interactive Tool <a href="https://www.nao.org.uk/highlights/housing-in-england-overview/">https://www.nao.org.uk/highlights/housing-in-england-overview/</a>

National Institute for Clinical Excellence (2015) Excess Winter Deaths and Illness and the Health Risks of Living in Cold Homes, NICS Guideline NG6, March 2015 https://www.nice.org.uk/guidance/ng6

Public Health England. (2016) *Public Health Outcomes Framework Data Tool*. Available at http://www.phoutcomes.into

Snell, C., Bevan, M., Thomson, H. (2015) Welfare reform, disabled people and fuel poverty. *Journal of Poverty and Social Justice* 23:3: 229-244.

Walker, G and Day, R. (2012) Fuel poverty as injustice: integrating distribution, recognition and procedure in the struggle for affordable warmth. *Energy Policy*. 49: 69-75.

Willand, N., Ridley, I, Maller, C. (2015) Towards explaining the health impacts of residential energy efficiency interventions: a realist review. *Social Science and Medicine* 1-11.

