The Strategy Unit.

Keep Warm, Keep Well

Strategy Unit evaluation report for the Midlands NHS Greening Board

Final report: August 2022

NHS
Midlands and Lancashire
Commissioning Support Unit

Executive summary

Programme introduction and evaluation scope

The *Keep Warm, Keep Well* (*KWKW*) – previously *Saving Lives with Solar* - programme uses money saved through the installation of solar panels on University of the North Midlands (UHNM) hospitals to fund a local charity, Beat the Cold (BtC), to provide vulnerable patients with support to improve their home environment, where this environment may be contributing to poorer health outcomes. BtC's offer includes an 'affordable warmth' service to patients in their home, review of a patient's energy tariff and support for them to switch if appropriate, as well as signposting or advocacy for other related services.

The NHS Strategy Unit was commissioned by the Midlands NHS Greening Board to evaluate the *KWKW* programme. This includes an evaluation of its *processes* – how its intended approach is working in practice – and guidance as to how its *impact* may be measured in the future. Overall, patients and other stakeholders were positive as to the potential for this programme to positively influence health - and other - outcomes for patients and communities. Whilst recognising these qualitative findings, this report also suggests some improvements to the programme's approach for monitoring and capturing this data in the longer-term.

Executive summary (cont.)

Evaluation findings and recommendations

The following provides an overview of the key findings and related recommendations resulting from this evaluation. These are described in detail in the main body of the report.

Finding: Staff rotation and competing priorities have contributed to variable referral activity over the course of the programme so far

- **Recommendation 1**: BtC should host staff engagement sessions at UHNM regularly to promote their offer and refresh the referral process
- **Recommendation 2**: Widening the pool of hospital staff who can identify and refer patients for the BtC service can reduce the time-burden on clinical staff
- **Recommendation 3**: Hospital staff could signpost patients to the service, as well as make formal referrals

Executive summary (cont.)

Finding: Data collection and reporting of referrals and interventions are not currently of sufficient quality to allow for evaluation of the programme's impact

- **Recommendation 4:** This evaluation report describes the necessary data collection and reporting steps required to effectively report the programme's impact. This should be adopted by programme stakeholders
- **Recommendation 5:** BtC should implement regular patient surveys to support their quantitative data with qualitative evaluation of their interventions
- **Recommendation 6:** BtC should refresh their data collection to include a defined typology of the interventions they offer and outcomes from onward referrals

Executive summary (cont.)

Finding: The *KWKW* programme has found it difficult to maintain a high profile with the UHNM senior leadership

- **Recommendation 7:** The programme should identify an executive sponsor at UHNM to advocate on its behalf. This includes advocacy for greater clinical and analytical support

Finding: The programme has scope to increase the number of referrals it makes to BtC

- **Recommendation 8:** The programme should look to expand the number of referrals to BtC made by community health services
- **Recommendation 9:** The programme may seek to dedicate more resources to encouraging and managing referrals during periods of expected higher demand, such as colder months

1. Introduction

Programme background

In 2016, University Hospitals North Midlands (UHNM) partnered with South Staffordshire Community Energy Limited (SSCEL) to raise public investment through a share offer. This investment was to enable the installation of 1000 solar panels on the roofs of Royal Stoke and County Hospital (RSCH). The share raise, installation and ongoing management of the panels was led by SSCEL.

UHNM buy the electricity generated by the panels at a reduced tariff that includes an additional sum (feed-in-tariff) that is used to provide a return to investors and pay into a community fund. This fund is used to alleviate fuel poverty in Staffordshire, through paying for patient interventions delivered by a further partner, charity Beat the Cold (BtC). The approach to delivering these interventions is the focus of the *Keep Warm, Keep Well* (*KWKW*) programme. The 'programme team' referred to in this report includes accountable stakeholders from each of these three organisations: UHNM, BtC and SSCEL.

Through this programme, UHNM provides an example of the NHS as an anchor institution – an organisation using its assets and resources to benefit the local community. It is also supporting a Net Zero NHS, as set out in the Health and Care Act 2022.

Programme rationale

The *KWKW* programme seeks to prevent readmissions of vulnerable patients whose health conditions are at risk of being exacerbated by living in a cold and damp home – particularly those who are frail, have respiratory conditions and/or present with hypothermia.

Approximately 15.3% of households in Staffordshire and 22.1% in Stoke-on-Trent are classified as being in fuel poverty. This is markedly higher than the national average of 13.2% (Department for Business, Energy & Industrial Strategy, 2022).

With the energy market experiencing unprecedented cost rises, together with low incomes and energy-inefficient homes, around 4 million UK households experience fuel poverty. With a further planned increase to the energy price cap later in 2022, it is expected that the number of households in fuel poverty will continue to rise.

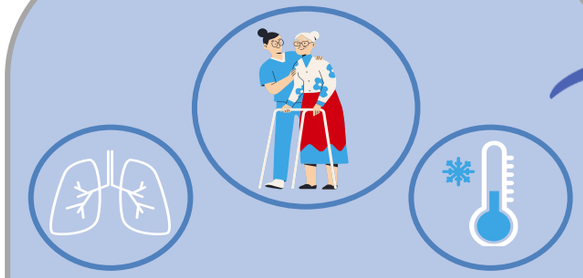
The programme operates in line with NICE guideline NG6 which covers reducing the health risks associated with living in a cold home.

The following page provides a summary of how a patient is identified, referred and supported by the programme. This has been created by the evaluation team from the research with stakeholders and patients presented in this report.

Keep Warm, Keep Well: patient journey

University Hospitals of North Midlands

PRESENTATION



Patients are eligible for the programme if their health could be affected by living in a cold home, responding to NICE guidance on reducing the associated health risks.
A patient typically presents with:

- respiratory conditions
- frailty
- hypothermia

Others may be identified as 'at-risk' and therefore eligible

ASSESSMENT

A member of the treatment team assesses whether the patient's condition could be exacerbated by living in a cold home. If yes, the patient is referred to Beat the Cold, with their consent, to consider whether they would benefit from a review of their energy usage or home environment.

Beat the Cold advisors provide guidance on eligibility and how to refer to clinicians and other hospital staff.

REFERRAL

Referrals can be made to Beat the Cold by:

- Online referral form
- Phone
- Email
- Note left for Beat the Cold Advisor

Hospital staff provide the patient's name, telephone number and Unit number.
Data sharing agreements are in place.

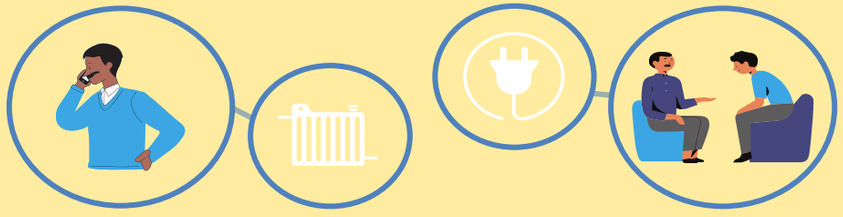
Patient Discharged

CONTACT

Within 48 hours of referral, a Beat the Cold advisor makes contact with the patient by phone.

Beat the Cold advisors are trained in providing front line affordable warmth services to vulnerable people.

ADVICE AND SUPPORT



The service user is given guidance/support to facilitate energy efficiency and living in a warm home. This may be delivered over the phone or via a home visit.

Guidance or support can include:

- Providing behavioural change advice to make the most of their energy usage
- Ensuring patients are claiming the correct means tested and disability benefits and referring them to appropriate organisations
- Reviewing a patient's energy tariff and supporting them to switch if appropriate
- Identifying any grants or subsidies from energy companies for the benefit of the patient
- Identifying funds to support the improvement of the thermal comfort of the home
- Referring to partner organisations for any other identified needs.

FOLLOW-UP

A follow-up visit or phone call is arranged with the patient if further support is required.

Beat the Cold advisors check-in with patients at agreed intervals in the future.

2. Evaluation approach

The evaluation scope

The Strategy Unit was commissioned by the Midlands NHS Greening Board to evaluate the *KWKW* programme. The evaluation aims to understand the key activities involved in its delivery, and how these impact on the health and wellbeing of patients, hospital and health system activity, and the wider community. This evaluation includes:

- Activity data for the *KWKW* programme
- A theory of change for the *KWKW* programme, described through a logic model
- A process evaluation; qualitative research exploring how different aspects of the programme are being realised, in relation to the theory of change
- An outline of how the impacts of the *KWKW* programme can be measured, in order to provide an ongoing evidence base for the effects of the programme beyond the evaluation
- Case studies reporting the impact of the programme on a small group of patients

The next page outlines the data sources that inform these evaluation outputs.

Methodology: overview

Table 1 describes the data collected during the evaluation that has informed this report and in which sections it is referenced.

Table 1: Qualitative and quantitative data sources for the KWKW evaluation

Data use	Data type	Number	Purpose	Report section
Programme activity	Routine quantitative reporting of programme activity up to 30 Jun 2022; Previous external evaluation of programme impact.	324 contacts reported by BtC	To provide a cumulative record of BtC contacts and reported interventions and outcomes.	3, Appendix C.
Theory of change; process evaluation; impact evaluation	Interviews with stakeholders, including: programme lead at UHNM; SSCEL representative; referring clinicians; and former and current BtC advisors.	6	To understand the theory of change for the programme delivery, and how this compares with the reality of what works for whom and in what circumstances (process evaluation), that might influence its outcomes.	4, 5, 6.
Process evaluation; case studies; impact evaluation	Interviews with patients who have been referred from UHNM to BtC.	4	To understand patient experience of, and satisfaction with, the service.	5, 6, Appendix A.
Impact evaluation	Proposed UHNM and BtC data collection and reporting process, advised by the lead analyst of the Staffordshire and Stoke-on-Trent Intelligence Hub.	1	To define the processes and resources required to measure the impact of the *KWKW* programme using an agreed set of metrics.	6, Appendix B.

Conclusions and recommendations for the *KWKW* programme are based on an analysis of these findings.

3. Programme activity to date

Beat the Cold service overview

The community fund provides BtC with £150 per referral. The service BtC delivers as part of this arrangement includes both direct (provided by BtC) and supplementary support (signposting, advocacy or onward referral). The table below provides the detail of this offer.

Table 2: BtC service offer to referred patients

Direct support	Supplementary support
Identify patients whose health would be at risk from living in a cold home.	Identify any grants or subsidies from energy companies for the benefit of the patient.
Provide an 'affordable warmth' service to patients in their home.	Identify funds to support the improvement of the thermal comfort of the home.
Review a patient's energy tariff and support them to switch.	Identify patients that may not be claiming the correct means tested and disability benefits and refer them to appropriate organisations.
	Refer to partner organisations for any other identified needs.

Programme activity (total referrals: Apr 2019 to Jun 2022)*

324 referrals received

Figure 1: Direct support provided to patients by BtC to Jun 22

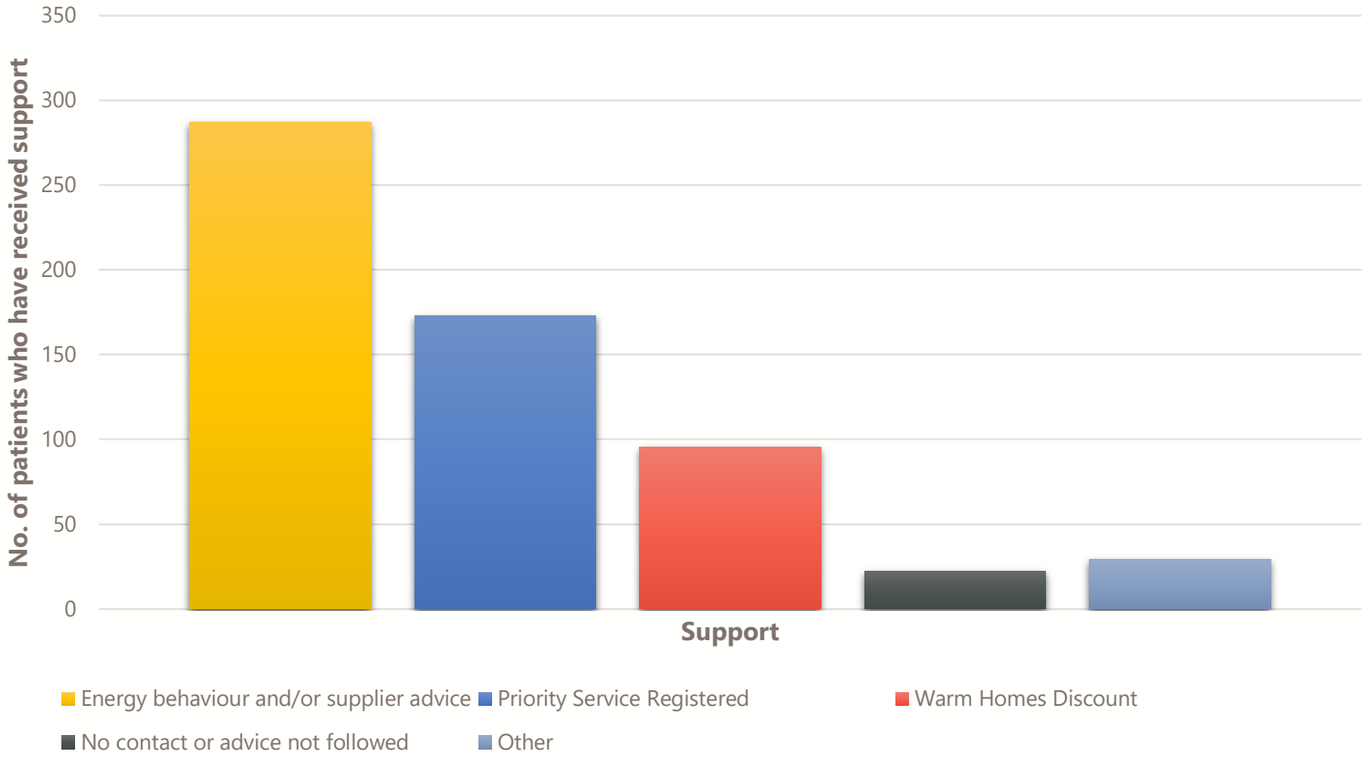


Figure 2: Supplementary support provided to patients by BtC to Jun 22

29 received a fuel bill reduction

3 outcomes of a benefits adjustment

16 fuel vouchers issued

9 referrals for Warm and Safe Grant

83 onward referrals for related services

* 92 referrals were sent prior to this reporting period but their interventions not recorded, so have not been included in this data.

Other reporting considerations

Previous programme-level impact evaluation

The programme team have previously commissioned a review of the impact of its activities. This reported in 2021 and is included as appendix C. The findings include: qualitative insights into the resulting improvements in the health and wellbeing of patients who have received a BtC intervention; financial savings to UHNM and the wider healthcare economy resulting from the programme; and its environmental impact.

Activity data limitations

Data reporting on the intervention provided by BtC has been limited and not obviously applied to a distinct typology of support provided. This makes it difficult to extrapolate the impact from the support provided to patients. More detailed reporting of intervention type has been in place since May 22 and further refinements are suggested in the impact evaluation findings of this report (section 6) and recommendations (section 7).

4. Theory of change for KWKW

KWKW Theory of Change (ToC)

"A theory of change captures.. how the intervention is expected to work, the assumptions made, the quality and strength of the evidence supporting them, and wider contextual factors."

The Magenta Book (2020) *Central Government guidance on evaluation*

The established way of describing the ToC for an intervention is through a logic model. A logic model summarises:

- **Inputs** to the intervention: what resources are required to deliver it?
- **Activities** to deliver the intervention: what actions are required and by whom?
- **Outputs** that will emerge from the activities: what will be delivered or produced as a result?
- **Outcomes** that will be realised: what change will the outputs directly affect in the short/medium term?
- **Impacts** that will be realised: what change will the outputs tangentially affect in the long term?

By summarising the intervention ToC, the logic model provides a framework for identifying the research questions and data sources for exploring delivery and outcomes. It is the tool by which the ToC can be presented and tested. The following two pages contain the logic model for the *KWKW* ToC with an accompanying narrative, developed using programme documents, and stakeholder and service user interviews.

Context

UHNM (University Hospitals of North Midlands NHS Trust) has a stated vision to 'build healthy, sustainable and resilient services and communities.' The community served by UHNM has higher than average levels of fuel poverty (and other indices of deprivation). Living in a cold home is associated with risk of poorer health outcomes as well as cycles of hospital re-admissions when people return to poor quality and inadequately heated homes. This problem is particularly pertinent in the current energy crisis. Solar panels generate renewable energy which results in cost savings and UHNM have partnered with SSCEL who have, through raising investment, installed 1000 solar panels on UHNM hospitals.

Rationale

UHNM contribute to a community fund through 'feed in tariffs' added to the payments they make for electricity (generated by the panels). This fund is used to help reduce the number of people in its community whose health is affected by cold homes through working with SSCEL and Beat the Cold (BtC) services. Specifically, they are targeting those most vulnerable to the effects of cold homes (e.g. hypothermia, the frail/elderly; those with respiratory conditions). This programme helps UHNM meet its long-term commitment to sustainability and break the cycle of patients returning to hospital with conditions affected by living in a cold home.

Inputs

- Financial investment – raised by SSCEL - for infrastructure and logistics
- Solar panels generate energy which results in cost savings to the Trust. This funding is allocated to BtC services (c. £20-30k per annum).
- Human resources (programme team and referring clinician time at UHNM)
- Leadership and management (UHNM, SSCEL and BtC)
- Promotional materials for the service
- NICE guidance on health risks associated with cold homes
- Data sharing agreement between BtC and UHNM

Activities

- Data collected demonstrating energy savings/reduction in carbon footprint for UHNM as a result of the solar panels
- Training for clinicians (and volunteers) about health risks associated with living in cold homes, including evidence and clinical guidance about these health risks.
- Clinician (or other hospital staff) makes assessment for eligibility based on discrete assessment of possible causes of symptoms, or use of electrical equipment to support symptoms. Staff makes a referral to BtC advisor.
- BtC advisor visits the hospital once a week to pick up referrals not received directly and engage with staff. Contacts patient to arrange visit.
- Patient receives phone call and home visit when appropriate from BtC advisor (includes assessment and follow-up) – services include: signposting to grants and benefits to reduce energy bills, adding patients to the Priority Services Register, switching energy providers, giving practical advice about energy efficient behaviours, home improvements and heating.
- Programme team responsible for raising awareness about the programme among staff at UHNM.
- Making links with lead clinicians in suitable departments at UHNM
- Data relating to referral condition types and outcomes of BtC visit collected

Outputs

1. Reported reduction in CO2 emissions as a result of the panels
2. Reported financial savings to UHNM as a result of the panels
3a. Clinicians and other healthcare professionals are clear as to the health risks associated with living in a cold home and recognise associated symptoms/presentations
4a. Patient provided with a non-medical intervention to support their health needs by BtC
4b.Patient is in receipt of follow-up support from BtC
4c. Patient is provided with bespoke advice and guidance to support them to improve their living conditions
3b. Better awareness of the BtC service among staff at UHNM; clinicians and other staff know how to signpost/refer to BtC service
3c. Increase in the number of referrals to the BtC service and number of patients taking part in the scheme.
5. Scaling up of the service: increased number of departments signposting to the BtC service
6. Take-up of service by patients monitored and resulting outcomes reported, demonstrating impact

Outcomes

Environmental

1. Reducing environmental impact of UHNM
2. Increased energy efficient behaviours in patients

Social

3. Patients experience healthier home environment
4. Increase in use of innovative funding mechanisms to support sustainability initiatives at UHNM

Economic

5. Reduced hospital and A&E readmissions for referred patients with conditions related to living in a cold home
6. Contribution of cost savings to overall financial position of UHNM
7. Improved finances of patients (reduce fuel debt, reduce energy bills)

Health

8. Reduction in health inequalities, morbidity and excess mortality associated with living in cold homes
9. Greater use of non-medical interventions (social prescribing) to support the health of patients who attend UHNM
10. Contributing to the evidence base demonstrating the link between cold homes and poor health outcomes

Impacts

- Improved energy efficiency and greater use of renewable energy sources at UHNM
- Building healthy, resilient and sustainable communities
- Increased community engagement and better links between the NHS trust and the local community.
- More efficient use of financial resources within the healthcare system
- Improved health and wellbeing of community around UHNM
- Avoidable hospital admissions prevented

Enablers and assumptions (dependencies which will impact implementation and delivery)

- Visible presence of Beat the Cold staff in the hospital to promote the service
- Clinicians and other healthcare professionals are aware of the programme and want to engage with it. Refresher sessions happen regularly to account for staff rotations
- Strong relationships are maintained between relevant different departments within UHNM, and between UHNM and SSCEL and BtC
- IT/digital infrastructure challenges and additional administrative burden are within acceptable levels
- Operational pressures on the NHS and competing priorities (e.g. COVID recovery) are able to managed whilst maintaining the service
- Patients will welcome a referral to the service and staff understand some of the possible associated stigmas patients may feel

Colour key

- Clinical engagement
- BtC responsible
- Programme responsible

The Strategy Unit

Supporting narrative for the KWKW logic model

The logic model describes the key *processes* involved in delivering the *KWKW* programme, and the route through to their intended *impacts*. It shows that there are three main delivery partners: the programme team at UHNM and SSCEL, who designed the approach and are ultimately responsible for its coordination and outcomes; clinicians at UHNM who provide referrals to the service; and BtC, who deliver the service.

There are some key features to note:

- An important aspect of the programme *activities* is to have a regular visible BtC presence at UHNM. This was not possible under COVID-19 restrictions, with a corresponding reduction in referrals during this time, and has since been re-introduced
- Referral methods have also evolved over time, with phone calls, emails and paper referrals all being made available. Recently, an online referral form has also been introduced
- Initially, the service was targeted at a small geographic area, but this has been scaled-up to provide the service to any eligible patient, regardless of address, as well as those who use electrical equipment to manage their health
- The service is expanding to include referrals from Midlands Partnership NHS Foundation Trust (MPFT) Community Rapid Intervention Services (CRIS) and Staying Well Services.

5. Process evaluation

How is KWKW being delivered in practice?

The process evaluation involved qualitative interviews with stakeholders and patients to explore the delivery approach summarised in the logic model. Key lines of enquiry (KLoE) were developed to explore the ToC:

1. How is the rationale for the programme reflected in its approach and what are the key inputs?
2. How are activities identified for *KWKW* working in practice?
3. How are the intended outputs and outcomes being realised?

The following pages present the findings in summary tables, organised by theme.

1. How is the rationale for the programme reflected in its approach and what are the key inputs?

Table 3: KLoE for KWKW process evaluation (programme rationale and key inputs)

ToC theme	Finding
Patient benefits (rationale)	**Clinical departments that have high volumes of repeat admissions are more likely to recognise the benefits of the programme**, where preventative measures to improve patient living environments may have the most impact on their overall health and wellbeing and therefore hospital admissions.
Programme scope (rationale)	Starting small and expanding the scope of the service later allowed time for the programme team to trial different approaches to embedding it in the hospital. **Learning from experience has been a key feature of the programme**.
Linking to UHNM priorities (rationale)	Health policy is fluid and priorities are regularly updated. **Refreshing and reiterating the rationale for the programme with relevant hospital staff** is useful to position the programme amongst competing priorities.
Clinician time (input)	**A senior clinical 'champion' is vital to the referral process being adopted in a hospital department**. Identifying and engaging these 'champions' beyond the existing target cohorts (frailty, respiratory, hypothermia) has proved challenging; the service is not viewed a priority and there is low awareness of it across the Trust.
Senior UHNM leadership (input)	**Raising the profile of the programme with the UHNM board** could be useful to build its profile and gather wider support across the Trust.

2. How are activities for KWKW working in practice?

Table 4: KLoE for KWKW process evaluation (activities)

ToC theme	Finding
Raising programme awareness	**The importance of all ward staff being aware of the programme was highlighted**, as patients may share insights into their home environment with non-clinical staff, which can then be passed onto their treating clinicians to inform a referral decision.
	Loss of knowledge about the programme caused by staff rotation in departments can be mitigated by regular sessions with BtC advisors to raise awareness of the programme and referral process, including providing clear information as to the potential benefits for patients. **A physical presence of BtC advisors, regularly at the hospital, is important to embed the referral process, but this takes time and needs to be maintained.**
	Referral activity is likely to experience seasonal variation, with more eligible patients attending hospital during the colder months. Additional resource for raising programme awareness may be useful in preparation for these periods of higher demand.
Supporting UHNM staff to engage patients	**Referral for non-medical interventions from hospital settings is increasingly common**, with staff more experienced in making assessments to these services.
	There is some stigma associated with the referrals, with some patients refusing on the basis that they don't want to be seen as living in poverty or unable to cope themselves. Hospital staff are provided advice by BtC to manage these reservations.

2. How are activities for KWKW working in practice? (cont.)

Table 5: KLoE for KWKW process evaluation (activities)

ToC theme	Finding
Making referrals	Although clinicians are usually involved in a decision to refer, the referral itself can be handled by other staff, for example: discharge facilitators, ward managers and therapists. **There may be scope to train and empower a wider group of staff to handle the referral process.**
	Maintaining multiple and streamlined referral methods is important to support the preferences and ease of process for referring staff.
	A dedicated team of nurses for COPD facilitate early interventions with inpatients and carry out follow-up assessments post-discharge. This team explores potential issues of fuel poverty and gain consent to refer to BtC if appropriate. **Adequate staff resources are key to this process.**
	Some patients have also been encouraged to refer themselves by hospital staff, and this provides a useful alternative method. It is not clear, however, how these patients are counted in the programme activity, compared with direct referrals.
Initial BtC contact	**The approach of BtC advisers in their initial contact has been described by patients as supportive and appreciative of their circumstances**, offering a comprehensive discussion and adapting to their diverse needs.

3. How are the intended outputs and outcomes being realised?

Table 6: KLoE for KWKW process evaluation (outputs and outcomes)

ToC theme	Finding
Monitoring of patient interventions from BtC	UHNM have not been able to access detailed descriptions of the intervention provided to a referred patient from BtC, **making it difficult to assess the impact of different interventions on expected outcomes and build the evidence base for the *KWKW* programme.**
	Any revisions to the data shared between the programme stakeholders needs to be approved by the relevant Information Governance teams, which can be a slow process.
	Benefits for patients may be more likely to be seen around overall health and wellbeing (including financial wellbeing), rather than in reduced hospital admissions, due to the difficulty in demonstrating direct causality in the latter.
Realising the intended outcomes (patient reporting)	**Referred patients have highlighted the improvement in wellbeing of family members or others who care for them** as a result of the referral, as they are less concerned about the impact of their home environment on their overall health and wellbeing.
	Although the UHNM funding pays for BtC's advisory service (including registering them for priority services), they are also able to support patients with accessing other grants and funding streams to make improvements to their home as a result of being provided with the initial referral. **Patients have reported significant changes to their homes, such as access to funding for a new boiler, as a result of this supplementary support.**
	Patients have reported improvements in their financial and emotional wellbeing as a result of the BtC contact. Feeling that BtC will provide ongoing support if they need it has been stated as reassuring to patients.

3. How are the intended outputs and outcomes being realised? (cont.)

Table 7: KLoE for KWKW process evaluation (outputs and outcomes)

ToC theme	Finding
Realising the intended outcomes (stakeholder reporting)	The length of time (20 years) that monies will be generated from the KWKW **programme provides an opportunity for longer-term cultural shift in UHNM to providing non-medical interventions** for people affected by living in a cold home.
	The *KWKW* programme has provided BtC with access to a high-need and potentially vulnerable cohort who previously had been unaware of their service. The high proportion of patients placed on the priority services register, for example, as a result of the BtC intervention, is evidence of this.
	The support available to patients referred to BtC can vary over time. For example, they have recently partnered with Staffordshire and Stoke-on-Trent local governments to administer fuel vouchers for a time-limited period. This initiative is available to all of their clients.
	There is capacity for additional referrals from UHNM, with a minimum of 300 per annum possible, costed at £120 per BtC referral.
	Broadening the scope of the service to include CRIS and Staying Well Services, which operate in the community, **is expected to increase the numbers of referrals made to BtC, as they already operate a preventative medicine approach.**
Measuring the intended outcomes	An initial piece of analysis was completed in 2021 to assess the delivered, and expected, economic, health and environmental benefits of *KWKW* for referred patients and UHNM. **Securing the ongoing time of UHNM analytical teams to contribute to monitoring the impact of the interventions and update this work has been difficult.**

6. Impact evaluation

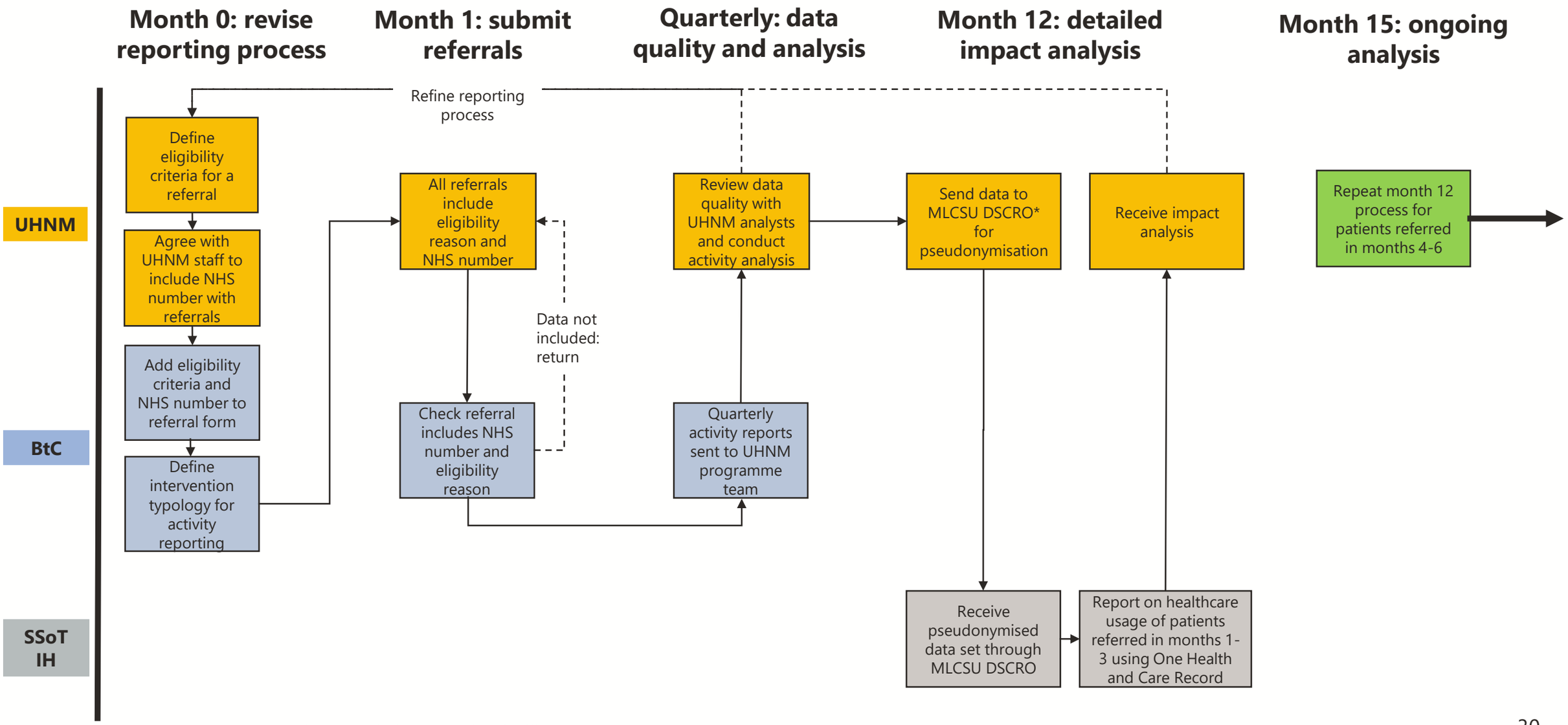
KWKW impact evaluation: current limitations

An *impact* evaluation focuses on the measurable changes that result from a programme. The objective at the outset of this evaluation was to identify a set of metrics that would enable UHNM and BtC, with the support of the Staffordshire and Stoke-on-Trent Intelligence Hub (SSoT IH), to begin to demonstrate the programme's impact across a range of factors. These metrics - based on the programme logic model - are provided as appendix B.

In conducting this research, however, the evaluation team, SSoT IH and UHNM analysts have identified limitations in current reporting in the *KWKW* programme that preclude proper analysis of its impact at this time. **The most significant limitation is that the NHS numbers of patients referred to BtC are not commonly provided**, so patients cannot be tracked by UHNM or the SSoT IH to understand their pre and post-BtC intervention healthcare needs. Clear identification of the *type* of intervention provided by BtC, so that their differing impacts on the ongoing healthcare needs of patients can be identified, is also a limitation in current reporting (although this has recently been refreshed). Mitigation for this is suggested in the recommendations section of this report.

In order to provide a way forward for measuring the impact of the *KWKW* programme, the evaluation team have worked with the SSoT IH lead analyst to describe a process for data collection and reporting that would allow this analysis to take place. **It is recommended that this is adopted by UHNM and BtC.**

Recommended data collection and reporting process



* MLCSU Data Services for Commissioners Regional Officers

Critical enablers to recommended reporting process

The process map on the previous page requires further explanation of its stages. These are stated in table 8 below, according to where they sit in the process.

Table 8: Critical enablers for stages in the recommended reporting process

<table>
<tr><th></th><th>Month 0: revise reporting process</th><th>Month 1: submit referrals</th><th>Quarterly: data quality and analysis</th><th>Month 12 and ongoing: detailed impact analysis</th></tr>
<tr><td rowspan="4">Enablers required</td><td>(UHNM): A checklist of possible referral reasons – eligibility criteria – agreed</td><td rowspan="2">(BtC): Quality check referrals for NHS number and referral reason</td><td rowspan="2">(BtC): Quarterly activity reporting includes NHS numbers to allow patient tracking and qualitative data collected (see recommendation 5)</td><td rowspan="2">(UHNM): Amendment to MLCSU and UHNM data sharing agreement required (schedule 6) to allow pseudonymised data to be shared with SSoT IH</td></tr>
<tr><td>(UHNM): NHS numbers agreed to be shared as part of BtC referral (IG requirements already in place)</td></tr>
<tr><td>(BtC): Eligibility criteria and NHS numbers added to referral form</td><td rowspan="2">(BtC): Capture no. of referrals received; time to engagement; acceptance of support; intervention type; intervention completion date</td><td rowspan="2">(UHNM): Analysts support review of activity data to identify any data quality issues and activity trends</td><td rowspan="2">(SSoT IH) Staffordshire One Health and Care Record access requires Use Case to be submitted for this purpose</td></tr>
<tr><td>(BtC): Typology of interventions defined</td></tr>
</table>

7. Summary conclusions and recommendations

Summary conclusions

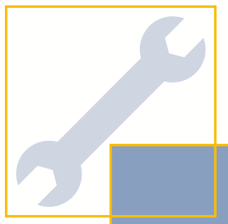
The process evaluation has highlighted areas of the programme that are working well, areas that are undergoing change and therefore their effectiveness is not yet clear, and areas with potential for improvement. The figure below provides a summary of these conclusions. These inform the recommendations on the following pages.

Working well

- Multiple referral methods available to staff and patients
- Community fund providing sufficient resource to accommodate an increase in referrals
- BtC interventions offered appropriate and well received by patients
- Offering referrals through community healthcare teams in addition to in-hospital
- Commitment of existing programme team and clinical leads for target cohorts to building activity
- Providing BtC greater access to vulnerable groups

Not yet clear

- Re-introducing regular visits from BtC staff to discuss the service with hospital teams
- Ability of the programme to build its profile within UHNM
- Getting support from clinical 'champions' to develop new service routes
- Facilitating a cultural shift of utilising non-medical interventions in hospital settings
- Able to demonstrate direct causality between BtC intervention and effect on hospital admissions



May require attention

- NHS numbers and referral reason provided as standard with each referral to BtC
- Data collected about BtC intervention provided to patients and shared with UHNM
- Staggering resources to reflect expected trends in demand e.g. higher in colder months, or during extreme weather events
- Growing the pool of hospital staff who can discuss a referral with patients
- Availability of analytical support at UHNM to analyse programme activity data

Summary recommendations

Based on this evaluation, the following recommendations are suggested.

Process	Recommendation
Supporting referrals	**1. Regular BtC awareness sessions of their offer should be maintained** with relevant clinical and non-clinical staff at UHNM to respond to staff rotation and competing organisational priorities.
	2. Widening the pool of hospital staff who are able to make a referral to BtC may increase activity. This could include greater use of volunteer staff. A training offer to support staff to do this will be required and this should include both the referral process, and context i.e. the link between fuel poverty and health. Using the experience of staff who are already experienced in discussing preventative, non-medical approaches to supporting patient health, such as discharge teams, may be useful to support this.
	3. **Encouraging patients to refer themselves as part of the discharge process may also increase activity, and reduce the burden on hospital staff to make a formal referral.** BtC will need to ascertain the source of direct contacts in order for this activity to be registered against the programme and request their NHS numbers to support impact evaluation
Intervention reporting	**4. UHNM, BtC and SSoT IH should implement the data collection and reporting process presented in section 6.** This requires UHNM to secure ongoing analytical support from within the Trust and the SSoT IH.
Intervention reporting	**5**. **BtC patient engagements resulting from a programme referral should be followed up with a short patient survey** (within 3-6 months of the initial contact), conducted over the phone. These can be a sample of referrals, or all engagements, dependent on activity levels. Surveys should focus on what has changed for the patient as a result of the intervention, as well as the impact on those around them e.g. family or carers. The results from these patient surveys should be reported back to UHNM as part of the suggested regular quarterly reporting.

Summary recommendations (cont.)

Process	Recommendation
Intervention reporting (cont.)	**6**. BtC can refresh their own data collection approach to support the recommended process in the following ways: • **BtC request data from the local authority where they have made an onward referral** to collect and report its outcome. It is understood data sharing agreements are already in place to facilitate this. • **BtC and UHNM should agree a typology of both direct and supplementary interventions resulting from BtC engagement with a patient.** Patient interventions should then be reported back to UHNM according to this typology to support the impact evaluation. This typology should be refreshed annually to include short-term intervention offers e.g. fuel vouchers.
Intervention scope	**7**. The significant time commitment to the community fund used by *KWKW* means that the programme should continue to be supported by the UHNM leadership team to learn what works in encouraging referrals and supporting patients with their home environments. **It may require an identified UHNM executive sponsor to ensure it maintains a consistent profile in the Trust and secures the necessary clinical and analytical support.** Recognition of this programme as a long-term piece of work by UHNM should be confirmed to allow the programme team to embed itself in hospital practices.
	8. The programme should continue to promote the use of referrals in health services that operate in the community e.g. Staying Well and CRIS, which may be an effective way of increasing activity.
	9. Focusing more resources for staff awareness raising and referrals training in periods of expected higher need (e.g. winter months) could make best use of BtC resources. This would allow for a greater pool of staff to be prepared to make referrals during periods where the impact of the service may be most significant.

Appendix A: Patient case studies

Patient case studies

Four patients who had been referred to BtC, or self-referred following encouragement from hospital staff at UHNM, have been interviewed as part of this evaluation. The themes have informed the process evaluation in section 5 and the conclusions and recommendations. The following pages present a summary of each participant's account.

Case study 1 – Abigail: Stoke-on-Trent

About Abigail…
Abigail is an older lady who lives at home with her husband of 68 years. She previously had a steel rod inserted in her leg and this has affected her mobility.

She'd been in hospital because….
She had a problem with her bowel and ended up in hospital for 6 weeks. After she left she needed a nurse to look after her for another 16 weeks.

How she found out about Beat the Cold….
Whilst she was in hospital, the staff found out that she had been struggling to take a bath due to her mobility issues. She was told that she could be eligible for some help to improve her home and Beat the Cold could facilitate this.

What happened next…
Beat the Cold contacted her and arranged a home visit. Following this, she was supported to get a new boiler via the Safe and Warm scheme. She was also provided with advice around her energy usage and was placed on the Priority Service Register by the Beat the Cold advisor.

Case study 1 – Abigail: Stoke-on-Trent (cont.)

What difference has this support made to Abigail…

Abigail now has a smart boiler which has helped to control the temperature of her home.

"It's a marvellous boiler… As the weather's getting warmer, it'll come on early in the morning and then it goes off. I don't have to touch it. Yes it is really good."

She has also received support from other local authority services, including receiving grants to have a new bathroom and windows installed.

This support has helped to improve the quality of Abigail's home environment.

"They say that they keep you in your own house so that you don't have to go in a home and it keeps us warm and that… I was just surprised at [being able to have] it done."

Case study 2 – Ben: Newcastle-under-Lyme

About Ben

Ben has multiple health conditions and poor mobility. He currently lives in Newcastle-under-Lyme.

He'd been in hospital because….

Ben had been in hospital for cancer treatment.

How he found out about Beat the Cold….

During one of his hospital appointments, Ben was told about the Beat the Cold service by one of the hospital doctors. The doctor initiated the conversation by asking Ben how he was coping with the weather. Ben was told that he could contact Beat the Cold to request any support relating to his home environment.

What happened next…

Ben telephoned Beat the Cold to seek advice about energy usage in his home. An energy advisor from Beat the Cold gave him advice relating to how he could use the heating in his home more efficiently. He was also offered support related to his energy provider, for example he was placed on the Priority Services Register. In addition, he was signposted to grants and benefits that he may be eligible for.

Case study 2 – Ben: Newcastle-under-Lyme (cont.)

What difference has this support made to Ben…

Following the phone call with Beat the Cold, Ben has changed how he uses energy in the home. He now focuses on heating the room that he spends the most time in. This has led to a reduction in heating costs, which he says has had a positive impact.

"…it's been perfect, and it's worked out really well, not just emotionally but financially as well, if I just keep the heating costs down."

Since the initial phone call with Beat the Cold, Ben has received follow-up phone calls to check how he is doing. Ben stated that he would get in touch with Beat the Cold again if he needs any more advice.

In addition to the support from Beat the Cold, Ben has also received support from a Home Safety service which led to him having smoke alarms and carbon monoxide detectors fitted. Ben reported that he appreciated being told about this type of service, which he would not otherwise have known about.

Overall the support Ben has received appears to have been helpful for his independence.

"…Well I feel a lot more comfortable that I'm making people aware that I am OK, I am managing…"

Case study 3 – Charles: Tamworth

About Charles

Charles is an older man who lives with his wife in Tamworth. He has multiple health conditions including a chronic lung condition and cardiovascular disease, both of which could be affected by living in a cold home.

How he found out about Beat the Cold….

Charles found out about Beat the Cold via a wellbeing service. He says this was likely to be via a referral from his doctor.

What happened next…

Beat the Cold initially got in touch with Charles via telephone and then arranged to visit him at home. They gave him advice about energy usage in the home. He was also told about support he could receive for his energy bills. Beat the Cold supported Charles to get a place on the Priority Services Register. He was also advised about relevant discounts and benefits that he may be eligible for, and told about lifeline pendant alarms.

Case study 3 – Charles: Tamworth (cont.)

What difference has this support made to Charles…

Charles implemented the energy usage advice given to him by the Beat the Cold advisors and was able to change how he heats his home, to use the heating more efficiently. He now focuses on keeping one room in the house warm, as that is where he and his wife spend the most time.

"Well what they've told me and what we've done on their advice has worked out very well… We only keep one room really warm for us and the dogs. And the other rooms are a little bit cooler. You know, that's about right. And that's how we've been working it."

Charles reported that the advice he received has been helpful for his health, and has also led to a reduction in his monthly spending on energy. Charles also acknowledged Beat the Cold's specialist knowledge in this area.

"You can't improve on expertise... They know what they're talking about…"

Case study 4 – Deborah: South Staffordshire

About Deborah:
Deborah is an older lady who lives with her partner in South Staffordshire. She has multiple health conditions and her mobility is affected.

How she found out about Beat the Cold….
Deborah was told about the Beat the Cold service by two nurses who visited her at home. They gave her some information about Beat the Cold and other support services, and she was told that someone from Beat the Cold would contact her.

What happened next…
Following the visit from the nurses, Deborah was contacted by an energy advisor from Beat the Cold, who advised her about grants and benefits she may be entitled to. Deborah was also supported with the Priority Services Register and was given energy advice. In addition, the advisor discussed equipment with her, such as lifeline pendants and a chair to assist with mobility problems.

Case study 4 – Deborah: South Staffordshire (cont.)

What difference has this support made to Deborah…

After the phone call with the Beat the Cold energy advisor, Deborah applied for attendance allowance, and has recently found out that her application was successful. She reports that this will be helpful if she needs assistance in the future.

"…it'll help me. I'm having problems with different things now, you know illness. And if I need to get someone in to help me, I can afford to pay them…"

Deborah commented that she is grateful for the help she has received from Beat the Cold and appreciated knowing that there was someone she could call if she needed any advice.

"…you just feel better because there's somebody there that you know you could get in touch with if you need to, and somebody cares..."

Appendix B: detailed measurement framework (created from the KWKW logic model)

KWKW measurement framework - outputs

Data source key

- UHNM
- BtC
- SSCEL
- SSoT IH

Output	Indicator(s)	Source and timing
1. Reported reduction in CO2 emissions as a result of the solar panels	• CO2 emissions and comparable data provided to SSoT IH	• SSCEL data based on panel emissions. Reported annually
2. Reported financial savings to UHNM as a result of the solar panels	• Electricity cost savings data provided to SSoT IH	• UHNM property services based on historic energy costs. Reported annually
3a. Clinicians understand health risks associated with living in a cold home	• Number of training sessions delivered to clinicians by BtC • Number of referrals received by BtC from clinicians	• 6-monthly review of clinical engagement carried out by BtC • BtC referrals received reported quarterly
3b. Clinicians are aware of option to refer patients who are at risk of poor health due to cold home to BtC	• Number of training sessions delivered to clinicians by BtC • Number of referrals received by BtC from clinicians	• 6-monthly review of clinical engagement carried out by BtC • BtC referrals received reported quarterly
3c. Number of referrals to the service increases	• Number of referrals received by BtC from clinicians	• BtC referrals received reported quarterly • Referral type e.g. Electronic form; phone message; email; other
4a; 4b; 4c. Patients receive follow-up support from BtC	• Number of contacts made by BtC on the basis of clinician referrals and type of support provided.	• BtC reported on a quarterly basis, requires typology of BtC support provision
5. Service scope is scaled up to include more departments e.g. cancer patients	• Number of health conditions represented in patient referrals • Number of hospital departments engaged by BtC	• BtC clinical staff engagement activity reported on a quarterly basis • Hospital data of health conditions represented by referred patients
6. Ongoing monitoring of referred patients' hospital attendance	• Required data collection processes in place	• SSoT IH quarterly reports of identified output and outcomes data provided to UHNM programme team

KWKW measurement framework – outcomes

Data source key

- UHNM
- BtC
- SSCEL
- SSoT IH

Outcome	Indicator(s)	Source and timing
1. Reduced environmental impact of UHNM	• Reduction in carbon dioxide emissions from the UHNM estate contributing to net zero by 2050	• Monitoring of energy consumption carried out by UHNM as part of their Sustainability Plan, 2020-2025 on a quarterly basis
2. Increased energy efficient behaviours of patients in receipt of the service	• Evidence of patients engaged by the service making changes in their energy usage behaviours	• BtC record of service interventions related to energy consumption, reported quarterly
3. Patients experience a healthier home environment	• Patients engaged by the service report a healthier home environment as a result of being engaged by the service	• BtC patient feedback relating to changes in their home environment as a result of their engagement. Reported by BtC quarterly.
4. Increased use of innovative funding mechanisms for sustainability initiatives at UHNM	• Number of sustainability projects initiated at UHNM and their funding routes	• UHNM lead for its sustainability plan. Reported annually
5. Improved overall financial position of UHNM	• Contribution of energy savings to overall financial savings required of UHNM	• UHNM property services, reported annually
6. Reduced hospital presentations for patients who have been referred to the service for conditions related to living in a cold home	• Number of hospital presentations and reason for presentation for referred patients, linked back to original presentation reason	• SSoT IH directly collected from UHNM (via MLCSU DSCRO) on a quarterly basis
7. Improved finances patients engaged by the service	• Patients' experience a reduction in their overall energy costs	• BtC patient feedback relating to financial impact of intervention, reported quarterly

KWKW measurement framework – outcomes (cont.)

Data source key
- UHNM
- BtC
- SSCEL
- SSoT IH

Outcome	Indicator(s)	Source and timing
8. Reduction in health inequalities, morbidity and excess mortality associated with living in cold homes	• Number of people from lower socio-economic backgrounds; ethnic minorities; physical or learning disabilities; older people; and other groups who experience health inequalities living in a cold home.	• Demographic data relating to patients referred to the service, collected by BtC. Reported quarterly • Excess winter deaths experienced by patient groups in SSoT who are known to have worse health outcomes. Collected by SSoT IH and reported quarterly
9. Greater use of non-medical interventions by UHNM to support patient health	• Number of patients formally referred by clinicians or other hospital staff for a non-medical intervention • Number of non-medical interventions available to patients through UHNM • Number of hospital departments actively providing referrals	• UHNM reporting of overall referrals for non-medical interventions, provided monthly • UHNM reporting of available non-medical referral options, provided every 6 months
10. Service contributes to the evidence base demonstrating the link between cold homes and poor health outcomes	• UHNM, supported by the SSoT IH, publish summary report of impact of the *KWKW* scheme.	• SSoT IH, produced annually

Appendix C: previously reported impacts of the KWKW programme (not carried out as part of this evaluation)

Community of Interest
&
Community of Place

Saving Lives With Solar

Socio Economic Impact
2016-2036

- 248 kWp of Solar PV
- 7 buildings in the UHNM NHS Estate
- £306000 Community Share Offer
- 4.5% return
- 77 investors including Stoke on Trent City Council
- PPA - £600k projected saving to NHS vs grid
- Community Fund - £0.3 Million over 20 years

2016-20

- 234 Referrals
- 98% Respiratory
- Areas of Fuel Poverty up to 40.2%
- UHNM Data Team readmission benchmarking
  - 13% not readmitted after 6 months
  - 38% reduction in 30 day emergency readmission

- BTC Research with referrals
  - 71% " positive impact on health & wellbeing"
  - 57% "less likely to use medical services
  - 57% " less affected by mould
  - 71% " able to maintain safe temperature"
  - 43% " less worried about fuel bill"

2021

- Devon, Bristol, Plymouth Councils Economic Evaluation community energy
- Specialist Consultants
- " Green Book" Accounting
- Carbon Impact
- VPF/ VOLY/QALY

UHNM 7:1 Benefit cost ratio.with Community fund 10:1.

carbon net impact 27T , £21400. community fund driving net positive carbon.

Outreach multiplier in royal Devon exeter nhs trust (+£1.4 Million, 842 T CO2) .

Hastings Council (£0.14 Mio)

	2016-2020					2022-2036		2016-36
	£'000s	CO2e	CO2 £'000s	Cost : Benefit Ratio	QALY Ratio	£ Million	CO2	TOTAL
Healthcare Economy	236			7.4:1		0.7		0.9
UHNM Direct Saving	40	355	6	10:1		0.2	392	0.2
Total	226			7:1		0.9	392	1.1
Energy Advice	9	91	2	1.4:1		0.04	170	0.05
Benefits	56			28:1		0.2		0.3
Priority Register	16	57	1	1:1	TBD	0.1	91	0.1
New Heating	6	36	2	0.22:1	7/29:1	0.03	240	0.03
Home Improvement	8	52	1	1:1	TBD	0.03	83	0.04
BTC Total	89	236		2:1/16:1		0.3	484	0.4
Embodied CO2e		(720)	(4)					
TOTAL	315	(129)	8	10:1		1.2	747	1.5

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