

# **BOILER ON PRESCRIPTION TRIAL CLOSING REPORT**

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## Introduction

Over the past ten to twenty years there has been a growing body of evidence relating to the negative health effects of living in cold and damp housing. More recently housing associations have played an increasingly active role in addressing health inequalities through a range of collaborative initiatives with the National Health Service (NHS) across the country.

Gentoo's 'Boiler on Prescription' trial in partnership with Sunderland Clinical Commissioning Group (CCG) and Durham Darlington Easington and Sedgefield (DDES) CCG and a second study in partnership with Bangor University, have looked to calculate the improvements to the health of people whose homes have been improved with energy efficiency measures.

Gentoo has worked to identify exactly what the health implications have been on the occupants of homes that have had their energy efficiency improved by the Group. The Boiler on Prescription Pilot has created partnerships with the Clinical Commissioning Groups that has allowed actual health data to be used as a measure of success. While its work with Bangor University has seen their Health Economists have used wellbeing indicators to quantify improvements to physical and mental wellbeing.

This report brings to an end the research which has drawn national and international attention and has helped demonstrate that there is enough information to warrant further research into the link between the improvement of poor quality housing and the health and wellbeing of occupants.

Over the last six years Gentoo has been at the forefront of sustainability in social housing.

Based in Sunderland and Scotland with more than 32,000 homes, we have retrofitted nearly 3,000 properties with packages of energy-saving technologies since 2010 and recently completed the 5000th installation of solar PV technology.

The Group's initial aim was to test various energy saving technologies to establish whether they did as their instructions and marketing brochures promised. We also set out to investigate how our customers' behaviour changed once their homes had been retrofitted with such technologies.

Eventually we wanted to investigate whether it was possible to generate; an increase in EPC and SAP ratings; significant financial savings to the household and at the same time, a reduction in the carbon emission from the home. But ultimately we wanted to our customers to be warmer and more comfortable in their homes as a result of us improving thermal and energy efficiency of our properties.

Gentoo was chosen to deliver one of the government's Pay As You Save (PAYS) pilot schemes and also worked with the Department of Energy and Climate Change to deliver a 1800-home Green Deal pilot scheme to establish the effectiveness of such a scheme in the social housing sector.

Across all of our retrofit work we were able to demonstrate carbon reductions of around 25% emissions per property and saved each household around £125 per annum on their fuel bill.

However, we found that something much deeper was happening with our customers.

Customers were telling us they were feeling better. Families reported being happier and their wellbeing had increased. Not just in one or two homes, but in home after home, street after street. We were being inundated with huge amounts of anecdotal evidence to suggest the biggest difference we had made since retrofitting the home was to the health of our customers.

We were left with evidence we couldn't ignore yet was unusable in any format.

It created an almost overwhelming challenge, how could we translate this huge weight of anecdotal evidence into something that would be accepted by health professionals?

This report will detail the learning journey we went on, to not only transform the evidence we had into hard data, but how we then got a GP to prescribe a boiler to patients with health conditions exacerbated by living in a cold damp home. We of course still captured all the technical data but this report will look at health too.

## Working with the NHS & Health Professionals

Starting a conversation with the NHS can feel like sitting down to eat an elephant. Where on earth do you start?

Naively we thought we could just pick up the phone and speak to a local GP. As we soon realised, a conversation with a GP would be almost the last one we would have in a three year discussion.

Gentoo's original intention was to investigate whether our retrofit work had stopped our residents presenting themselves at their local GP surgery as frequently as they were.

Working with our local Primary Care Trust, now known as a Clinical Commissioning Group (CCG), we were able to quickly establish that one in three Gentoo customers in the local area of our retrofit scheme had presented themselves at A&E in the previous year, compared to one in seven of non-Gentoo customers across the city of Sunderland. A non-Gentoo customers were therefore twice as likely to seek emergency help as a Gentoo customer.

Not only that, there was a difference in life expectancy of 13 years across Sunderland from the most socially deprived area in Hendon to the most affluent neighbourhood in Fulwell just two miles away. According to the Data Team at Sunderland CCG, for every metre travelled between Hendon and Fulwell, 1.5 days is lost in the average life expectancy of a resident.

These figures really brought into focus the need to act on our evidence. We then began to think, could a GP prescribe thermal improvements to NHS patients with illnesses that were exacerbated by cold temperatures.

What would we need to do and what data would we need to collect to be able to demonstrate success for the NHS from any future home improvement programmes we undertook?

In early discussions with the now newly formed CCG's, we were encouraged to learn that as Commissioners, they could commission any service they believed would deliver a health benefit to the patients they were responsible for.

Commissioned services however, did require strong evidence bases. But non-medical interventions could certainly be considered.

Encouraged, we set about designing a tenure blind process that would allow GP's to prescribe boilers and other thermal improvements to NHS patients. The ultimate aim was to improve the health and wellbeing of these patients so that in turn we could prevent them turning up at their local doctor's surgery as often as they were.

Pleased with the process we had designed and encouraged by the fact non-medical intervention could be prescribed, we began engaging with our local and North East-based CCG's.

Unfortunately, each time we explained the process and our hopes for the trial, we were told that the CCG's could not commission such a trial. Time and time again each CCG we spoke to, ruled themselves out.

Confused, we spoke to a GP who had initially encouraged us to develop our idea. Instantly he recognised that our offer of allowing people to be healthier and happier in their home would not be a recognised benefit to the CCG, we needed to be able to show how we would help them to 'achieve their non-elective re-admission target'.

This one sentence was to change not only our approach but ultimately the success in getting the scheme off the ground.

We needed to demonstrate how our scheme could deliver success appropriate to the NHS. The idea was sound, we were just looking to present results which were of no value. We then went away and learnt what was important to the CCG. Using their plan on a page we saw how we could weave our project through their stated objectives (see overleaf).

By working more closely with Sunderland CCG it became clearer the Boiler on Prescription idea was not just about helping Gentoo customers to be healthier and happier in their home, it was also about helping CCGs:

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

Overleaf is an example of a CCG Plan on a Page which allowed us to understand how we could help to achieve the CCG targets through an environmental fuel poverty project.

# NHS - Plan on a Page: Better Health for Sunderland

<p>Transforming out of hospital care (through integration and 7 day working)</p>	<p>Transforming in hospital care, specifically urgent &amp; emergency care (7 day working)</p>			<p>Self Care and Sustainability</p>		
<p>Reduce emergency admissions by 15%</p>	<p>Reduce emergency re-admissions by 14%</p>	<p>Increase number of people receiving treatment for IAPT from 12% to 16%</p>	<p>Improve patient experience of hospital care above England average</p>	<p>Improve health related quality of life for people with LTC by 11%</p>	<p>Reduce years of life lost by 7%</p>	<p>Improve diagnoses of dementia from 62% to 68%</p>
<p>Transformational Changes 2014 – 2016</p>						
<p>7 day access</p>						
<p>Community integrated locality teams</p>						
<p>Extension of intermediate care hub</p>						
<p>Improving healthcare in care homes in all localities</p>						
<p>Implement end of life deciding right initiatives in practices</p>						
<p>Mobilise GP led UCC's and A&amp;E Hub / out of hours integration</p>						
<p>Improved community mental health pathways, access and waiting times for all mental health conditions</p>						
<p>Development of dementia friendly communities</p>						
<p>Procure and mobilise the integrated musculoskeletal service</p>						
<p>Reduce procedures of limited clinical value</p>						
<p>Enabled by Contract Management (CQUIN) Joint Commissioning Localities Medicines Optimisation Evidence based approach Research &amp; Development</p>	<p>Governed by System Wide Transformation Board CCG Governing Body Health &amp; Wellbeing Board</p>	<p>Measured by Achievement of outcome ambitions Delivery of QIPR cost reduction plan 2016/17 – 2018/19 of £12m</p>	<p>Values and Principles One system for Health and Social Care Development of team based working across Sunderland Mental and Physical health</p>			

## Patient Identification

Understanding the NHS was difficult. Being commissioned by the NHS to deliver a service whilst understanding the intricacies of patient identification, patient confidentiality, what could be shared, what couldn't, and how the data needed to be anonymised, meant a whole new level of learning had to be undertaken for a provider of social housing.

It took almost a year to work through the practicalities of identifying the patients and then ensuring their data would not be compromised.

The cohort of patients was also shrunk by the fact that when surveyed, some of their homes were already reasonably energy efficient as we used an EPC rating of D or below as a selection criteria.

A domestic energy assessor carried out assessments of patient's homes and produced EPC reports for each property.

We felt that any improvements to properties with an EPC C or above would not be contributing to an improvement in a medical condition and therefore these patients were not considered for the trial.

Some patients were identified by Sunderland CCG as eligible due them suffering from Chronic Obstructive Pulmonary Disease (COPD). However, we established that these patients lived in privately rented properties where their landlord was unfortunately not registered on the Local Authority's Approved Landlord Scheme.

As a result, these patients were excluded from the pilot as the CCG funding could not be used to allow these landlords to fulfil their legal obligations.

From the very beginning we were very conscious of the customer journey. We visited the customers several times before the improvement work commenced in their home to ensure we knew that they were comfortable about the upgrades.

We knew the patients we would be dealing with would be poorly. What we didn't expect was that some of the patients would have very special needs which would require special attention and that can't be under estimated.

In January 2014 six homes were improved with a combination of energy and thermal measures including new boilers, double glazing and insulation, to the homes of patients with Chronic Obstructive Pulmonary Disease (COPD).

Gentoo and Sunderland CCG worked together to monitor patient interactions with the NHS following the installation of the improvements to patients' homes.

A control group was also created with six patients who suffered from COPD. These patients were frequent attendees to their GP and hospital but their homes had not been improved with any thermal or energy efficiency works.

## Results after six months of the trial

After six months of the trial the initial patient data from Sunderland CCG showed the pilot had improved the patients' resilience to fuel poverty, improved the thermal efficiency of the home and consequently reduced the amount of CO2 generated by the property.

The initial findings following the collection of data from Sunderland CCG were:

- 28% reduction in GP appointments
- 33% reduction in outpatient appointments
- Up to 35.6% reduction in gas consumption per month
- Up to £29.91 saving on gas bill per month
- Generally an increase between 2 and 7 SAP points however a maximum increase of 47 points (moving the property from EPC G to EPC D)
- Up to a 42% increase in living room temperature
- Up to 14% increase in bedroom temperature



## Results after eighteen months of the trial

### GP appointments

The most significant impact can be seen in the number of GP appointments with a 60% reduction in the number of appointments needed by those patients taking part in the trial.

### A&E attendances

Attendances at A&E have decreased over the 18 months of the trial by 30%. There is a difference in the winter period pre and post installation with fewer attendances post installation. The cost of these attendances is variable with cost driven by the number of tests and interventions that take place in the A&E department.

### Outpatient appointments

Outpatient appointments have decreased 22% (12 appointments) over the course of the trial. Although in this instance outpatient appointments should not reflect the impact of the trial they relate to planned care for a range of conditions. As a result, it is possible outpatient appointments may not be related to cold related health condition.

### Emergency admissions to hospital

Emergency admissions have decreased by 25% (2 appointments) over the course of the trial.

### Prescription items and costs

There has been no significant change in either the number of items prescribed or the cost of the patients' prescriptions.

### Energy bill savings

Patients' energy bills have reduced on average by 14% as a result of the improvement work carried out in their homes.

## Comparison with 'Warm Homes for Health Study'

You may notice that we have reported on data gathered after six and eighteen months of the trial, but nothing after twelve months.

As previously mentioned earlier in this document, Gentoo is also currently working with Bangor University and Nottingham City Homes on the 'Warm Homes for Health' project.

We realised that our 12 month results would be out just before the 6 month results of our QALY study and we felt it would have been a missed opportunity not to look at the results side by side and see how they compared.

While the size of the cohort and health of the people were very different across the Boiler on Prescription and Warm Homes for Health projects, the hypothesis were the same:

*Had improving the thermal efficiency of a home affected the health and wellbeing of the individual(s) occupying the home?*

Interestingly, participants on the Warm Homes for Health project are reporting significantly reduced interactions with the NHS.

Some headline results from the study are:

- Respondents reported a 5% improvement in main tenant self-rated health status
- Respondents reported one additional room per house was able to be heated as a result of the improvement work carried out
- Respondents reported a 3% improvement in satisfaction with their finances
- Respondents reported a 4% reduction in anxiety
- Respondents reported a 2% increase in their overall happiness
- Respondents reported a 2% increase in their overall wellbeing

## Contact Us

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