



White paper:

Protecting a vulnerable population

Environmental factors putting people at risk

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Introduction

A person's home is supposed to be a safe and comfortable environment, but an estimated 653,000 households in the UK today are putting their own health at risk from living in cold, damp homes (UK Parliament 2023). The English Housing Survey (2020) stated that in 2020, 7.4 million homes in England failed to meet the government's Decent Home standards, with the social rented sector accounting for the highest quantity of homes. Vulnerable people occupy 1.1 million non-decent private homes, with a high proportion over the age of 75. Poor housing costs the NHS 1.4 billion per year but the full cost of this to society is over 18 billion per year (BRE 2021). Resolving some of these issues would not only save over 15 billion per year, but it can also save lives.

This paper will look to highlight the environmental factors that can impact a person's health and wellbeing and the opportunities technology provides to reduce these risks.

Temperature

In the UK we are not known for our warm weather. Our temperatures have dropped down to below -20 degrees (Celsius) in the past with an average annual minimum temperature of 5.3 degrees (Celsius). Throughout the winter of 2021-2022, 45 people per day died from a cold home (NEA 2022). The ONS (2023) reported that there were 13,400 more deaths in the winter than the summer, showing the severity of the impact a cold home has on vulnerable people.

Temperature changes impact our health significantly, especially those that are already vulnerable through age or pre-existing medical conditions. Our bodies are constantly fighting to keep a standard temperature of 37.5 degrees internally to protect our cells from damage. When it is cold, our bodies react by working harder to keep our body temperature safe. This can increase risks of triggering some chronic or acute conditions, highlighted below.

When we get cold our blood becomes thicker. Thicker blood can cause clotting and clots are not good for our body as they can block blood supply to essential areas, causing strokes and heart attacks. Being cold can also impact the bodies' ability to fight infection.

Those who have conditions such as asthma will also find breathing more difficult in the cold, as our lungs will constrict and spasm when they are confronted with cold air, making it harder to take a breath.

We also constrict and become more dormant when we are cold, curling up to reduce surface contact with the air. This in turn can lead to a reduction in eating and drinking and less movement which can lead to reduced strength. All these things will also increase the risk of a person falling in the home.

Cold can also cause poor sleep and insomnia, which can increase or cause mental health issues such as anxiety and depression. Social isolation and loneliness will also be common.

Too much cold can also result in hypothermia, a condition that occurs when the body's core temperature drops too low. When this happens, the brain and nervous system will struggle to function and maintain normal thought.

In April 2022, energy bills increased by 54%, with a further increase of 80% in October pushing the number of people living in fuel poverty to over 2.39 million households. This hike in prices has left some of the most vulnerable in our society having to choose between heat or food. In fact, a report from the National Energy Action found that households that have a low income and a medical condition that requires the use of electric to power medical devices are at risk to have the most impact from price increases, they are also the most vulnerable.

Research found that 70% of UK homes do not have suitable heating controls and those that do will either struggle to use them or choose not to owing to the complexity of programming. The Thomas Pocklington Trust reported that many people with sight loss are unable to use heating controls, and there are countless stories of those living with dementia in their own homes turning the heating up or down causing the home to be at an unsafe temperature. Those with conditions like arthritis or difficulties with hand to eye coordination may struggle turning heating systems on and off, making doing so frustrating and impossible, and leaving the vulnerable person at risk.

Humidity

In December 2020, two-year-old Awaab Ishak died from a respiratory condition caused by a mould infestation in Rochdale Boroughwide Housing Authority. His father was told to "paint over" the mould by the housing authority. The parents had complained three years previous about the damp in their one bedroomed flat and repeatedly begged housing officials for help, to no avail. The courts ruled in a defining case that the 2-year-old had died as a direct result from black mould in the flat.

Around 450,000 homes in the UK have problems with condensation and mould and the verdict from this case has prompted doctors to call for better monitoring of air quality problems in the home.

Mould is caused by excess moisture in the home which can be caused by condensation generated by the way we live, such as drying washing indoors, bathing, and cooking. Measures taken to make our homes more energy efficient can also add to the problem, reducing proper ventilation and allowing moist air to escape. Moulds produce allergens that can cause reactions in our bodies. Mould allergens can be irritants and sometimes toxic. Vulnerable people that are over 65, or have a pre-existing medical condition, especially those that have skin problems, respiratory problems such as asthma or a weakened immune system are more likely to be susceptible to these mould allergens.

Under the Landlord and Tenant Act 1985, Landlords have a statutory duty to resolve mould issues in the home. The average cost of rectifying problems causing an increase in humidity levels are low compared to the cost of mould removal, which, if left untreated, can cost over £2000 to rectify.

Failure to address these issues can result in severe consequences for social housing and cases such as Great Yarmouth Council, PA Housing, and many more have had complaints upheld by the housing ombudsman, resulting in compensation payments for those impacted.

Carbon Monoxide

Carbon monoxide is a poisonous gas that can make someone seriously ill or die if breathed in. Excess levels can be caused by fires and appliances that burn gas, wood, oil, or coal. The gas is both colourless and odourless, and so has been referred to as the silent killer. Symptoms of poisoning include headaches, dizziness, sickness, weakness, shortness of breath, and confusion.

In 2020, 116 deaths were attributed solely to the toxic effects of Carbon Monoxide (ONS 2021) and up to 4000 people attended A&E services across the UK for Carbon Monoxide related symptoms.

In October 2022, the requirements for landlords and social housing expanded to legislate the need for a carbon monoxide detector in any room with a fuel burning appliance. Failure to adhere to this can result in penalties of up to £5000.

Those who are vulnerable such as older people and those living with long term health conditions are more likely to have a more severe reaction to Carbon Monoxide, and even if they are an alarm to notify when unsafe levels have occurred, they are less likely to be able to hear the alarm or react to it.

Conclusion

It is clear that to keep people safe and comfortable in their own homes, we need to look after not only their health, but the environment they live in, especially those classed as vulnerable.

Initiatives such as the prescription of heating (BMJ 2022), and evolution of the TAPPI principles, shows that responding to environmental impact is essential for wellbeing. Research shows that those living in well maintained homes are less likely to have long term health issues and less likely to need urgent hospital care.

Technology has an important role to play in keeping a person safe in their own home. Solutions need to be easy to operate, reliable, and able to alert others of risky changes to a person's home.

Beanbag care works to keep people safe and comfortable in their own homes. To learn more about how Beanbag can help, contact us on:

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We provide technology and services in over 60 countries, enabling our customers to reduce energy consumption, move towards net zero and live in comfort

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