

# Enhancing our homes through digital connectivity

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## Technical briefing

Summary of key issues  
and solutions to inform  
the Good Home Inquiry

September 2021



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# About the Good Home Inquiry

Around 10 million people in England currently live in a home that presents a serious threat to their health and safety – defined by the government as ‘non-decent’ homes.

The Good Home Inquiry, commissioned by the Centre for Ageing Better, will provide an evidence-based analysis of England’s housing policies to determine the causes of, and solutions to, the poor quality of so much of our housing. The Inquiry is led by an independent panel and chaired by David Orr CBE.

The need to act is urgent. We have an ageing population, with one in four of us expected to be aged over 65 by 2050, and yet the UK’s housing stock is the oldest in Europe, and the least suited to deal with the adaptations needed to accommodate the changing needs of an older population.

The quality of our home is critical to our physical and mental health and wellbeing. Poor quality housing costs the NHS £1.4bn a year and has proved to be a factor that determines the likelihood of contracting COVID-19. Indeed, areas of the country where there is high incidence of COVID-19 map very closely to areas with the poorest quality or most overcrowded housing. Similarly, ethnic minority communities that are most likely to experience overcrowded or low-quality housing are also most likely to experience poor health outcomes related to housing.

Climate change offers a once in a generation challenge to transform our homes, and it is also a huge opportunity for us to rethink what a home can be. The UK government has legally enshrined its commitment to reach net zero carbon emissions by 2050, and it cannot do that without addressing the problem of low-quality housing. Despite the daunting scale of the task ahead of us, the retrofit challenge also represents an enormous opportunity to create multiple benefits by acting to improve and adapt our homes at the same time.

The increasing use of digitally enabled technology within the home means that anyone left without a good internet connection or the skills to make use of it will be left at a disadvantage. This will be particularly true if some of the ‘virtual’ services that have been brought in due to the pandemic become commonplace in a post-COVID world. Digital connectivity will therefore be as much a part of what makes a good home as warmth, comfort and safety.

Financing solutions must be found in three key areas: maintenance and repairs; adaptations for ageing populations; and energy efficiency works.

To pay for all of these, we need to develop a variety of innovative financing models – a combination of loans, grant, and third-party funding – and encourage better collaboration between industry and homeowners to bring about the changes required and unleash investment.

The benefits of good homes are wide, ranging from good health, financial stability and independent yet socially connected living. That is why investing in the maintenance and upgrade of our housing stock is not a philanthropic act, but rather a vital investment in a key piece of the nation's infrastructure.

The Inquiry, launched in July 2020, will launch its final report on 16 September 2021. Inquiry Chair, David Orr CBE, is joined by a panel of three leading experts – Lord Victor Adebawale CBE, Vidhya Alakeson OBE, and Pat Ritchie CBE – bringing a diverse range of experience and expertise.

The Inquiry supports the Centre for Ageing Better's goal that by 2030 more people aged 50 and over will live in homes that support them to live healthy and fulfilling later lives.

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### **Centre for Ageing Better**

The UK's population is undergoing a massive age shift. In less than 20 years, one in four people will be over 65.

The fact that many of us are living longer is a great achievement. But unless radical action is taken by government, business and others in society, millions of us risk missing out on enjoying those extra years.

At the Centre for Ageing Better we want everyone to enjoy later life. We create change in policy and practice informed by evidence and work with partners across England to improve employment, housing, health and communities.

We are a charitable foundation, funded by The National Lottery Community Fund, and part of the government's What Works Network.

# Introduction

The Good Home Inquiry considers a ‘good home’ is one that is safe, warm, comfortable and affordable. It now also has to be one that is well connected to the online world as much as the physical one. Digital connectivity is an important minimum requirement for our homes – as important as electricity or gas – as we spend more and more time online and are becoming increasingly reliant on digital tools across all aspects of our lives. However, reliable and affordable digital connectivity is not available to all. By digital connectivity we mean both the infrastructure that keeps us connected (fixed or mobile broadband connection to a home) and the devices in the home that use these connections.

This briefing looks at the barriers and challenges people may face to being connected to this online world. Barriers and challenges might include access to connection, affordability or having the confidence and ability to use devices. This connectivity is the foundation of being able to make use of the benefits of the digital world.

Technology supported by reliable and affordable connectivity is a huge and exciting opportunity to help more people to live better lives for longer in their homes. And this briefing will also explore how digital connectivity can support better outcomes for people and how technological innovations that support homes and the people living in them can be harnessed. In addition, it will discuss some potential policy solutions to ensuring digital connectivity is available to everyone.

The central question is: **How does digital connectivity enable and enhance a good home and how do we ensure everyone’s home is connected?**

As part of the Inquiry, we engaged a range of stakeholders through a series of interviews, meetings and roundtables to explore how digital connectivity can support people in their homes to deliver:

- improved lifestyles,
- better health and wellbeing,
- independence and ability to stay at home for longer

# Why is digital connectivity so important?

Even before the pandemic we were living more of our lives online. We use the internet to work, study, communicate with friends and family, shop, pay bills, book trips and countless other activities.

Connectivity is also increasingly allowing us to make use of health and social care applications including: telecare and telehealth services which allow health and care professionals to monitor and communicate with people in their own homes as well as for people to manage their own health conditions using remote technology, smart technology and meters which allow people to review or control energy consumption, heating and security, and home sensors to monitor and relay information about the condition of homes that might cause health issues such as damp or carbon monoxide.

When a home has a reliable and affordable connection, a householder has a workable device and has the skills and motivation to use the device, there are huge numbers of technological solutions and great opportunities for innovation to enhance people's lives and homes.

Digital connectivity can support basic functions such as controlling heating or lighting, monitoring blood pressure or heart rate but can also help to enhance quality of life and support independence and connection. This illustration from a research project being led by E.ON shows how a digitally connected home can help individuals to meet a hierarchy of needs through a range of digital and technology solutions:

## A 'whole home ECO system' approach

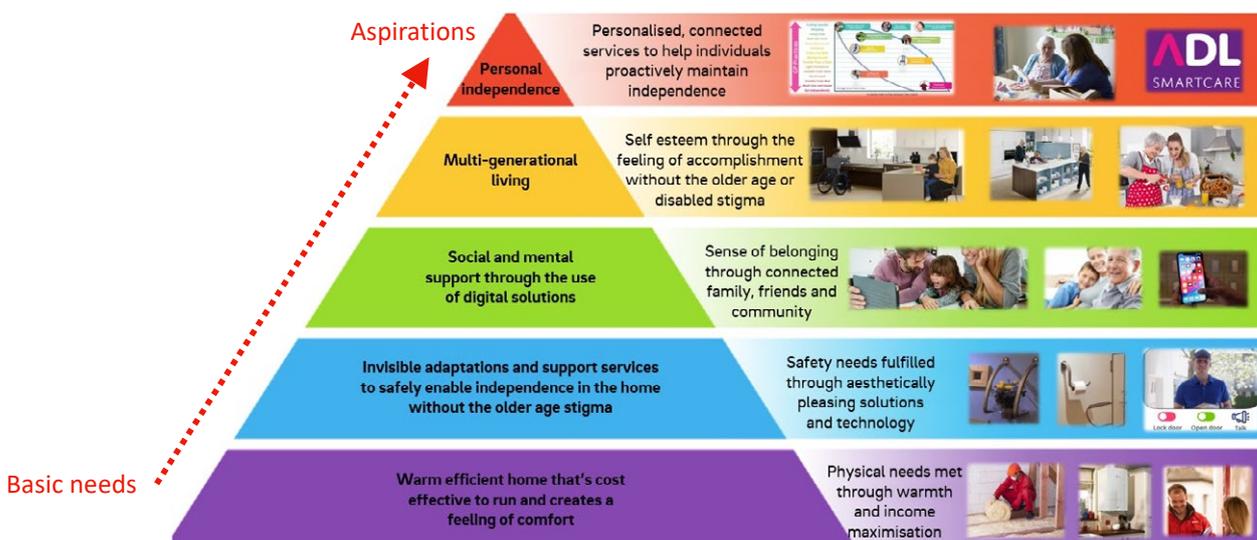


Illustration reproduced with kind permission of the Homes for Living project

## Home maintenance

Technology can be used to improve understanding of the condition of houses with home sensors and other tech used to monitor and relay information about the condition of homes that might affect the fabric of the home and also cause health issues to the householders. This predictive maintenance in housing has huge potential to improve the condition and experience of our homes.

Our Inquiry roundtable heard about one initiative where monitoring is currently being introduced in some social housing in Leeds. The data collected as part of this monitoring of housing condition can also be used to present data back to tenants and help to nudge or change behaviour. For example, helping tenants to understand impact of condensation from drying clothes (including using a tumble dryer) without ventilating a room.

There is potential for similar technology to be used across all housing tenures.

From enabling many more people to work, study, apply for work and benefits from home during the pandemic and beyond to giving householders access to flexible and personalised health and social care services using wearable technology as well as monitoring devices within the home, the opportunities of technology are huge. From opening up chances for people to keep in touch with friends and family, socialise and take part in activities with others from their own homes, to helping those unable or unwilling to engage with keyboard or tablet devices, mechanisms such as voice technology have the ability to extend the opportunities of technology more broadly.

There are also ongoing challenges. Participants in our Inquiry roundtable highlighted the need for ongoing awareness-raising and education on the benefits, potential and opportunities of digital connectivity and the associated applications and devices as well as support for people to understand issues of data use, consent and security. Currently the language of connectivity and technology does not resonate with significant numbers of people, so engagement is a challenge as is getting information to those who need it most and in ways that register with people.

Participants at our Inquiry roundtable described the aspiration for digital technology within the home to be ‘a means not an end – helping people to be safe, comfortable and more in control of their own lives and choices’. Stakeholders we spoke to throughout the Inquiry talked about the accelerating opportunity for digital technology innovations to deliver personalised solutions and the strength of its adaptability to changing needs.

## Why is digital connectivity so important?

The key is technology that helps to put people, their needs and aspirations first. But to unlock that key, homes need to have access to affordable and reliable digital connectivity.

### Inclusive technology

Technologies such as Clevercogs can provide health and social care services through an easy-to-use device but also provide users with opportunities to connect to people, places and activities they are interested in. Clevercogs is an easy to navigate, customisable system provided to Blackwood tenants via a tablet device (with support and training). Each cog links you to a new range of services like Care, Health, Local Information, Communication and Entertainment.

# What is the problem?

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## Access

There are still too many people missing out on the benefits of digital connectivity. According to Ofcom (2021), the proportion of homes in the UK without internet access was 11% before the first COVID-19 lockdown of March 2020. That proportion had fallen to 6% of homes by March 2021. But that increase still leaves around 1.5 million homes without access to the internet. And according to ONS figures, across the UK three million people are offline (ONS, 2020). Of these, 32% or approximately one million people are aged 50-69. The majority (67%) of these were aged 70 or over.

While age is an important factor in whether people are digitally connected – according to Ofcom (2021) 18% of those aged 65 and over are without internet access – it's not just about age, with other groups least likely to have home internet access being:

- lower income households (11% without access)
- and the most financially vulnerable (10% without access)

It's also about where people live. Not all places have the same access to reliable digital connectivity. The National Audit Office (2020) reported that despite better higher speed broadband coverage many people still experience poor broadband speeds, and this varies across areas and property types. For example, only 80% of rural premises were able to access superfast broadband, compared to 97% of urban premises.

Fixed broadband is an essential utility, and mobile data is not a substitute. Mobile coverage in rural areas is an issue too. Though many people may be able to get access through mobile networks, it is insufficient in the long term, and issues of connectivity remain, including uneven coverage and cost.

## The Digital switchover

The move from the old analogue public switched telephone network (PSTN) to a fully digital network is a key driver to get people connected digitally. Otherwise known as the digital switchover, by 2025 analogue telephone services will be switched off as telecoms infrastructure is upgraded and every phone line in the UK will be digital, routing calls over IP (Internet Protocol) rather than traditional PSTN. This transition has already begun and represents both an opportunity – as a driver for change – and a challenge as harder to reach 'offline' cohorts will not migrate organically to IP, which may result in further access challenges and widening of the UK digital divide.

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## Affordability

Cost is a barrier for many people to get online. Those not able to afford fixed connection internet access may rely on limited amounts of mobile phone data, or low cost or free access such as through libraries and community centres. Mobile-only connection is increasingly not sufficient as people want or need to do some or all of the activities listed above online, and fixed connectivity provides the best value (in terms of £/gigabyte).

Around two million households reported an affordability issue with broadband and/or smartphone services in the month before they were surveyed by Ofcom (2021), or do not have internet at home partly due to cost. The 3.3 million households with the lowest incomes in the UK spend on average over 4% of their disposable income on fixed broadband, nearly four times more than the proportion of an average household.

For those who can afford it, understanding what they need as consumers and navigating the deals on offer can still be confusing and many may not be getting the best deal – especially those on a limited income – as pricing is often complex, non-transparent and difficult to navigate. Although ensuring that people can access affordable communications services is a priority for Ofcom, Citizens Advice (2021) reported in June 2021 that 2.5 million people are behind on their broadband bills with 700,000 of these falling into the red during COVID-19.

While broadband and mobile services in the UK are often considered to be quite reasonably priced when compared with the rest of the world or even other utility services, for those on a low income they remain unaffordable (Ofcom, 2020):

- On average **nearly one in five (19%) reported at least one affordability issue** with their communications services in the last month, corresponding to around 4.7 million households.
- Some groups are more likely to have experienced an affordability issue, including households with somebody currently **unemployed and looking for work** (38%), young people aged 18-24 (29%), or a resident with an impacting or limiting condition (29%).

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## Impact of COVID-19

The pandemic has accelerated the delivery of online services which makes lack of access a more important issue. It has also seen increased online usage. Research from Age UK (2021) found that over a third of people (39%) aged 52 or older in England stated they were using the internet more since the start of the pandemic. However, this usage has increased most among groups already using the internet regularly. There was little evidence that

significant numbers of those previously digitally excluded have been prompted to get online during the first few months of the pandemic.

During the pandemic many people who previously made use of low cost or free internet in places such as libraries, community centres or cafes found their sources were lost.

During the pandemic, the internet enabled access for many to health appointments, buying groceries, working from home for some, and a constant influx of information. But a growing reliance on the internet to deliver goods and services has meant inequalities for those who were not able to access or use the internet were made worse. And as many services that moved online during the pandemic look set to stay that way, there is a real concern that these inequalities will remain.

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## Keeping services both off and online

There will always be some people who cannot or do not want to access services and opportunities online. While there are already some services or opportunities that are now digital only, it is vital that the needs of those who cannot or will not go online are met. There is a danger that through moving services (or keeping services that moved online during the pandemic) online, we are baking in inequalities for the future for people who won't be online.

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## Confidence and skills

Lots of people don't use or are under-using digital technology, even if they have access to reliable and affordable connectivity. In addition to digital connectivity, people must have both digital skills and confidence to ensure they can make the most of the connected home now and all its potential in future.

The Centre for Ageing Better commissioned digital inclusion charity, Citizens Online, to assess the effect of Covid-19 on accessing digital skills support which is vital to supporting people to get and stay online. The research found that there is a significant digital divide among 50–70-year-olds, exacerbated by the pandemic (Ageing Better, 2021). Many people, for the first time, have had to rely on the internet and digital devices to access support, get things done and to participate more fully in society. This research also found that there is a lack of awareness among older adults of the local support available. The overwhelming majority (87%) of participants in our study were not aware of an organisation that could help them if they needed it, despite the prevalence of local support.

# What are the solutions?

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## Addressing access issues

There is a strong policy drive to ensure homes are connected to fixed fibre broadband.

Initiatives led by Ofcom include the **broadband universal service obligation (USO)** where since March 2020 consumers have been able to request a decent broadband connection (a download speed of 10 Mbit/s and an upload speed of 1 Mbit/s), up to a cost threshold of £3,400. In 2021 Ofcom set out a proposed regulatory framework to support **investment in full-fibre networks** (Wholesale Fixed Telecoms Market Review). Current provider plans could see at least 50% full-fibre coverage of the UK within five years. In addition, Ofcom provided technical advice to the government on the mobile network operators' proposals for a 'shared rural network' (SRN) which will help propel 4G coverage across the UK.

The Digital Infrastructure Directorate in the Department for Digital, Culture, Media & Sport (DCMS) is leading **Project Gigabit**. This broadband roll-out scheme is available to 40% of homes and businesses and likely to reach over half of premises by the end of 2021 (c.60%). In addition it is focused on providing gigabit broadband to hard to reach homes and businesses, and to making the UK a world-leader in 5G by accelerating the deployment of 5G networks. The National Infrastructure Strategy outlines how the Government is working with industry to target a minimum of 85% gigabit-capable coverage by 2025.

However, there are some homes that will remain difficult and expensive to get connected. There are live questions on how to support people who will not be able to get fixed broadband. Ofcom (2019) states that 95% of premises served by Openreach are connected for fibre broadband but the remaining 5% are likely to be the most challenging to connected. Solutions to this challenge could include using satellite, 5G or TV technology but will need to be addressed to ensure all households have access to reliable and affordable digital connectivity.

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## Addressing affordability issues

Social tariffs make it cheaper for those on low incomes to be able to afford their broadband. Ofcom currently strongly encourages broadband providers to introduce social tariffs but has stopped short of enforcing a mandatory social tariff.

There are four companies who offer a social tariff to people in receipt of Universal Credit and other benefits, and only BT and Virgin are nationwide providers. BT launched their Home Essentials tariff in June 2021 – expanding eligibility to all recipients of Universal Credit and upgrading the service to fibre. Virgin Media and Hyperoptic both launched social tariffs recently.

However, both uptake and awareness of social tariffs is very low. Ofcom (2021) found that only around 40,000 households have signed up to one of the social tariffs. This equates to 0.15% of all UK homes or only 1% of those on out-of-work benefits. There is a huge shortfall in take up and it is incumbent on providers to raise awareness of these tariffs and promote them to people who are eligible.

Participants at our Inquiry roundtable discussed the importance of clarity and transparency in pricing for Internet access and broadband services. There was concern that current pricing structures, complex offers and ‘bundles’ can lead to confusion and result in customers taking out contracts that include services that they do not require and are more expensive than necessary. One solution could be a requirement – as with other utility providers – for ISP’s not to penalise loyal customers by giving better deals to new customers.

Data Poverty Lab is a collaborative project and partnership between Good Things Foundation and Nominet. Building on the fantastic initiatives that sprang up to tackle data poverty (the inability to afford a sufficient, private and secure internet connection to meet essential needs) during the pandemic, the Data Poverty Lab will collaborate with public, private and community sector organisations to develop sustainable solutions to end data poverty. <https://www.goodthingsfoundation.org/data-poverty-lab/>

# Conclusion

From the interviews, roundtables and discussions carried out during the Good Home Inquiry we understand that the foundation for ensuring everyone can take full advantage of the opportunities and potential of digital connectivity is access to an affordable and reliable fixed fibre digital connection. With this foundation, a workable device and skills and confidence to use the technology, technology can support people to make the most of their homes across all tenures and enhance their lives within them.

To support this we recommend:

Fixed fibre broadband is the foundation to allowing everyone to enjoy the benefits of connectivity. Therefore fixed fibre broadband connection should be included in an improved, revised Decent Homes Standard and applied to all tenures to reflect expectation of digital connectivity in a home as on a par with the expectation of access to water, gas and electricity. This is the foundation for everyone to enjoy the benefits of connectivity.

Reliable broadband should be made affordable for all. Government should work with providers holding them to account to provide and promote affordable tariffs – including social tariffs – and agree a more generous Universal Service Obligation to support people living in those homes which are most challenge to connect to get digitally connected.

Awareness raising and information regarding digital connectivity and its benefits and opportunities are very important to building public awareness and understanding. There is a role for a Good Home Agency – a national network of local delivery agencies – to provide in person and online information and support on digital connectivity.

# Resources, information and campaigns

## Ofcom

<https://www.ofcom.org.uk/home>

Ofcom is the UK's communications regulator who regulates the TV, radio and video on demand sectors, fixed line telecoms, mobiles, postal services, plus the airwaves over which wireless devices operate. Our mission is to make communications work for everyone. Information available on their work on Broadband Universal Service Obligation (USO), Shared Rural Network, Fairness for Customers etc.

## Lloyds UK Consumer Digital Index 2021

<https://www.lloydsbank.com/banking-with-us/whats-happening/consumer-digital-index.html>

Largest UK measure of digital capability and financial behaviours: 1 million people and interviewed over 16,000 consumers. The 2021 report documents how the digital landscape has changed over the period of the pandemic.

## Good Things Foundation

<https://www.goodthingsfoundation.org/our-network/about/>

The UK's leading digital and social inclusion charity, funded by DCMS. Our network of community partners, free online learning resources, and support from corporates, trusts, government and others, has helped over 3 million people get, and progress online since 2010.

Good Things Foundation coordinates the **Online Centres Network**.

<https://www.onlinecentresnetwork.org/>

Joining the dots with other organisations, helping people to navigate a complicated world in order to become happier, healthier and better off. The Online Centres Network is made up of thousands of hyperlocal organisations who transform lives and can be found in libraries, fish & chip shops and mobile buses.

The Good Things Foundation's **100% digitally included** report is a blueprint of what government needs to invest in eg supporting infrastructure around digital inclusion (mobile coverage, hard infrastructure and soft infrastructure).

<https://www.goodthingsfoundation.org/wp-content/uploads/2021/01/blueprint-for-a-100-digitally-included-uk-0.pdf>

### **Digital Nation 2020**

<https://www.goodthingsfoundation.org/insights/building-a-digital-nation/>

Infographic that gathers together facts and stats about digital inclusion and exclusion in the UK. Updated in September

### **#ClickZero campaign**

<https://www.clickzero.uk/>

#ClickZero is a campaign calling for essential online public services to be provided free for everyone. Unlike for telephone calls, which can offer 0800 numbers or calling emergency services for free, websites can't make their sites free to access - unless they are 'zero-rated' by the mobile operators or broadband providers.

Zero-rating simply changes who shoulders the cost - from the 'recipient' to the 'sender', from the customer to the provider.

### **The Ada Lovelace Institute**

<https://www.adalovelaceinstitute.org/>

An independent research institute and deliberative body, funded by the Nuffield Foundation Its core belief is that the benefits of data and AI must be justly and equitably distributed, and must enhance individual and social wellbeing

### **COVID-19: Digital Health Trends & 2021 Opportunities Report**

<https://orchahealth.com/covid-19-digital-health-trends-2021-opportunities-report/>

Information to share the needs and behaviours of the public and health professionals and the health apps being used and future trends.

### **Homes for Living**

<https://www.ukri.org/news/innovative-projects-ensure-better-health-and-connectivity-as-we-age/>

This programme is match-funded by the UK Research and Innovation (UKRI) healthy ageing challenge. It is a collaboration between E.ON, Newcastle University, Invisible Creations® and ADL Smartcare.

It aims to support people to age well so they can stay in their own homes for longer, helping retain their independence and staying connected with their families.

It builds on the E.ON's existing activity offering free and partially funded energy efficiency measures as part of the Warm Homes Fund scheme and Energy Company Obligation.

**Social tariffs and low-cost options (as of September 2021)**

Hyperoptic Fair Fibre

<https://hyperoptic.com/>

KCOM Flex

<https://www.kcom.com/home/packages/apply-for-a-flex-package/>

BT Home Essentials

<https://www.bt.com/exp/broadband/home-essentials>

Virgin Media Essential Broadband (existing customers only)

<https://www.virginmedia.com/help/essential-bb>

If a customer isn't eligible for the social tariffs above, the [Choose](#) website is one way to source lower cost options.

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Let's take action today for all our tomorrows.  
**Let's make ageing better.**



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The Centre for Ageing Better creates change in policy and practice informed by evidence and works with partners across England to improve employment, housing, health and communities. Ageing Better is a charitable foundation, funded by The National Lottery Community Fund.

