Centre for Ageing Better

Homes, health and COVID-19

How poor-quality homes have contributed to the pandemic

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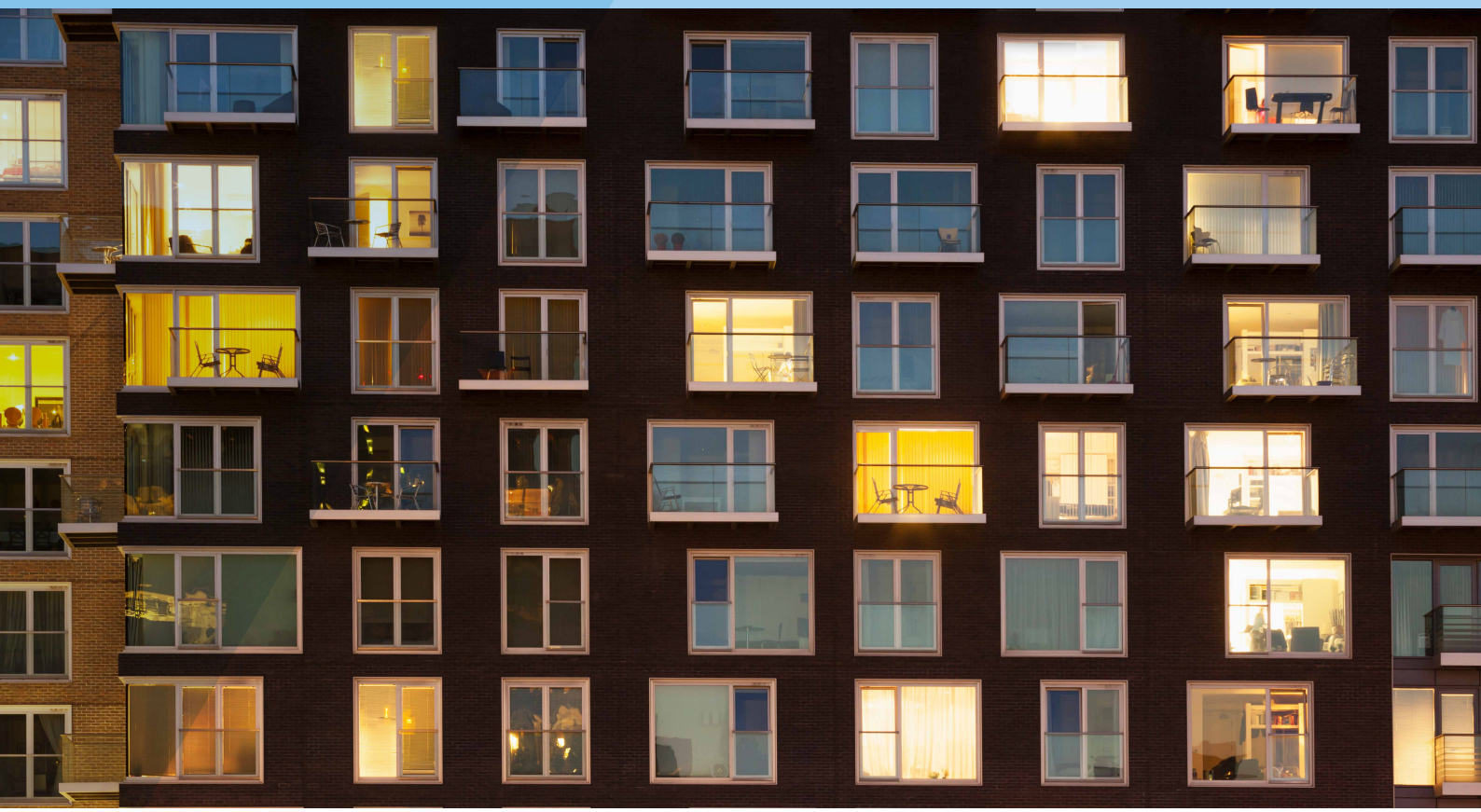

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About us

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.

The King's Fund

The King's Fund is an independent charity working to improve health and care in England. We help to shape policy and practice through research and analysis; develop individuals, teams and organisations; promote understanding of the health and social care system; and bring people together to learn, share knowledge and debate. Our vision is that the best possible health and care is available to all.

About this report

This paper is based on a literature review and analysis conducted by Clair Thorstensen-Woll (lead author), David Buck and Chris Naylor at The King's Fund, commissioned by the Centre for Ageing Better. The report summarises what existing research tells us about the role and impact of poor quality housing on health, particularly in the context of the COVID-19 pandemic.

Disclaimer

Foreword

We are enduring one of the worst public health emergencies in living memory. The immediate threat to life is coupled with warnings about the longer-term consequences for our physical and mental health, a global recession that could tip millions into financial insecurity and poverty, and changes to the way we interact with one another that could endure far beyond the current measures such as shielding and social distancing.

The COVID-19 pandemic illustrates the fragility of our lives and how our overall wellbeing is based on the sum of our experiences across different areas of life. At the Centre for Ageing Better we want to make changes to health, work, housing and communities, so that everyone can enjoy a good later life.

This report focuses specifically on the relationship between health and housing and the role of this interaction in the spread and impact of the COVID-19 pandemic. Authors of this report from The King's Fund present compelling evidence that show how our homes can cause ill-health, both physical and mental. Cold, damp homes can cause or worsen a series of health conditions linked to coronavirus. Overcrowding reduces a household's ability to isolate those who are at particular risk or displaying symptoms. Trip hazards, little space, poor internet connection, a lack of access to green space – these and many other issues have consequences for people's health, heightened by a period of lockdown where many of us were forced to spend 23 hours of the day indoors.

These experiences are not equally shared; the research is clear that some groups are more likely to live in poor quality housing than others. The disproportionate number of deaths from COVID-19 in BAME communities can be explained in part by the conditions in which people live (Public Health England, 2020).

Our goal is to ensure that everyone can live in a safe and accessible home in later life. In order to achieve that we need to address the fact that 4.3 million households - approximately 10 million people - live in what the government define as a 'non-decent' home that could put their health and wellbeing at risk. To that end, we are supporting The Good Home Inquiry which aims to bring together new and existing evidence, a range of stakeholders and the public to develop a consensus on what needs to change and how.

The Good Home Inquiry will conclude its work next year with detailed recommendations for change. In the meantime, there are several broader actions, drawing on the research in this report, we believe national government and others should consider:

- Increase levels of collaboration between health and housing at the local level. Health and wellbeing boards, sustainability and transformation partnerships, and integrated care systems should include housing as a focus.
- Address the poor state of existing homes. National and local government should protect people from the effects of damp and mould, trip and falls hazards, and fuel poverty on their physical and mental health in preparation for a potential second wave and lockdown in winter months.
- Focus support on those with the greatest risk of housing-related health inequalities. Older people, people with existing health conditions, those with lower incomes and people from ethnic minority groups are also often more vulnerable to COVID-19.
- Local and national government should consider the broader impact of shielding and lockdown on people's wellbeing. Access to green space, face to face and digital social connections and local amenities varies significantly between communities and has an impact on people's physical and mental health.

If these recommendations were acted upon, we would be in a stronger position to recover from COVID-19 (in terms of our health but also economically) and be better prepared to withstand other public health emergencies. The health of our population is indelibly linked to the health of our homes. We must act now.

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Key messages

- **Poor-quality housing has a profound impact on health.** The condition of homes, insecure tenure, and wider neighbourhood characteristics all have a considerable effect on health and wellbeing.
- **The COVID-19 pandemic has exposed and amplified housing-related health inequalities.** Social distancing measures have meant that many people are spending more time in homes that are hazardous, unsafe and lack security of tenure. Inadequate housing conditions, such as overcrowding, can also lead to increased risk of viral transmission.
- **Groups in the population who are more likely to live in poor housing are often the same groups who are vulnerable to COVID-19** and other health conditions, including older people, people with existing health conditions, those with lower incomes and people from ethnic minority groups.
- **Living in a cold, damp home has a significant impact on health** – in England, around one in five excess deaths during winter are attributed to cold housing. If social distancing measures continue into the winter months, the effects of fuel poverty on both physical and mental health may escalate. Spending extended periods exposed to damp and mould is likely to exacerbate or induce respiratory and cardiovascular conditions, in turn increasing the risk of contracting COVID-19.
- **Overcrowded housing poses a significant health risk and is more common among ethnic minority groups** including Bangladeshi, Pakistani and Black African households. People who live in homes where multiple generations are living together have been found to have poorer outcomes during the pandemic.
- **One of the major causes of death, injury and decline among older adults is falls in the home;** often a result of inadequate adaptation and maintenance. Social distancing measures and financial insecurity may have exacerbated these risks by leading to essential works to the home being delayed, particularly for shielded households.
- **The quality of the built environment is associated with mental and physical health outcomes.** Living in an area with more green space is linked to reduced mortality from cardiovascular conditions. During lockdown, the effects from the lack of access to these spaces is already emerging.
- **Interventions to improve housing quality, both in and outside of the home can be a highly cost-effective means of improving health outcomes.** Every £1 spent on improving warmth in homes occupied by 'vulnerable' households can result in £4 of health benefits, while £1 spent on home improvement services to reduce falls is estimated to lead to savings of £7.50 to the health and care sector.

- **More collaborative efforts are required across the health and housing sectors to reduce health inequalities** and improve the health and wellbeing of vulnerable population groups. To achieve a cross-sectoral, population health focused approach to policymaking, structures such as health and wellbeing boards, sustainability and transformation partnerships and integrated care systems create a forum through which this could happen. However, in most cases these bodies have not yet done enough to integrate housing into their work.

Of the 23.5 million homes in England, 18% are in a 'non-decent' condition.

(Ministry of Housing, Communities & Local Government, 2020)

Introduction

There is indisputable evidence that housing is a significant social determinant of health. Particularly in the current context of the COVID-19 pandemic, homes are where we spend a large proportion of our time. It is, therefore, vital that these homes provide a safe, warm and stable environment to live in. However, according to latest figures, 4.3 million homes in England do not meet the national standard to be considered in decent condition (Ministry of Housing, Communities & Local Government, 2020).

It is estimated that the cost of poor housing to the NHS in England is at least £1.4bn a year (Nicol et al., 2015). Poor-quality homes – those that are in physical disrepair, are cold and damp, inaccessible, or not of appropriate size for the residents - are associated with negative health outcomes, including cardiovascular and respiratory conditions and a decline in general physical and mental health. The 'home' is more than the four walls of the house. The area we live in, stability of tenure and the affordability of housing have also been found to have a significant impact on health and wellbeing.

Groups that experience health inequalities are disproportionately represented in poor-quality homes; including older adults, people with long-term conditions and disabilities, black and ethnic minority groups and low-income groups. Existing health inequalities place these groups in a particularly vulnerable position in relation to the impact poor housing has on health.

COVID-19 has exacerbated the link between housing and health in two interrelated ways: some conditions of poor housing, such as overcrowding, have led to increased transmission of the virus; and the lockdown measures taken to control the virus have led to those living in poor housing facing increased exposure to the conditions that result in worsening mental and physical health.

The following report reviews the existing literature on the association between housing and health. Sections 1 and 2 offer an insight into the current context of poor housing. Section 3 identifies the key pathways in which poor-quality housing can impact health and considers the implications of the coronavirus in this relationship. The final section reviews various housing interventions that have been found to improve health and prevent ill-health.

1. The current housing landscape

Of the 23.5 million households in England, 18% were in a 'non-decent' condition in 2018-19[1] (Ministry of Housing, Communities & Local Government, 2020).

The Decent Homes Standard underpins the minimum condition for housing and includes the Housing Health and Safety Rating System (HHSRS): a risk assessment procedure. Homes are required to meet four key standards to be considered decent (Ministry of Housing, Communities & Local Government, 2006):

- Is free of Category 1 HHSRS hazards[2]
- Is in a reasonable state of repair
- Has reasonably modern facilities and services
- Has efficient heating and effective insulation

1 Those living in institutions such as care homes and prisons are excluded from this review.
2 HHSRS Category 1 hazards include elements of housing that do not meet the physiological and psychological requirements and do not protect against accidents and against infection (Ministry of Housing, Communities & Local Government, 2006).

	Total number of households	Number of non-decent households*	Percentage of non-decent households
Owner occupied	15m	2.6m	17%
Private rented sector	4.5m	1.1m	25%
Social rented sector	4m	480k	12%

Table 1. Distribution of households in England by tenure and in non-decent condition (Source: Ministry of Housing, Communities and Local Government, 2020).

*approximate number of non-decent homes.

The greatest number of non-decent houses in England are owner-occupied. Approximately 2.5m owner occupied households (17%) fail to meet the standards. However, proportionally, households within the private rented sector are more likely to be in poor condition. Approximately 1.1m households in the private rented sector (25%) were in non-decent condition, compared to 17% of owner-occupied houses. Table 1 lists the percentage of households in each tenure type and the percentage in non-decent condition.

There is an unequal risk of living in a non-decent home. Such homes are occupied disproportionately by older people, low-income households, people from ethnic minority groups and people with existing health conditions (Sharpe et al., 2019). Moreover, most of the housing stock is poorly designed for the rapidly ageing population (Adams, 2016; Park and Porteus, 2018; Torrington, 2015). Almost half of all non-decent homes are lived in by someone over the age of 55 (Ministry of Housing, Communities & Local Government, 2020). This, combined with the figures showing 73% of over 55 year olds live in owner-occupied households, places particular concern for this group living in poor housing (Ministry of Housing, Communities & Local Government, 2020).

2. Identifying poor-quality homes

The Decent Homes Standard identifies the minimum standard of condition homes are required to meet. However, the existing literature identifies many other elements of housing that determine its quality that are not included in these statutory standards (Gelormino et al., 2015; Public Health Wales, 2015).

To support a more comprehensive understanding of the various aspects of a poor-quality home, in this review we have divided the different characteristics of housing into 4 categories:

Characteristic	Examples
Internal housing condition	Excess cold or heat, dampness, poor ventilation and air quality, pollutants and toxins, overcrowding, accessibility, inadequate lighting and excessive noise, structural and safety hazards (e.g. falls on uneven surfaces or stairs; fire and electrical safety), infestations and poor hygiene
Security of tenure	Stability, frequent moves, homelessness
Affordability	Availability of affordable housing, maintenance and repairs
Area characteristics	Access to amenities, healthcare, green space and technology, levels of deprivation and crime, population density

Table 2. Features of housing characteristics

It is estimated that 2.5m people in England are unable to afford the rent or mortgages of their homes.

By the internal housing conditions, we refer to elements of poor quality associated with the HHSRS Category 1 hazards (Office of the Deputy Prime Minister, 2006). The most common aspects of a poor-quality home are excess cold and risk of falls involving stairs, constituting around 80% of all Category 1 hazards in England (Garrett and Burris, 2015). In 2018, 11% of households had a Category 1 hazard, but were more prevalent in the private rented sector (Ministry of Housing, Communities & Local Government, 2020).

Housing affordability and tenure are both associated with the quality of homes (Age UK, 2019; Gibson et al., 2011; Swope and Hernández, 2019). Together, they are both important factors to consider in determining the exposure to poor-quality housing. Many people live in poor-quality homes as a result of a lack of affordable housing options or the high costs of running and maintaining a home. Shelter have defined 'affordable' housing as costing no more than 35% of the household's income (Bibby, 2015). It is estimated that 2.5m people in England are unable to afford the rent or mortgages of their homes (National Housing Federation, 2019). The relationship between affordability and tenure can impact the psychological feelings of 'home' as a result of the precariousness of tenure security and stability (Gibson et al., 2011; Swope and Hernández, 2019).

The location of a home influences access to green space (Gobbens and van Assen, 2018; Swope and Hernández, 2019) and access to amenities such as healthcare and shops (Gibson et al., 2011; Trecartin and Cummings, 2018). The spatial context of housing also contributes to, and is affected by, levels of deprivation (Gibson et al., 2011) and levels of crime (Clair and Stuckler, 2016; Public Health Wales, 2015).

Policy framework

A number of national and local initiatives have been implemented to ensure that occupants' health and safety is ensured. Policy has focused on different aspects of the home. The Decent Homes Standard focuses on the physical state of the home, however, it is recognised that the home is more than the physical fabric. The Better Care Fund as well as the Health and Housing Memorandum of Understanding3[3] (Public Health England, 2018) recognise the role of secure housing in health promotion through working in partnership with multiple health and housing agencies. At a local level, there have been efforts to ensure the role of housing as a determinant of health is considered as part of the work of key health bodies such as Health and Wellbeing Boards and Sustainability and Transformation Partnerships (STPs). The most recent step in the evolution of these structures for local partnership-working is the aspiration that all STPs become Integrated Care Systems (ICSs) by April 2021. In theory, structures such as these create a forum through which the health and housing sectors could be brought together. However, in practice, the relationship between health, social care and housing partners requires strengthening. Many STPs and ICSs, with some exceptions, have not yet successfully integrated housing into their work (Buck and Gregory, 2018).

3 A partnership between NHS England, Public Health England, Association of Directors of Adult Social Services, the Homes and Communities Agency, the Local Government Association and other housing and health sector organisations.

3. The impact of poor-quality housing and the COVID-19 pandemic

The evidence is clear that poor-quality housing has a profound impact on health. High-quality reviews and empirical studies find consistent evidence that the internal condition of the home, tenure and affordability and area characteristics have considerable impacts on health and wellbeing. Highlighting the gravity of the situation, poor housing is estimated to cost the NHS at least £1.4bn per year in England (Nicol et al., 2015)[4]. For over 55 year olds in poor housing, the NHS spends £513m on first year treatment costs alone (Centre for Ageing Better, 2020).

Nearly a third of adults in Britain (31%) reported having had physical or mental health problems because of the condition of their homes during lockdown

The COVID-19 pandemic has exposed and amplified housing-related health inequalities in two ways. The emerging research suggests an association between accelerated transmission of the virus and areas of poor housing, having significant impacts on groups who tend to live in poor housing: older people, people with existing health conditions, those with lower incomes and people from ethnic minority groups. Secondly, the measures taken to control the virus have led to deepening health inequalities. The home has been the centre of

4 This figure covers the direct effects of Category 1 hazards on physical health conditions and their costs to the NHS and is, therefore, an underestimate.

most people's lives during the pandemic as a result of social distancing guidance. The impact of lockdown on many of those in poor housing has been significant. In a recent national survey, nearly a third of adults in Britain (31%) reported having had physical or mental health problems because of the condition of their homes during lockdown (National Housing Federation, 2020). This section will review the existing evidence associating housing with health and reflect on the implications of the coronavirus pandemic, both directly and indirectly.

Cold and damp homes

Living in a cold, damp home has significant, demonstrable impacts on health. Being unable to effectively heat the home, resulting in excess cold and damp conditions, is linked to several chronic health problems, including respiratory and cardiovascular conditions, rheumatoid arthritis, and poor mental health (Communities and Local Government Committee and Betts, 2018; National Institute for Health and Care Excellence, 2016; Office for National Statistics, 2020a; Thomson et al., 2013; Watson, 2019). It is estimated that 21.5% of excess winter deaths are attributed to cold housing (Geddes et al., 2011). In 2018/19, respiratory conditions were the leading cause of excess winter mortality, followed by cardiovascular disease (Office for National Statistics, 2019a).

Low indoor temperatures may result in damp and mould in the home which, in turn, can impact on air quality. Asthma, emphysema and COPD have been linked to living in a cold home (Sharpe et al., 2019). A repeated cross-sectional survey found inadequate heating, insulation and ventilation may lead to exposure to allergenic spores placing asthma sufferers at high risk of further complications (Poortinga et al., 2017). For children and adults over 55 years old, these risks of associated respiratory conditions from cold and damp are profound (Gibney et al., 2018; Ige et al., 2019).

Cold homes are also associated with a heightened risk and exacerbation of circulatory health conditions. Cold environments are found to increase the risk of cardiovascular conditions such as hypertensive heart disease, heart attack, and acute stroke, particularly in older adults (Communities and Local Government Committee and Betts, 2018; Sharpe et al., 2019).

The effects of living in a home with inefficient heating extend beyond physical health. In a review of evidence, Liddell and Guiney (2014) highlighted the various ways that cold and damp homes impact on psychological wellbeing. Thermal discomfort, persistent worry about debt and affordability of heating and the potential damage of possessions from living in a home with inadequate heating were found to contribute to poorer mental health. Their review, in addition, points to indirect effects on wellbeing resulting from cold homes. The stigma and social isolation that may accompany a cold home were found to have detrimental impacts on mental health (Liddell and Guiney, 2014). These findings are consistent with a later review linking cold housing with loneliness and fewer social activities, particularly among older adults (Gibney et al., 2018).

The measures taken to control the virus has meant spending more time in homes that are damp, contain mould, are physically hazardous and unsuitable.

It is too early to see the full effect the COVID-19 pandemic has had on the relationship between housing and health. However, there are some inferences to be drawn from the existing literature. For some, the measures taken to control the virus has meant spending more time in homes that are damp, contain mould, are physically hazardous and unsuitable. In the short term, it can be expected that these poor

internal conditions will have a significant impact on mental health. Spending extended periods exposed to damp and mould is likely to exacerbate or induce respiratory and cardiovascular conditions, in turn, putting these groups at greater risk of worse outcomes from COVID-19. People with pre-existing conditions, including those with respiratory and heart conditions, are placed at 'high to moderate risk' from coronavirus (NHS England, 2020). This risk is increased for older people and black and ethnic minority groups with existing health conditions: especially among older Bangladeshi, Pakistani and Black Caribbean populations (Elwell et al., 2020; Platt and Warwick, 2020). These are groups that are more likely to live in homes with poor housing conditions (de Noronha et al., 2019; Garrett and Burris, 2015; Public Health Wales, 2015).

There are concerns that if social distancing measures are to continue into the winter months, when people are more reliant on heating systems to make their homes both safe and comfortable, the effects of fuel poverty on both physical and mental health will escalate, particularly among older people.

Crowded conditions

One area of housing that is increasingly recognised as influencing the unequal outcomes of COVID-19 and the experiences of lockdown is overcrowding. The English Housing Survey shows that the percentage of overcrowded households has reached its highest, at 3.4% in 2018/19 (Ministry of Housing, Communities & Local Government, 2020). The reasons for crowded houses are multifaceted. For some households, living with multiple generations in the same home may yield social benefits. However, for many, overcrowding is not a choice and rather a circumstance of lack of affordable alternatives and saving of costs (Swope and Hernández, 2019).

Living in cramped conditions is related to the development and exacerbation of several health conditions (Reynolds, 2005; Swope and Hernández, 2019). For children living in crowded spaces, the onset and worsening of asthma is well documented (Reynolds, 2005; Swope and Hernández, 2019). In addition, there is consistent evidence associating poorer mental health and living in crowded homes (Shankley and Finney, 2020). Depression, stress and anxiety have all been reported by households in cramped living conditions (Reynolds, 2005; Swope and Hernández, 2019).

Of the 20 local authorities with the highest COVID-19 mortality rates, 14 have the highest percentage of households living in homes with fewer bedrooms than needed.

People who live in homes where there are more people than bedrooms, and where multiple generations are living together have been found to have poorer outcomes during the pandemic. There is emerging evidence to suggest that household composition is related with the transmission of COVID-19 (Ukachi et al., 2020; You et al., 2020). Crowded housing, with shared washing facilities, makes it difficult to socially distance at home and avoid cross contamination (Elwell et al., 2020). Inside Housing analysis indicates areas that have more overcrowded houses have seen the worst outcomes from COVID-19 (Barker, 2020). Of the 20 local authorities with the highest COVID-19 mortality rates, 14 have the highest percentage of households living in homes with fewer bedrooms than needed. Moreover, findings from the New Policy Institute indicate that the proportion of people over 70 years old in a local authority area who share a household with people of working age was confirmed to be a significant factor in accounting for the variation in the number of

COVID-19 cases across England (Holden and Kenway, 2020). Earlier research iterates that there is an increased risk of the spread of communicable disease through living in overcrowded housing (Ziersch and Due, 2018).

30% of Bangladeshi households, 18% of Pakistani and 16% of Black African households experience overcrowding compared to 2% of White British households.

Overcrowding may partly explain the disproportionate mortality rate of people from ethnic minority groups. Evidence shows that people from ethnic minority groups are more likely to live in crowded homes; 30% of Bangladeshi households, 18% of Pakistani and 16% of Black African households experience overcrowding compared to 2% of White British households (Office for National Statistics, 2018). Public Health England (2020) published a review into why black and ethnic minority groups have been disproportionately affected by the pandemic. It identified poor housing conditions and housing composition as contributors to the increased acquisition and transmission of coronavirus within these groups.

It is estimated that 30,000 people are living in a home consisting of one room during lockdown (National Housing Federation, 2020). Early analysis has found that cramped conditions during lockdown is having a negative impact on people's mental wellbeing. Our usually separate spaces of home, work and school have now merged into one area for many. Where physical space is limited, people have reported worse mental health; more than one in ten people have felt depressed during lockdown because of lack of space in their home (National Housing Federation, 2020).

Physical hazards

The physical conditions of homes; the design, construction and maintenance, and presence of safety equipment influence household health (Boch et al., 2020). Living in a home that is in physical disrepair is associated with negative impacts on health including increased risk of injury, reduced mobility, bone joint conditions, and mental health conditions (Garrett, 2016; Gibson et al., 2011; Swope and Hernández, 2019; Trecartin and Cummings, 2018). Certain groups are more likely to live in households where physical hazards are present, and the same groups are more prone to the potential impact on their health. For older adults, people with multiple, long-term conditions and disabilities, a home that is safe and accessible is paramount to their independence, safety and wellbeing. The English Housing Survey, however, estimates that 20% of homes headed by occupants over the age of 65 contain none of the key accessibility features (Garrett and Burris, 2015). Only 7% of all homes meet the minimum standard of accessibility (Office for National Statistics, 2020a).

20% of homes headed by occupants over the age of 65 contain none of the key accessibility features (Garrett and Burris, 2015). Only 7% of all homes meet the minimum standard of accessibility.

One of the major causes of death, injury and decline among older adults is falls in the home. Poor physical conditions of the home, including inadequate lighting, uneven surfaces and structural deficiencies, increase the risk of injury and falls. The impact from these hazards are not only immediate but can precipitate decline in general wellbeing in older adults (Communities and Local Government Committee and Betts, 2018).

Moreover, the evidence suggests that income group and tenure are likely to influence the risk of falls and injury in the home. While the poorest housing is found in the private rented sector (Simpson and Henry, 2016), it is suggested that older homeowners often struggle to meet the cost of home repairs and maintenance (Adams, 2016). Older homeowners, for example, who are 'asset rich, cash poor' find it difficult to fund home repairs and adaptions (Adams, 2016).

The economic impact of the pandemic is likely to effect homes and health in more than one way. The social distancing measures may have seen a worsening of physical housing conditions, as home visits for property related assessments and any essential works, such as aids and adaptations to the home, may be delayed, particularly for shielded households or people discharged from hospital for non-COVID-19 health conditions. Delays in installing adaptations can increase the risk of health and care needs increasing or developing (Royal College of Occupational Therapists, 2019). Moreover, spending extended periods of time in homes with physical hazards is likely to increase the risk of injury and decline in mental health and wellbeing. These risks are heightened for groups who are shielding; older people and people with pre-existing health conditions, as they are more likely to live in unsuitable homes (Gibson et al., 2011).

Security of tenure

Difference in housing tenure has been attributed to differences in health outcomes. Housing that is insecure, due to affordability or security of tenure, has been associated with worsened mental health. Home ownership, for example, may result in feelings of security (Gibson et al., 2011), whereas fixed term tenancies are a source of anxiety for some (Simpson and Henry, 2016). There is evidence to suggest the temporariness of housing and frequency of moves, something more frequent in the private rented sector, contribute to feelings of instability in the home (Clair and Stuckler, 2016). Chronic stress resulting from prolonged exposure to insecure living conditions can lead to major negative effects for mental health.

The measures taken to support renters during the pandemic are not enough to stem the psychological stress caused from this instability.

The financial impact of the pandemic has increased housing insecurity. The implications for mental health are already apparent. During lockdown, security of tenure has been a concern for people across all housing types (Bibby et al., 2020). For homeowners facing loss of income, mortgage holidays have been granted in some cases, however, despite efforts, there has been an increase in the number of people in mortgage arrears. Private renters have found themselves facing eviction as a result of sudden income reductions and accumulating rent arrears (Clair, 2020). The measures taken to support renters during the pandemic, for example, the suspension of evictions until August 2020, is not enough to stem the psychological stress caused from this instability (Beswick et al., 2020); it merely prolongs the notice for eviction and does not prevent landlords from ending the tenancy.

Households in temporary accommodation

Housing affordability and security of tenure are some of the leading causes of homelessness. Among the government's support measures for housing during the pandemic, emergency funding has been offered to local authorities to support rough sleepers into accommodation. While homelessness deserves its own exploration in relation to COVID-19, the discussion of poor-

quality homes needs to address the standards of temporary accommodation[5]. It is widely recognised that the quality of this accommodation often fails to meet the decent homes standard (Sanders and Reid, 2018).

Various studies have reported conditions of damp and mould (Beswick et al., 2020; Credland and Lewis, 2004; Rose and Davies, 2014), cramped spaces with shared, sometimes poorly maintained and unhygienic facilities (Rosenthal et al., 2020; Sanders and Reid, 2018), and concerns about the security and safety of residents (Rose et al., 2016). The effects on health and wellbeing from living in these conditions is well documented. Residents in poor quality temporary accommodation have reported declines in their overall physical health (Clair, 2020; Leng, 2017; Rose and Davies, 2014) and cite heightened levels of stress and cases of depression (Credland and Lewis, 2004; Rose et al., 2016). As previously discussed, there are concerns about the potential increase in transmission of the virus between people in cramped conditions and those sharing facilities. There are additional concerns arising from the economic ripple effect from COVID-19. The number of households in temporary accommodation was rising pre-COVID-19 (Barton and Wilson, 2020), and it is anticipated that this will increase further as a result of accumulating debt and issues of affordability.

Area characteristics

The characteristics of the area we live in can impact our health in various ways (Garcia et al., 2016; Public Health Wales, 2015; Swope and Hernández, 2019). Neighbourhood design and layout, for example, affects levels of physical activity (Public Health England, 2017), levels of crime in the local area is negatively related to mental health (Gobbens and van Assen, 2018), while access to services contribute to community involvement and are associated with social isolation, (Communities and Local Government Committee and Betts, 2018), and air and noise pollution have been linked to depressive mood and, the former related to respiratory and cardiovascular conditions (Gelormino et al., 2015; Rautio et al., 2018).

Greater levels of deprivation have appeared to impact on the COVID-19 mortality rate, with rates more than double than those living in less deprived areas.

The levels of deprivation in an area have also been associated with poorer health. Mortality rates tend to be higher in more deprived areas; people living in the least deprived areas can expect to live around a decade longer than those in the most deprived (9.3 years longer for males, 7.5 years for females) (Buck and Maguire, 2015). Much of this disparity is caused by respiratory and heart disease (Raleigh, 2019). General health too is affected by deprivation – only 50% of people living in the most deprived areas in England report good health aged 55-59. For those in the least deprived areas, the same proportion of people report poorer health in their late 70's (The Health Foundation, 2019). Greater levels of deprivation have appeared to impact on the COVID-19 mortality rate, with rates more than double than those living in less deprived areas (Office for National Statistics, 2020b).

Mental health, too, is affected by the local area (Gobbens and van Assen, 2018; Gong et al., 2016). Access to green spaces and essential amenities, like public parks, open spaces, shops and health facilities have direct and indirect impacts on health. Within the literature, effects related to physical mobility,

5 Temporary accommodation including, but not limited to, hostels, bed and breakfast accommodation, short term tenancies in private and social rented sectors (Barton and Wilson, 2020).

obesity and mental health are more frequently cited (Gobbens and van Assen, 2018; Swope and Hernández, 2019; Torrington, 2015). The opportunity to enjoy green, open spaces has been found to significantly effect mental wellbeing. Rautio et al. (2018) suggest that lack of green space, traffic noise and air pollutants are related to depressive mood. There is evidence that the accessibility of the immediate neighbourhood is crucial for older people's wellbeing. Torrington (2015) found that inaccessible outdoor space resulted in older people becoming isolated even if they live in an ideal house. Throughout lockdown, older people and those with existing health conditions have been advised to shield at home. It can be expected that the lack of access to outdoor space will have a significant impact on their social and mental wellbeing, especially for those who do not have access to private outdoor areas (Bibby et al., 2020).

Digital exclusion

Home internet access is not currently seen as a benchmark for housing quality, but this is likely to change as we increasingly rely on online services. Patterns of digital exclusion closely mirror those of housing and health inequalities – the same groups that are more likely to live in poor-quality homes are also likely to lack digital access. This includes low income households (Office for National Statistics, 2019b), households in rural areas (Local Government Association, 2017), older adults, and people with disabilities (Office for National Statistics, 2019b).

Groups that face digital exclusion more frequently (NHS Digital, 2020) are also groups that are most likely to be affected by the long periods of shielding at home during lockdown.

Social distancing measures introduced during the pandemic have both highlighted the necessity of internet access and further exposed the inequalities in access. Groups that face digital exclusion more frequently (NHS Digital, 2020) are also groups that are most likely to be affected by the long periods of shielding at home during lockdown. For these groups, a digitally disconnected household is likely to have driven this isolation deeper. Digital exclusion is not only affecting how people cope emotionally during lockdown, it may also be impacting on physical health. Online access is increasingly important for accessing health care and wider support – including using online consultations, booking prescriptions, accessing the latest advice and guidance, or requesting a vulnerable persons food parcel scheme (APLE Collective, 2020).

In the current context, online access can be considered an essential household utility alongside electricity, gas and water supplies, as argued previously by the Digital Skills Committee of the House of Lords (Select Committee on Digital Skills, 2015).

It is estimated that the NHS spends approximately £500m a year for over 55s living in the poorest housing.

The cumulative effect

The impact of housing on health is not only the result of where a person lives currently, it is also a product of the housing conditions they have experienced over their lifetime. Living in homes that are of poor quality can impact health and wellbeing across the life course, with significant impacts to health from midlife onwards. It is estimated that the NHS spends approximately £500m a year for over 55s living in the poorest housing (Centre for

Ageing Better, 2020)[6]. Many of the chronic health problems experienced by older people, including respiratory conditions and reduced mobility, have a direct link to poor housing. There is evidence to suggest that living in poor housing earlier in life can have an impact on future health (Singh et al., 2019). In a systematic review, Pevalin et al. (2017) found that the length of time spent in poor housing had an adverse, cumulative effect on mental health. While the mental health impact of living in poor housing for one year was found to diminish over time, living in poor housing for four years may result in longer term mental health problems, extending as long as five years after. Moreover, people currently living in decent homes but who have had experiences of poor housing in the past, have poorer mental health than someone who had not experienced living in poor housing previously.

It is important to recognise that the implications from the pandemic will likely have long-term effects on housing-related health. The evidence emerging is focused on the immediate impacts of the virus and of lockdown (Bibby et al., 2020). However, as the evidence outlined above suggests, there is a clear risk that without mitigating action, those living in poor housing throughout this pandemic will suffer the effects not only in the short term, but into later life.

6 Modelling based on people aged 55 and over and for first year treatment costs of category 1 hazards.

4. What can be done?

Having a warm, safe and secure home to live in is important for good health and wellbeing. This has become even more apparent during the response to the COVID-19 pandemic; many people are spending more time in homes that are hazardous, unsafe and lack security of tenure. There is an extensive evidence base making the case for housing interventions to improve health. Action to improve housing quality is, like its impact on health, multifaceted but not insurmountable. There is a need to improve the conditions of the current housing stock that is in poor quality, as well as to ensure future homes are built to a good standard and promote a healthy life. As this review has considered, the home is more than the internal physical fabric. To successfully address poor-quality homes, the instability related to tenure, as well as the built environment surrounding the home, needs to be considered when thinking about what can be done. To effectively facilitate these improvements, closer alignment of housing and health partners is needed.

Improving quality of housing stock

There is strong evidence of the benefits of improving the warmth and energy efficiency of homes (Adams, 2016; Curl and Kearns, 2015; Liddell and Guiney, 2014; Public Health Wales, 2015; Sharpe et al., 2019; Vardoulakis et al., 2015). Energy efficiency improvements, such as sealing homes to prevent heat loss (draught proofing, glazing and insulation) and improved heating systems, have been associated with improved cardiovascular and respiratory health (Sharpe et al., 2019). In an evidence review,

Public Health Wales (2015) drew similar conclusions; warmth and energy efficiency improvements can lead to general improvements in health, particularly for respiratory and mental health, and can lead to less time off work and school. These interventions were found to also be associated with reduced fuel costs, lower healthcare costs, a better financial position (Public Health Wales, 2015) and were deemed most effective when targeted at people with existing health conditions, older adults and people from low-income groups (Gibson et al., 2011). A later report from Public Health Wales highlighted this, suggesting that every £1 spent on improving warmth in 'vulnerable' households can result in £4 of health benefits (Watson, 2019). The recent announcement of additional funding to improve energy efficiency, the new green homes grant, offers financial support to households to improve the insulation of their home.

Every £1 spent on improving warmth in 'vulnerable' households can result in £4 of health benefits.

It is essential that all new homes are built to a good standard, but with the consideration that 80% of the homes we will occupy in 2050 have already been built (Boardman et al., 2005), we need to ensure existing homes are prevented from deteriorating into disrepair and to repair those that do not meet standards. Minor improvements to the physical condition of the home are found to improve quality of life and wellbeing, particularly when adaptions are made for later life (Garrett and Burris, 2015; National Institute for Health and Care Excellence, 2015; Poortinga et al., 2017; Powell et al., 2017; Rodgers et al., 2018). Improving the physical features of the home such as installation of additional lighting, handrails and the repairing of floors and paths are effective interventions for preventing falls and injuries (Communities and Local Government Committee and Betts, 2018). Research demonstrates that some-low cost adaptions to the home can result in a 26% reduction in frequency of falls (Centre for Ageing Better, 2017). It is estimated that for £1 spent on home improvement services that reduce falls, a saving of £7.50 to the health and care sector is made (Watson, 2019). A longitudinal study also identified the benefits to the health system from home improvements. Interventions such as upgrading electrical systems and improved windows, doors and insulation were associated with lower rates of hospital admissions (Rodgers et al., 2018). In homes headed by someone over 60 years old where improvements were made, a 39% reduction in admissions was observed (Rodgers et al., 2018).

What can be done currently depends on tenure type. Homeowners are largely responsible for their own homes, while private and social renters are more dependent on landlords. Financial support, such as the Disabled Facilities Grant, as part of the Better Care Fund, help fund improvements to heating systems or improve accessibility of the home. Currently 60% of applications for the grant are from those over 60 years old (Office for National Statistics, 2020a). However, for homeowners, particularly later in life, there are additional barriers to home improvements, including the stress of and finding trustworthy services. The All Party Parliamentary Group for Ageing and Older People and Maskell (2019) call for both better funding of the Grant, but also to ensure access to advice and practical help people need to live in decent homes.

Such financial support is also available to private renters, but to be eligible they must remain in the property for 5 years; something that is not always possible given short-term tenancies. Private renters, therefore, are in a precarious position. Legislation, such as the Homes (Fitness for Human Habitation) Act 2018, and the Equality Act 2010 require landlords to make

'reasonable adjustments' to homes, protecting renters. However, additional hurdles are faced in the private sector. Tenants will also require permission from their landlord to make adaptions or improvements. Tenants may feel their security of their tenure is put at risk if they request adaptions to the home and may not feel empowered to ask their landlord. The National Landlords Association (2019) found that tenants with accessibility needs reported feeling intimidated to begin discussions about home adaptions for fear of eviction. More recently, this insecurity in the private rented sector is likely to have been heightened due to the financial impacts of the pandemic.

Within the literature, there are calls to expand social housing and investment in this sector (All Party Parliamentary Group for Ageing and Older People and Maskell, 2019; Rodgers et al., 2018). Evidence suggests that generally, high-quality social housing provided by housing associations are more secure and more affordable homes that enhance wellbeing and could result in a reduction in costs to the NHS (Buck et al., 2016).

Neighbourhood improvements

Large-scale interventions to the built environment surrounding the home can positively impact health and wellbeing. In a review of evidence for environmental design impact on health, Public Health England (2017) found that neighbourhoods that enhanced walkability, were compact in design, and those which enhanced connectivity, were associated with increased physical activity, social engagement and better mental health. In local areas that facilitate older people's community participation through access to open space, facilities and health and social care were found to improve health outcomes and were associated with a reduction in emergency admissions (Torrington, 2015). The role of housing in the pandemic has shed light on the impact 'place' has on health, bringing the need for approaches that tackle both the internal and external environment of housing to the forefront.

Integrated partnerships

Sustained and improved integration between different partners is essential to improving housing related health outcomes (All Party Parliamentary Group for Ageing and Older People and Maskell, 2019; Simpson and Henry, 2016; Tweed, 2017). The housing and health inequalities which have attracted greater attention during the pandemic demonstrate that more collaborative efforts are required across different housing and health partners to reduce health inequalities. A key example of concerted and effective partnership is NHS England's Healthy New Towns Programme (NHS England, 2019). The programme proposed a 'radical upgrade in prevention' in which 10 demonstrator sites showcased approaches to ensure housing developments actively promote health. It aimed to instil new models of integrating health and social care and the development of connected communities. The resulting report, 'Putting Health into Place' (NHS England, 2019) describes the lessons learnt for working in partnership and demonstrates the essential collaboration between different housing, health and care partners required to actively improve health. A further example is the Lambeth Housing Standard, which was the result of joined up investment in policy domains including housing, health and crime. The programme aimed to bring the existing council housing stock up to an enhanced version of the Decent Homes Standard; focusing on improving the warmth, safety and security of homes. Lambeth Council recognised that renovations to over 32,000 council homes would lead to healthier living conditions. The estimated health gains from the programme include improved mental health, a reduction in falls leading to injury and reduction in cardiovascular and respiratory disease (Ambrose et al., 2018).

5. Conclusion

The evidence from the literature is clear; living in a poor-quality home has a major detrimental impact on physical and mental health. An estimated 18% of households in England do not meet the Decent Homes Standards, but when wider aspects of housing quality beyond these minimum criteria are included, the percentage of households that create risks to health is likely to be considerably higher.

Poor quality housing has already worsened the outcomes of the pandemic for some groups. The implications have been two-fold, in both increased viral transmission and the consequences, both immediate and future, on health and wellbeing from spending lockdown in non-decent conditions. Considering this apparent multiplier effect, it is essential that housing conditions are improved for both current and future homes to break the cycle of inequality and to ensure that future risks are mitigated against.

Interventions to improve housing quality, both in and outside of the home can be a highly cost-effective means of improving health outcomes. The strongest evidence is for improving energy efficiency and thermal comfort of the home, but other measures are also worth considering. Home improvement services that reduce falls are a cost-effective intervention, and interventions that address

the built environment can also lead to significant improvements in the health and wellbeing of local residents.

Reducing the negative impact of poor-quality housing on health requires immediate and long-term intervention. COVID-19 has shone a light on poor housing and its effect on health. As the country develops its response, housing needs to be seen as crucial in the short and longer term. In the short-term for example, if social distancing continues into the winter months, concerns about fuel poverty, or the implications for health of those living in colder homes will be raised. In the longer term, this requires holistic and collaborative approaches to policymaking, with a focus on prevention and population health. In both the short and long-term existing structures such as Health and Wellbeing Boards, STPs and ICSs offer the platform for integration between housing, health and social care bodies, but efforts to work together in partnership need to go much further than they have to date.

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Appendix 1

About the review

The evidence review was commissioned by the Centre for Ageing Better as part of the work to address the poor quality of the UK's housing stock.

Objectives

The review is intended to answer the following questions

- What impact does a poor-quality home have on a person's health?
- What elements of a poor-quality home are most likely to pose a health risk?
- What health conditions are caused or exacerbated by poor-quality homes?
- What are the plausible implications of this in the context of the current pandemic?
- What interventions could national/local government and others consider implementing to address poor-quality homes and their impact on health?

Search methods

A range of search methods were used to compile high-quality reviews and primary research articles, and grey literature:

- Databases: CORE, The Kings Fund Library database, Public Health England Knowledge and Library Services – Open Athens content, PubMed, Science Direct, Social Care Online
- Manual search for relevant peer-reviewed studies and grey literature through citation searching and Google Scholar.

Centre for Ageing Better

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

This report is part of our work on Safe and accessible homes and is freely available at **ageing-better.org.uk**

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.

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