Public Health England

QUESTIONS FOR CCHC CALL FOR EVIDENCE

The Commission on Creating Healthy Cities is seeking evidence to assist it in putting together its recommendations aimed particularly at city leaders and citizens. We are especially interested in evidence from research but hope to also elicit input from those with direct experiences as practitioners and citizens/users of services. This evidence will supplement work by the Commission's Research Fellows, Dr Georgia Richards and Dr Juliet Carpenter, at the Global Centre on Healthcare and Urbanisation. While we greatly welcome evidence from other countries, our focus is on the UK. We are hoping for material that will inform and shape policy and practice that is practical, viable and achievable. The questions set out here cover some overarching issues and some more detailed, evidence-based questions. The Commission would appreciate responses to any or all of the questions but would also welcome input on other matters relating to the creation of healthy cities.

Question	Response
The Built Environment, Design and Placemaking (Housing, Planning and Urban Design and Regeneration) Overarching Question: 2.A - Is there evidence that changes to urban design and housing quality – including energy efficiency, security, affordability – for both new development and neighbourhood regeneration, will lead to healthier cities?	• House of Lords Select Committee on National Policy for the Built Environment (2016) • Ka Yan Lai, Chinmoy Sarkar, Sarika Kumari, Michael Y. Ni, John Gallacher, Chris Webster, (2021), Calculating a national Anomie Density Ratio: Measuring the patterns of loneliness and social isolation across the UK's residential density gradient using results from the UK Biobank study, Landscape and Urban Planning, Volume 215 • PHE, Spatial planning for health: evidence resource (2017)
2.C - What evidence is available to support the case for changes to local and national policies for housing and the built environment in the light of the Covid experience?	• Chang, M., Green, L. & Cummins, S. (2020), All change. Has COVID-19 transformed the way we need to plan for a healthier and more equitable food environment?. Urban Design International • Health Foundation, Better housing is crucial for our health and the COVID-19 recovery (2020) • Northern Health Science Alliance, COVID-19 and the Northern Powerhouse: Tackling Health Inequalities for UK Health and Productivity (2020)

	• Public Health Wales, Health Impact Assessment of the 'Staying at Home and Social Distancing Policy' in Wales in response to the COVID-19 pandemic (2020) • Health & Equity in Recovery Plans Working Group, Direct and indirect impacts of COVID-19 on health and wellbeing (2020)
2.6 - How best can Local Planning Authorities play a positive, proactive role in creating the healthy city?	• PHE, Spatial planning and health. Getting Research into Practice (2020). Research into enablers and opportunities. • Age UK and PHE, Ageing in coastal and rural communities (June 2021) • Urban Land Institute, Zooming in on the "S" in ESG: A road map for social value in real estate (2021) • RTPI, Dementia and Town Planning (2020)
2.8 - Are there exemplar toolkits created by any UK cities which could be disseminated for use elsewhere?	• PHE, Getting research into practice: A resource for local authorities on planning healthier places (2021). Examples of LA planning for health frameworks • PHE, Health impact assessment in spatial planning (2020). Examples of LA HIA guidance to support use of HIAs. • Essex Livewell Development Accreditation (2019). • Building for a Healthy Life (2020) • Quality of Life Foundation, Quality of Life Framework (2020). Shows how our homes and communities affect our quality of life.
2.9 - Do any robust studies demonstrate the benefits of land value capture and make the case for replication of past examples of new settlements and urban extensions that create strong communities?	Research on community-centred systems within cities - What are the elements of a whole system approach to community-centred public health? A qualitative study with public health leaders in England's local authority areas | BMJ Open PHE resources related to the above - Community-centred public health: taking a whole system approach - GOV.UK (www.gov.uk) Evidence on community-centred approaches - Health and wellbeing: a guide to community-centred approaches - GOV.UK (www.gov.uk) Paper on strengthening communities in pandemic recovery - Sustaining and strengthening community resilience throughout the COVID-19 pandemic and beyond - PubMed (nih.gov)
2.12 - Is there evidence that changing patterns of work and retail during the pandemic – with implications for new	• NHS Confederation, Health on the high street (2020). How integrating health services into local high streets can generate economic,

development and neighbourhood regeneration - will be sustained afterwards? How can emerging opportunities for regenerating high streets and reviving town centres be achieved post-Covid?	social and health benefits for local communities. • TCPA, Our Fragile High Streets - Death by Permitted Development Rights? (2021).
2.13 - Is there evidence that Home Improvement Agencies, providing advice and support for home retrofitting for older owners, are enhancing health and wellbeing for those living in poor conditions?	• https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/679856/A_return_on_investment_tool_for_falls_prevention_programmes.pdf
3. Transport and movement, infrastructure and technology (smart cities) **Overarching Questions:** 3.B - What are likely to be the long-term effects of the pandemic on use of public and private transport and, in particular, changed working/commuting behaviour?	• A Gear Change: Cycling and Walking Plan for England https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904146/gear-change-a-bold-vision-for-cycling-and-walking.pdf • A Gear Change – One Year On https://www.gov.uk/government/publications/gear-change-one-year-on-review • Low Traffic Neighbourhoods Survey by DfT https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004948/low-traffic-neighbourhoods-residents-survey.pdf
Green spaces 3.7 - Is there evidence of benefit to health and wellbeing from access for citizens to green space facilities, parks, allotments, etc?	• Improving Access To Greenspace Review 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904439/Improving_access_to_greenspace_2020_review.pdf

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Question	Response
Evidence-based Questions: 2.5 - Does the evidence from the Pandemic show links between susceptibility to the Covid virus and health inequalities such as: overcrowding; multigenerational households; cold and damp conditions; lack of space to work or study at home; lack of garden/balcony/green space?	**2.5** Much of the vulnerability of a household to COVID-19 and its impacts was determined pre-pandemic[1]. Housing disadvantage indicators (as listed above) manifest themselves disproportionately for certain groups. This disadvantage often exists simultaneously within the same households, overlapping with other fundamental determinants of poor health, such as poverty and higher levels of neighbourhood deprivation. The interrelated factors at play (e.g. poor-quality housing, low income, precarious work, jobs that cannot be done from home) have resulted in 'clusters' or 'bundles' of inequality in experiencing the impacts of COVID-19[2]. These impacts can be categorised in two significant ways • Households in which **not all members could 'stay at home'** when necessary, to protect themselves from either catching or passing on the virus

[1] The COVID-19 pandemic and health inequalities | Journal of Epidemiology & Community Health (bmj.com)
[2] SocArXiv Papers | Household level health and socio-economic vulnerabilities and the COVID-19 crisis: An analysis from the UK (osf.io)

	• Households spending **increased amounts of time in homes that are not suitable** for the needs of all household members **e.g. Inequalities in ability to 'stay at home'** There is an established between poor housing conditions, low income, and jobs that are either precarious in nature or that cannot be done from home. According to the Health Foundation, 'poor working and living conditions, and lack of access to financial support saw some people more exposed to COVID-19. For lower income workers, low rates and coverage of statutory sick pay, and difficulty in accessing isolation payments, reduced people's ability to self-isolate, thereby increasing their likelihood of catching the virus'[3]. Risk of contracting or passing on the virus increases with the number of social contacts an individual makes[4]. The ability to reduce social contacts is associated with household size, occupation, and the presence of children[5]. For many households this risk increases two-fold, first when members of the household make more social contacts during their work, in jobs that cannot be done from home, and also through increased social contacts in the home, when living in overcrowded or multi-generational households (likely to include older family members whose age increases their vulnerability to the virus). From very early in the pandemic, the link was made between increased COVID-19 death rates and communities with the highest levels of deprivation and overcrowding[6]. **e.g. Inequalities in suitability of the home environment** Children in low-income households are more likely to experience poor-quality housing. 1 in 5 children from low-income households live in a home that is overcrowded, compared to just 3% of children in affluent households[7]. 1 in 4 children from low-income households have no access to a garden, but this rises to almost 40% of children from an ethnic minority background[8]. With the widespread closure of schools, children spent much more time than usual in their homes and were expected to undertake their schooling remotely. This has been argued to be more difficult, and to create additional setbacks, for children from poorer

[3] Five key findings from our COVID-19 impact inquiry | The Health Foundation
[4] Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK - PubMed (nih.gov)
[5] Limits of lockdown: characterising essential contacts during strict physical distancing | medRxiv
[6] Inside Housing - Insight - The housing pandemic: four graphs showing the link between COVID-19 deaths and the housing crisis
[7] Lockdown-living.pdf (resolutionfoundation.org)
[8] One in eight British households has no garden - Office for National Statistics (ons.gov.uk)

	households more likely to lack space, equipment, and adults available to support[9]. Lack of adequate housing space is correlated with economic disadvantage. This is most commonly experienced by younger households, yet even within similar age groups, average useable floor space is smaller for ethnic minority groups compared to white groups[10]. Research has suggested that lockdowns during the pandemic have intensified the existing pressures of living in a small home, through both a lack of suitable indoor space, and a reduction in access to coping strategies e.g. spending time away from the home[11]. For social renters, policies such as the spare room levy (or 'bedroom tax') will have left many households without any additional space that can be repurposed. SAGE recommended that the bedroom tax 'be immediately revisited especially in deprived and over-crowded areas to ensure this does not pose an impediment to self-isolation for households at higher risk of infection and transmission'[12]. In previous outbreaks of transmissible diseases, increased rates of infection have been associated with overcrowding and deprivation in urban areas[13]. Together, these multiple forms of disadvantage reflect the uneven distribution of housing resources which have amplified the inequalities in how particular households, groups and communities have experienced the COVID-19 pandemic. Further reading/additional sources: Covid-19 and wellbeing inequalities: Housing - What Works Wellbeing How daily life in small homes changed during COVID-19 : CaCHE (housingevidence.ac.uk) Association of poor housing conditions with COVID-19 incidence and mortality across US counties - PubMed (nih.gov) (USA) Build Back Fairer: The COVID-19 Marmot Review - IHE (instituteofhealthequity.org) People and places in London most vulnerable to COVID-19 and its social and economic consequences | Trust for London

[9] COVID-19, school closures, and child poverty: a social crisis in the making (nih.gov)
Considering inequalities in the school closure response to COVID-19 - PubMed (nih.gov)
[10] Lockdown-living.pdf (resolutionfoundation.org)
[11] Urban rhythms in a small home: COVID-19 as a mechanism of exception - Jenny Preece, Kim McKee, David Robinson, John Flint, 2021 (sagepub.com)
[12] S0923_housing_household_transmission_and_ethnicity.pdf (publishing.service.gov.uk)
[13] Socio-economic disparities in mortality due to pandemic influenza in England | SpringerLink

2.10 - What is the evidence of benefits from achieving a mix of incomes and housing types, for young and old, and an absence of segregation?	SARS-CoV-2 infection rate very high amongst UK strictly-Orthodox Jewish community | LSHTM **2.10** The rationale behind mixed-income housing strategies is often that 'mixing incomes will address a number of problems associated with poverty concentration and neighbourhood disinvestment' (Levy et al., 2013)[14]. Yet evidence from such schemes has not necessarily supported these hypotheses. International studies of mixed housing tenure policies have been 'inconclusive about whether creating mixed communities improves neighbourhood reputations and territorial stigma' (Arthurson, 2013). Within mixed neighbourhoods, the negative stigma associated with certain housing types remained (e.g. renters versus owners)[15]. Studies of mixed-income or income-diverse neighbourhoods have found that relationships are more likely to form between people whose incomes and housing tenures are similar[16]. One of the often-hypothesised benefits of mixed neighbourhoods is that they will reduce or removed the 'territorial stigma' (Wacquant, 2007)[17] often associated with segregated or residualised neighbourhoods. Yet efforts to 'scrub' a place of its reputation are viewed by some as unhelpful in their obstruction of efforts to reduce the structural causes of poverty, inequality and marginality[18]. Segregated neighbourhoods are likely to be a 'symptom' of more upstream inequalities, rather than their cause, so strategies which seek to achieve a better mix of incomes, tenures and ages within neighbourhoods may only be effective when applied in combination with efforts to reduce the poverty and disadvantage that creates such segregation in the first place[19]. From Levy et al (2013, p.19) Cityscape (huduser.gov) 'In the United Kingdom, Bretherton and Pleace (2011) found that residents who owned a home in

[14] Cityscape (huduser.gov)
[15] Mixed tenure communities and the effects on neighbourhood reputation and stigma: Residents' experiences from within - ScienceDirect
[16] HOPE VI New Communities: Neighborhood Relationships in Mixed-Income Housing - Rachel Garshick Kleit, 2005 (sagepub.com)
More than Bricks and Mortar: Neighborhood Frames, Social Processes, and the Mixed–Income Redevelopment of a Public Housing Project - Laura M. Tach, 2009 (sagepub.com)
[17] Territorial Stigmatization in the Age of Advanced Marginality - Loïc Wacquant, 2007 (sagepub.com)
[18] Activating Territorial Stigma: Gentrifying Marginality on Edinburgh's Periphery - Hamish Kallin, Tom Slater, 2014 (sagepub.com)
[19] Are mixed communities the answer to segregation and poverty? \| JRF

	a mixed-income area tended to perceive residents of social housing units as bad neighbors and purposely kept interactions to a minimum. Arthurson (2010) found three factors that served to depress interactions across income lines in income-diverse neighborhoods in Australia. Lifestyle factors included decisions among subsidized residents to maintain stronger ties to their previous communities and differences in lifestyles and work schedules that left little time for developing new relationships. Design factors included spatial segregation of residents by income within a mixed-income area that reduced opportunities for informal interactions. Finally, stigma attached to residents of social housing units worked against interactions across income and tenure'
Evidence-based Questions: **3.1 - Is there evidence available to help our understanding of how the digital divide – both physical and social – may be excluding:** **- those without any or adequate broadband, preventing access to online shopping,** **studying, work and recreation;** **- those unable to afford the necessary IT equipment and monthly costs;** **- those lacking the knowledge/skills to use broadband/internet.**	**3.1** Research which focusses exclusively on the digital divide and exclusion is lacking, but it is well understood that in an increasingly digital age, those not engaged effectively with the digital world are at risk of being left behind. A recent report by the Office for National Statistics (ONS) highlighted that an estimated 5.3 million adults in the UK, 10% of the adult population, are 'internet non-users' (haven't used the internet at all, or in the last 3 months). An estimated 8 million people in the UK are digitally excluded with 4.3 million people having zero Basic Digital Skills. The need for digital access continued to grow with each year, with at least 82% of jobs in the UK requiring digital skills. In addition, with the COVID-19 pandemic digital skills and internet access have become increasingly important in enabling access to services, information, shopping and also for staying connected with family and friends (Good Things Foundation, 2020). The link between digital exclusion and poverty is well-established: those who are poor have a reduced chance of being online. The likelihood of having access to the internet from home increases with income, with research by the ONS showing 51% of households earning between £6000-10,000 have home internet access compared with 99% of households with an income of over £40,001. Research conducted during the pandemic showed an estimated 21% of households with children where the main earner was in semi-skilled or unskilled work as having no access to a device at home, with 6% having no access to internet at home and 9% having smartphone only internet access.

	Employment status, educational qualification, and age have been found to be strong predictors of whether or not a household is digitally connected (Carnegie UK Trust, 2016) and 'non-users' are increasingly older, less educated, more likely to be unemployed, disabled and socially isolated (Helsper, R. 2016). Concerning schooling, in 2018 12% of 11-18 year olds (700,000) reported having no internet access at home via desktop, laptop or tablet, with 60,000 reporting no access to home internet at all. The move to remote education as a consequence of the COVID-19 pandemic will have led to inequalities in access to learning (van de Werfhorst, 2020) with already disadvantaged children experiencing a cumulative disadvantage (Holmes & Burgess, 2020). Research conducted during the pandemic indicated around 9% of households with children lacking access to a digital device (laptop, desktop, or tablet) with 2% having no internet access and 4% having smartphone access only. There are suggestions that digital education may become commonplace and represent a new future for education post-COVID (Fleming, 2021). The benefits of basic digital skills and internet connectivity have been observed by the Centre for Economics and Business Research (CEBR): • increased earnings - access to the internet is related to an increase in earnings between 3% and 10% • higher employability - for those unemployed, digital connectivity helps with finding work and work readiness • improved communication - digital connectivity has communication benefits, improving the ability to communicate with family and friends. Digital participation can have an impact in minimising loneliness and depression in older people (Lelkes, O 2013). • cheaper shopping - access to the internet as having retail transition benefits, with shopping online being found to be 13% cheaper on average than shopping in store • time saved - by accessing online services, individuals save on average 30 minutes of leisure time, amounting to 30 hours annually Another benefit to digital connectivity is the ability to access health services and information remotely. For the individual, access to healthcare services and information digitally means better care and control over one's own health (NHS Digital, 2019). 'Looking for health-related information' was a key finding by the ONS. For the economy, providing digital skills to 100%

	of the UK population could contribute to over £14 billion annually for the UK economy by 2025 (CERB, 2015). There are overlaps between digital exclusion, social exclusion, poverty and health inequalities, with those at risk of 'digital vulnerabilities' also be at risk of employment, health and financial vulnerabilities (Coleman, V (2021). For those digitally excluded through economic status (leading to restricted access to appropriate devices and the internet) or lack digital skills, this continued move towards a digitised world only serve to exclude them yet further. The risk is that those with digital access and those experiencing barriers to access, the growing social and economic gap between will only continue to widen (ONS, 2019; Carneige UK Trust). **Key links:** • Carneige UK (2016) – 'The role of digital exclusion in social exclusion' • Good Things Foundation (2020) 'Blueprint for a 100% Digitally Included UK – For a post-COVI-19 economy' • Office for National Statistics (2019) 'Exploring the UK's digital divide.' • NHS Digital (2019) 'Digital inclusion guide for health and social care' • Centre for Economics and Business Research (2015) 'Providing Basic Digital Skills to 100% of UK population could contribute over £14 billion annually to UK economy by 2025'
Patterns of working- 3.2 - Is there evidence of the effects relating to working practices adopted during the Covid pandemic: - flexible working, - hybrid working at home and in an office, - working in office hubs close to home	**3.2 Patterns of working** **Flexible working and working from home** There are huge **geographic and sectoral variations** in opportunities for working from home (WFH) flexible working arrangement (FWA). The office of national statistics (ONS) reports that a quarter (25.9%) of people had worked from home at some point during 2020 compared to 12.4% of workers in 2019. Fewer than 14% of people in Middlesbrough worked from home compared with more than 70% in Richmond upon Thames during this time. In Scotland, 70% of people employed in communications worked remotely, but just 7% in the accommodation and food industries. Whist we have seen a **rise in remote working** from the pandemic other flexible working arrangements are still less widely used (Good Work Index). Other forms of

	flexible working such as flexitime or compressed hours reduced over the past 12 months. The CIPD Good Work Index also shows that those working remotely score more highly on several aspects of job quality, such as **autonomy, workplace relationships and flexible working** arrangements, but suffer a trade-off with higher workloads and more **blurring between work and personal commitments**. There is potential for remote working to exacerbate long hours culture, prior to the pandemic approximately one in four workers were working ten or more hours than they would realistically like to every week. Potential for workers to translate commute time into work time. Employers perceptions of the impact of homeworking on productivity is mixed. CIPD identified 8 effects of working from home including **work intensification, distractions, interruptions and concentration, team relationships, creativity and innovation, social isolation, avoiding the commute, work life boundaries and flexibility, stigma and career implications**. Each has a potential negative effect and needs careful consideration and planning if remote working is to become the norm. A recent systematic review found that there is limited scientific research on the impact of COVID-19 on work and workers for a wide spectrum of occupations, although health care workers and educational professions were the most widely studied. It found that manufacturing firms found **positive effects** regarding flexible work arrangements (FWA) including **job satisfaction, and innovative work behaviour and that flexible working positively influenced work-life balance, psychological well-being, motivation, and effectiveness**. Younger employees seemed to be more adaptive to the changes caused by the pandemic. Several surveys from US bank Morgan Stanley's Alphawise Research Unit have shown that UK workers have adopted home working more readily than their European counterparts and intend to request more days at home **Disproportionate impacts** A recent study considered the disproportionate impacts that COVID-19 may have on workers depending on demographic characteristics, individual differences, and relevant organizational norms here. Some negative effects of home working identified included those for women with children at home, and also people who live alone or do not have children as they may experience loneliness and isolation from working at home, and some potential positive effects for

	people with disabilities. Viewpoint research identified that for some people with a disability there have been positive effects from not having to commute but also negative effects in that for some people this is the only opportunity to get out of the house. A further effect identified in an opinion piece is that working from home as the norm may exacerbate housing inequalities **Hybrid working and work hubs** There is very little evidence on the effects of hybrid working and working hubs in the scientific literature. However, International Workplace Group (IWG) evidence a **gradual shift towards the hub-and-spoke model** – where companies have their headquarters in a big city such as London or Birmingham and smaller satellite offices in the regions. This shift was under way prior to the crisis, but the pandemic has seen a notable increase in demand for working hub space. A further study on daily decision to work from home found that experiencing more **work-family boundary stressors and work coordination stressors** on a certain day were associated with a greater likelihood of working in the office (vs. at home) on the next day, while **experiencing more workload stressors prompted employees to work at home** (vs. in the office) on the next day. COVID-19 infection-related stressors moderated the effects of **technology stressors and workload stressors** on next-day work location. **Links** A systematic review on the impacts of Covid-19 on work: Contributions and a path forward from the perspectives of ergonomics and psychodynamics of work (nih.gov) COVID-19 and the workplace: Implications, issues, and insights for future research and action. (apa.org) https://www.cipd.co.uk/Images/good-work-index-research-report-2021-1_tcm18-96100.pdf Working from home: assessing the research evidence (cipd.co.uk) UK office demand 'shifting to the suburbs' amid Covid-19 crisis | IWG | The Guardian If working from home becomes the norm, housing inequality will deepen | Susanna Rustin | The Guardian Morgan Stanley | Business | The Guardian https://research.birmingham.ac.uk/portal/files/68297102/Wheatley_Gifford_UK_Working_Lives_The_CIPD_Job_Quality_Index_2019.pdf

	COVID-19 and the workplace: Implications, issues, and insights for future research and action - PubMed (nih.gov) Making daily decisions to work from home or to work in the office: The impacts of daily work- and COVID-related stressors on next-day work location - PubMed (nih.gov) (PDF) Work-Life Balance and Working from Home (researchgate.net) Disability and the 'working from home' debate — Viewpoint - Giving your customers a voice (viewpoint-research.co.uk)

Question Response
The Built Environment, Design and Placemaking (Housing, Planning and Urban Design and Regeneration)
Overarching Question:
2.A - Is there evidence that changes to urban design and housing quality – including energy efficiency, security, affordability – for both new development and neighbourhood regeneration, will lead to healthier cities?
•House of Lords Select Committee on National Policy for the Built Environment (2016)
•Ka Yan Lai, Chinmoy Sarkar, Sarika Kumari, Michael Y. Ni, John Gallacher, Chris Webster, (2021), Calculating a national Anomie Density Ratio: Measuring the patterns of loneliness and social isolation across the UK's residential density gradient using results from the UK Biobank study, Landscape and Urban Planning, Volume 215
•PHE, Spatial planning for health: evidence resource (2017)

2.C - What evidence is available to support the case for changes to local and national policies for housing and the built environment in the light of the Covid experience?
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•Health Foundation, Better housing is crucial for our health and the COVID-19 recovery (2020)
•Northern Health Science Alliance, COVID-19 and the Northern Powerhouse: Tackling Health Inequalities for UK Health and Productivity (2020)
•Public Health Wales, Health Impact Assessment of the 'Staying at Home and Social Distancing Policy' in Wales in response to the COVID-19 pandemic (2020)
•Health & Equity in Recovery Plans Working Group, Direct and indirect impacts of COVID-19 on health and wellbeing (2020)

2.6 - How best can Local Planning Authorities play a positive, proactive role in creating the healthy city?
•PHE, Spatial planning and health. Getting Research into Practice (2020). Research into enablers and opportunities.
•Age UK and PHE, Ageing in coastal and rural communities (June 2021)
•Urban Land Institute, Zooming in on the "S" in ESG: A road map for social value in real estate (2021)
•RTPI, Dementia and Town Planning (2020)

2.8 - Are there exemplar toolkits created by any UK cities which could be disseminated for use elsewhere?
•PHE, Getting research into practice: A resource for local authorities on planning healthier places (2021). Examples of LA planning for health frameworks
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•Essex Livewell Development Accreditation (2019).
•Building for a Healthy Life (2020)
•Quality of Life Foundation, Quality of Life Framework (2020). Shows how our homes and communities affect our quality of life.
https://www.bitc.org.uk/toolkit/musculoskeletal-health-toolkit-for-employers/

2.9 - Do any robust studies demonstrate the benefits of land value capture and make the case for replication of past examples of new settlements and urban extensions that create strong

communities?
Research on community-centred systems within cities - What are the elements of a whole system approach to community-centred public health? A qualitative study with public health leaders in England's local authority areas | BMJ Open
PHE resources related to the above - Community-centred public health: taking a whole system approach - GOV.UK (www.gov.uk)
Evidence on community-centred approaches - Health and wellbeing: a guide to community-centred approaches - GOV.UK (www.gov.uk)
Paper on strengthening communities in pandemic recovery - Sustaining and strengthening community resilience throughout the COVID-19 pandemic and beyond - PubMed (nih.gov)

2.12 - Is there evidence that changing patterns of work and retail during the pandemic – with implications for new development and neighbourhood regeneration - will be sustained afterwards? How can emerging opportunities for regenerating high streets and reviving town centres be achieved post-Covid?
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2.13 - Is there evidence that Home Improvement Agencies, providing advice and support for home retrofitting for older owners, are enhancing health and wellbeing for those living in poor conditions?
•https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/679856/A_return_on_investment_tool_for_falls_prevention_programmes.pdf

3. Transport and movement, infrastructure and technology (smart cities)
Overarching Questions:
3.A - Could the transport and mobility sectors lead the way, after the pandemic, in offering evidence-based solutions to issues of air quality, energy consumption, improved productivity, 'levelling up' and helping create the healthy city?
3.B - What are likely to be the long-term effects of the pandemic on use of public and private transport and, in particular, changed working/commuting behaviour?

•A Gear Change: Cycling and Walking Plan for England https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904146/gear-change-a-bold-vision-for-cycling-and-walking.pdf
•A Gear Change – One Year On https://www.gov.uk/government/publications/gear-change-one-year-on-review
•Low Traffic Neighbourhoods Survey by DfT https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004948/low-traffic-neighbourhoods-residents-survey.pdf

Green spaces
3.7 - Is there evidence of benefit to health and wellbeing from access for citizens to green space facilities, parks, allotments, etc?
•Improving Access To Greenspace Review 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file

/904439/Improving_access_to_greenspace_2020_review.pdf

Evidence-based Questions:

2.5 - Does the evidence from the Pandemic show links between susceptibility to the Covid virus and health inequalities such as: overcrowding; multigenerational households; cold and damp conditions; lack of space to work or study at home; lack of garden/balcony/green space?

Much of the vulnerability of a household to COVID-19 and its impacts was determined pre-pandemic . Housing disadvantage indicators (as listed above) manifest themselves disproportionately for certain groups. This disadvantage often exists simultaneously within the same households, overlapping with other fundamental determinants of poor health, such as poverty and higher levels of neighbourhood deprivation. The interrelated factors at play (e.g. poor-quality housing, low income, precarious work, jobs that cannot be done from home) have resulted in 'clusters' or 'bundles' of inequality in experiencing the impacts of COVID-19 .
These impacts can be categorised in two significant ways
•Households in which not all members could 'stay at home' when necessary, to protect themselves from either catching or passing on the virus
•Households spending increased amounts of time in homes that are not suitable for the needs of all household members
e.g. Inequalities in ability to 'stay at home'
There is an established between poor housing conditions, low income, and jobs that are either precarious in nature or that cannot be done from home. According to the Health Foundation, 'poor working and living conditions, and lack of access to financial support saw some people more exposed to COVID-19. For lower income workers, low rates and coverage of statutory sick pay, and difficulty in accessing isolation payments, reduced people's ability to self-isolate, thereby increasing their likelihood of catching the virus' .
Risk of contracting or passing on the virus increases with the number of social contacts an individual makes . The ability to reduce social contacts is associated with household size, occupation, and the presence of children . For many households this risk increases two-fold, first when members of the household make more social contacts during their work, in jobs that cannot be done from home, and also through increased social contacts in the home, when living in overcrowded or multi-generational households (likely to include older family members whose age increases their vulnerability to the virus). From very early in the pandemic, the link was made between increased COVID-19 death rates and communities with the highest levels of deprivation and overcrowding .
e.g. Inequalities in suitability of the home environment
Children in low-income households are more likely to experience poor-quality housing. 1 in 5 children from low-income households live in a home that is overcrowded, compared to just 3% of children in affluent households . 1 in 4 children from low-income households have no access to a garden, but this rises to almost 40% of children from an ethnic minority background . With the widespread closure of schools, children spent much more time than usual in their homes and were expected to undertake their schooling remotely. This has been argued to be more difficult, and to create additional setbacks, for children from poorer households more likely to lack space, equipment, and adults available to support .
Lack of adequate housing space is correlated with economic disadvantage. This is most commonly experienced by younger households, yet even within similar age groups, average useable floor space is smaller for ethnic minority groups compared to white groups . Research has suggested that

lockdowns during the pandemic have intensified the existing pressures of living in a small home, through both a lack of suitable indoor space, and a reduction in access to coping strategies e.g. spending time away from the home.
For social renters, policies such as the spare room levy (or 'bedroom tax') will have left many households without any additional space that can be repurposed. SAGE recommended that the bedroom tax 'be immediately revisited especially in deprived and over-crowded areas to ensure this does not pose an impediment to self-isolation for households at higher risk of infection and transmission' . In previous outbreaks of transmissible diseases, increased rates of infection have been associated with overcrowding and deprivation in urban areas .
Together, these multiple forms of disadvantage reflect the uneven distribution of housing resources which have amplified the inequalities in how particular households, groups and communities have experienced the COVID-19 pandemic.

Further reading/additional sources:
Covid-19 and wellbeing inequalities: Housing - What Works Wellbeing
How daily life in small homes changed during COVID-19 : CaCHE (housingevidence.ac.uk)
Association of poor housing conditions with COVID-19 incidence and mortality across US counties - PubMed (nih.gov) (USA)
Build Back Fairer: The COVID-19 Marmot Review - IHE (instituteofhealthequity.org)
People and places in London most vulnerable to COVID-19 and its social and economic consequences | Trust for London
SARS-CoV-2 infection rate very high amongst UK strictly-Orthodox Jewish community | LSHTM

2.10 - What is the evidence of benefits from achieving a mix of incomes and housing types, for young and old, and an absence of segregation?

The rationale behind mixed-income housing strategies is often that 'mixing incomes will address a number of problems associated with poverty concentration and neighbourhood disinvestment' (Levy et al., 2013) . Yet evidence from such schemes has not necessarily supported these hypotheses. International studies of mixed housing tenure policies have been 'inconclusive about whether creating mixed communities improves neighbourhood reputations and territorial stigma' (Arthurson, 2013). Within mixed neighbourhoods, the negative stigma associated with certain housing types remained (e.g. renters versus owners) . Studies of mixed-income or income-diverse neighbourhoods have found that relationships are more likely to form between people whose incomes and housing tenures are similar .
One of the often-hypothesised benefits of mixed neighbourhoods is that they will reduce or removed the 'territorial stigma' (Wacquant, 2007) often associated with segregated or residualised neighbourhoods. Yet efforts to 'scrub' a place of its reputation are viewed by some as unhelpful in their obstruction of efforts to reduce the structural causes of poverty, inequality and marginality . Segregated neighbourhoods are likely to be a 'symptom' of more upstream inequalities, rather than their cause, so strategies which seek to achieve a better mix of incomes, tenures and ages within neighbourhoods may only be effective when applied in combination with efforts to reduce the poverty and disadvantage that creates such segregation in the first place .
From Levy et al (2013, p.19) Cityscape (huduser.gov)
'In the United Kingdom, Bretherton and Pleace (2011) found that residents who owned a home in a mixed-income area tended to perceive residents of social housing units as bad neighbours and purposely kept interactions to a minimum. Arthurson (2010) found three factors that served to

depress interactions across income lines in income-diverse neighbourhoods in Australia. Lifestyle factors included decisions among subsidized residents to maintain stronger ties to their previous communities and differences in lifestyles and work schedules that left little time for developing new relationships. Design factors included spatial segregation of residents by income within a mixed-income area that reduced opportunities for informal interactions. Finally, stigma attached to residents of social housing units worked against interactions across income and tenure'.

Evidence-based Questions:
3.1 - Is there evidence available to help our understanding of how the digital divide – both physical and social – may be excluding:
- those without any or adequate broadband, preventing access to online shopping, studying, work and recreation;
- those unable to afford the necessary IT equipment and monthly costs;
- those lacking the knowledge/skills to use broadband/internet. HI/ C&YP/Regions

3.2 - Is there evidence of the effects relating to working practices adopted during the Covid pandemic:
- flexible working,
- hybrid working at home and in an office,
- working in office hubs close to home HI

3.1 Research which focusses exclusively on the digital divide and exclusion is lacking, but it is well understood that in an increasingly digital age, those not engaged effectively with the digital world are at risk of being left behind. A recent report by the Office for National Statistics (ONS) highlighted that an estimated 5.3 million adults in the UK, 10% of the adult population, are 'internet non-users' (haven't used the internet at all, or in the last 3 months). An estimated 8 million people in the UK are digitally excluded with 4.3 million people having zero Basic Digital Skills. The need for digital access continued to grow with each year, with at least 82% of jobs in the UK requiring digital skills. In addition, with the COVID-19 pandemic digital skills and internet access have become increasingly important in enabling access to services, information, shopping and also for staying connected with family and friends (Good Things Foundation, 2020).
The link between digital exclusion and poverty is well-established: those who are poor have a reduced chance of being online. The likelihood of having access to the internet from home increases with income, with research by the ONS showing 51% of households earning between £6000-10,000 have home internet access compared with 99% of households with an income of over £40,001. Research conducted during the pandemic showed an estimated 21% of households with children where the main earner was in semi-skilled or unskilled work as having no access to a device at home, with 6% having no access to internet at home and 9% having smartphone only internet access. Employment status, educational qualification, and age have been found to be strong predictors of whether or not a household is digitally connected (Carnegie UK Trust, 2016) and 'non-users' are increasingly older, less educated, more likely to be unemployed, disabled and socially isolated (Helsper, R. 2016).
Concerning schooling, in 2018 12% of 11-18 year olds (700,000) reported having no internet access at home via desktop, laptop or tablet, with 60,000 reporting no access to home internet at all. The move to remote education as a consequence of the COVID-19 pandemic will have led to inequalities

in access to learning (van de Werfhorst, 2020) with already disadvantaged children experiencing a cumulative disadvantage (Holmes & Burgess, 2020). Research conducted during the pandemic indicated around 9% of households with children lacking access to a digital device (laptop, desktop, or tablet) with 2% having no internet access and 4% having smartphone access only. There are suggestions that digital education may become commonplace and represent a new future for education post-COVID (Fleming, 2021).

The benefits of basic digital skills and internet connectivity have been observed by the Centre for Economics and Business Research (CEBR):

• increased earnings - access to the internet is related to an increase in earnings between 3% and 10%

• higher employability - for those unemployed, digital connectivity helps with finding work and work readiness

• improved communication - digital connectivity has communication benefits, improving the ability to communicate with family and friends. Digital participation can have an impact in minimising loneliness and depression in older people (Lelkes, O 2013).

• cheaper shopping - access to the internet as having retail transition benefits, with shopping online being found to be 13% cheaper on average than shopping in store

• time saved - by accessing online services, individuals save on average 30 minutes of leisure time, amounting to 30 hours annually

Another benefit to digital connectivity is the ability to access health services and information remotely. For the individual, access to healthcare services and information digitally means better care and control over one's own health (NHS Digital, 2019). 'Looking for health-related information' was a key finding by the ONS. For the economy, providing digital skills to 100% of the UK population could contribute to over £14 billion annually for the UK economy by 2025 (CERB, 2015).

There are overlaps between digital exclusion, social exclusion, poverty and health inequalities, with those at risk of 'digital vulnerabilities' also be at risk of employment, health and financial vulnerabilities (Coleman, V (2021). For those digitally excluded through economic status (leading to restricted access to appropriate devices and the internet) or lack digital skills, this continued move towards a digitised world only serve to exclude them yet further. The risk is that those with digital access and those experiencing barriers to access, the growing social and economic gap between will only continue to widen (ONS, 2019; Carneige UK Trust).

Key links:

• Carneige UK (2016) – 'The role of digital exclusion in social exclusion'

• Good Things Foundation (2020) 'Blueprint for a 100% Digitally Included UK – For a post-COVI-19 economy'

• Office for National Statistics (2019) 'Exploring the UK's digital divide.'

• NHS Digital (2019) 'Digital inclusion guide for health and social care'

• Centre for Economics and Business Research (2015) 'Providing Basic Digital Skills to 100% of UK population could contribute over £14 billion annually to UK economy by 2025'

3.2 Patterns of working

Flexible working and working from home

There are huge geographic and sectoral variations in opportunities for working from home (WFH) flexible working arrangement (FWA). The office of national statistics (ONS) reports that a quarter (25.9%) of people had worked from home at some point during 2020 compared to 12.4% of workers in 2019.

Fewer than 14% of people in Middlesbrough worked from home compared with more than 70% in Richmond upon Thames during this time. In Scotland, 70% of people employed in communications worked remotely, but just 7% in the accommodation and food industries.

Whist we have seen a rise in remote working from the pandemic other flexible working arrangements are still less widely used (Good Work Index). Other forms of flexible working such as flexitime or compressed hours reduced over the past 12 months.

The CIPD Good Work Index also shows that those working remotely score more highly on several aspects of job quality, such as autonomy, workplace relationships and flexible working arrangements, but suffer a trade-off with higher workloads and more blurring between work and personal commitments. There is potential for remote working to exacerbate long hours culture, prior to the pandemic approximately one in four workers were working ten or more hours than they would realistically like to every week. Potential for workers to translate commute time into work time.

Employers perceptions of the impact of homeworking on productivity is mixed. CIPD identified 8 effects of working from home including work intensification, distractions, interruptions and concentration, team relationships, creativity and innovation, social isolation, avoiding the commute, work life boundaries and flexibility, stigma and career implications. Each has a potential negative effect and needs careful consideration and planning if remote working is to become the norm.

A recent systematic review found that there is limited scientific research on the impact of COVID-19 on work and workers for a wide spectrum of occupations, although health care workers and educational professions were the most widely studied. It found that manufacturing firms found positive effects regarding flexible work arrangements (FWA) including job satisfaction, and innovative work behaviour and that flexible working positively influenced work-life balance, psychological well-being, motivation, and effectiveness. Younger employees seemed to be more adaptive to the changes caused by the pandemic.

Several surveys from US bank Morgan Stanley's Alphawise Research Unit have shown that UK workers have adopted home working more readily than their European counterparts and intend to request more days at home

Disproportionate impacts

A recent study considered the disproportionate impacts that COVID-19 may have on workers depending on demographic characteristics, individual differences, and relevant organizational norms here. Some negative effects of home working identified included those for women with children at home, and also people who live alone or do not have children as they may experience loneliness and isolation from working at home, and some potential positive effects for people with disabilities.

Viewpoint research identified that for some people with a disability there have been positive effects from not having to commute but also negative effects in that for some people this is the only opportunity to get out of the house.

A further effect identified in an opinion piece is that working from home as the norm may exacerbate housing inequalities

Hybrid working and work hubs

There is very little evidence on the effects of hybrid working and working hubs in the scientific literature. However, International Workplace Group (IWG) evidence a gradual shift towards the hub-and-spoke model – where companies have their headquarters in a big city such as London or Birmingham and smaller satellite offices in the regions. This shift was under way prior to the crisis, but the pandemic has seen a notable increase in demand for working hub space.

A further study on daily decision to work from home found that experiencing more work-family boundary stressors and work coordination stressors on a certain day were associated with a greater likelihood of working in the office (vs. at home) on the next day, while experiencing more workload

stressors prompted employees to work at home (vs. in the office) on the next day. COVID-19 infection-related stressors moderated the effects of technology stressors and workload stressors on next-day work location.

Links
A systematic review on the impacts of Covid-19 on work: Contributions and a path forward from the perspectives of ergonomics and psychodynamics of work (nih.gov)
COVID-19 and the workplace: Implications, issues, and insights for future research and action. (apa.org)
https://www.cipd.co.uk/Images/good-work-index-research-report-2021-1_tcm18-96100.pdf
Working from home: assessing the research evidence (cipd.co.uk)
UK office demand 'shifting to the suburbs' amid Covid-19 crisis | IWG | The Guardian
If working from home becomes the norm, housing inequality will deepen | Susanna Rustin | The Guardian
Morgan Stanley | Business | The Guardian
https://research.birmingham.ac.uk/portal/files/68297102/Wheatley_Gifford_UK_Working_Lives_The_CIPD_Job_Quality_Index_2019.pdf
COVID-19 and the workplace: Implications, issues, and insights for future research and action - PubMed (nih.gov)
Making daily decisions to work from home or to work in the office: The impacts of daily work- and COVID-related stressors on next-day work location - PubMed (nih.gov)
(PDF) Work-Life Balance and Working from Home (researchgate.net)
Disability and the 'working from home' debate — Viewpoint - Giving your customers a voice (viewpoint-research.co.uk)