The Strategy Unit.

Social determinants of health and population health

Rapid evidence scan

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NHS
Midlands and Lancashire
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Introduction

This rapid evidence scan has been prepared to inform a programme of work within the Black Country and West Birmingham (BCWB) which aims:

a) to establish a whole-system culture and approach that promotes greater understanding of the wider socioeconomic determinants of population health specific to BCWB;

b) to establish effective collaborative action with system partners that increases the beneficial impact of those determinants; and

c) to generate new learning in respect of such action that adds to the local, national and international evidence base; and

d) to inform the future role and functions of the single strategic commissioner for the system.

Introduction

This scope of the review is to aid understanding what is known about:

a) how social, economic and environmental factors affect population health and which specific conditions individual factors affect (assuming this is readily accessible from meta sources), with a particular focus on BAME and MH/LD populations;

b) how changes in these factors correlate with/cause changes in population health (as much as possible these would be in terms of x% change in employment/income/etc. leads to y% change in specified health conditions), with a particular focus on BAME and MH/LD populations;

c) the policies/interventions that offer the greatest leverage (including cost-effectiveness) in terms of opportunity to improve population health outcomes, as well as the geographic/economic level (e.g. place, system, region, nation) at which those policies/interventions are best focused, with a particular focus on BAME and MH/LD populations. Evidence on the time effect of interventions, the duration/longevity of the benefits generated and the likelihood/transferability of impact is of particular interest.

The scan will help to ensure the robustness of the causal map and will inform the development of assumptions for use in the prospective modelling and the identification of opportunities for action. The scan aims to provide a high level summary and is not intended to be exhaustive.

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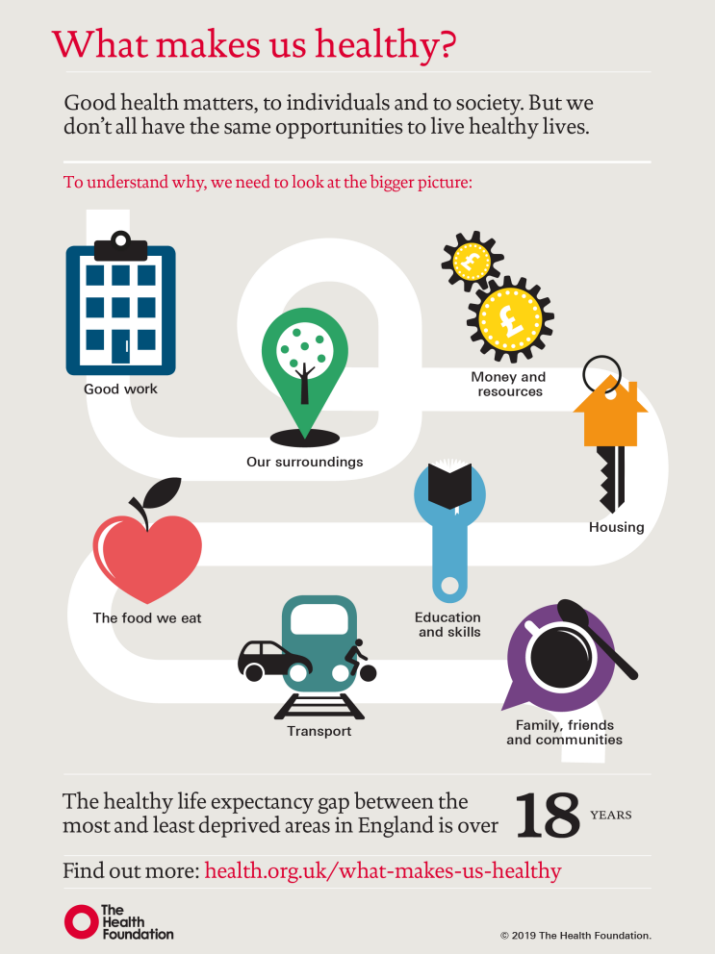
The Strategy Unit.

Context

Social determinants of health

There is growing recognition of the broader factors which influence our health and wellbeing. The quality of, and access to, health care is estimated to account for 10-20% of what contributes to people's health, according to the Health Foundation.



Rather than being something people just get at the doctor's or at hospital, health is something that starts in families, schools, communities and workplaces. It can be found in parks and in the air people breathe.

The other factors that influence health – the social determinants – affect people in different ways, according to factors like age, gender, ethnicity, sexuality and disability. And they don't operate in isolation. Rather, they are intricately woven together in a dynamic and mutually reinforcing way.

Lovell N and Bibby J (2018)

Health inequalities (Marmot et al, 2020)

Life expectancy

• Increases in life expectancy have slowed since 2010 with the slowdown greatest in more deprived areas.

• Female life expectancy declined in the most deprived 10% of neighbourhoods between 2010-12 and 2016-18 and there were only negligible increases in male life expectancy in these areas.

• In every region men & women in the least deprived 10% of neighbourhoods have seen increases in life expectancy.

Health

• There is a strong relationship between deprivation measured at the small area level and healthy life expectancy at birth. The poorer the area, the worse the health.

• There is a social gradient in the proportion of life spent in ill health, with those in poorer areas spending more of their shorter lives in ill health.

• Healthy life expectancy has declined for women since 2010 and the percentage of life spent in ill health has increased for men and women.

Mortality

• Mortality rates have increased for people aged 45-49. It is likely that social and economic conditions have undermined health at these ages.

• The slowdown in life expectancy increase cannot for the most part be attributed to severe winters. More than 80% of the slowdown (2011-2019) results from influences other than winter-associated mortality.

• There are clear socioeconomic gradients in preventable mortality. The poorest areas have the highest preventable mortality rates and the richest areas have the lowest.

Health inequalities and life expectancy/healthy life years

Bamford et al, 2019 suggest a number of measures to address health inequalities, including:

- Embedding social determinants in **implementation of the NHS Long Term Plan**
- Ringfencing money for **prevention**
- Leverage of the NHS role as an **anchor institution**
- Significant role for Directors of Public Health in **ICS development**
- Learning from **emerging whole systems approaches** to health in large and complex local areas
- Promote and foster collective control of health through **co-production and community engagement**

"CPP estimates that for England's population today, almost **80m** life years will be lost, **1.5** years per person.

Social deprivation not only affects how long people live, but also how healthy their life is.

Equivalent analysis of healthy life expectancy estimates **170m** years of healthy life are being lost, or **3.2** years per person."

Life expectancy and ethnicity (Marmot et al, 2020)

"Ethnicity is not collected at death registration. It is, therefore, not possible to calculate life expectancy estimates or mortality rates ethnicity based solely on death registration data in England. Researchers at the University of Leeds developed two methods to create estimates of 2001 ethnic mortality rates. The first method used the relationship between self-reported illness and mortality for local areas. The second used the geographical distributions of ethnic groups in the 2001 Census along with the overall mortality rates of these areas. **The two methods produced very different results, but both pointed to those with Pakistani and Bangladeshi ethnicity having the lowest life expectancy and non-British whites having the highest**. However, both results could have been affected by the socio-economic characteristics of the areas in which they lived (often known as the ecological fallacy), cultural differences in self-reporting of illness and patterns of migration (for example, recent migrants being healthier than longstanding and second-generation migrants)."

The report references two areas of work underway to explore mortality rates by ethnicity:

- The **Office for National Statistics** are using the linkage of almost all death records back to the 2011 Census to calculate mortality rates by ethnicity as recorded in the Census.
- **Public Health England** is investigating the use of mortality records linked to hospital episode records coded for ethnicity.

Avoidable mortality (Marmot et al, 2020)

"The risk of avoidable mortality is at least three times higher for women and men living in the most deprived local areas compared with those living in the least deprived areas. The fact that these deaths are 'avoidable' through deploying health care and public health measures does not mean that lack of health care was the original cause of the inequalities. It does, however, indicate that much of the mortality for those in the most deprived areas could be avoided. [...]

Overall, inequalities in avoidable deaths increased markedly between 2010 and 2017 in the most deprived areas in England, by eight percent among females and 17 percent among males. Specifically, avoidable mortality rates from respiratory diseases have risen in the most deprived area deciles since 2010, remaining much lower and largely constant in the least deprived area deciles. Mortality rates from injuries are higher and increasing in the most deprived decile for males and females. [...]

Another important cause of avoidable mortality is suicide and suicidal behaviour (self-harm), and this is also more common in more deprived communities than in wealthier areas, as well as more common for men than women. A systematic review of European countries found a **significant association between deprivation or socioeconomic disadvantage and suicidal behaviour**. Factors that contribute to suicides include **unemployment, job insecurity, unmanageable debt and lack of support services**, all of which are more likely to occur in the most deprived deciles. [...]

For both men and women, as incomes increase, suicide levels decrease. Multiple reports using English data find suicidal behaviours are consistently higher in areas with the highest level of deprivation, with estimates that rates are double or three times higher than in the least deprived areas. "

Morbidity and intellectual disabilities

A population-based study (Balogh et al, 2015) in Canada found:

- people with intellectual and developmental disabilities were **2.6 times more likely** to be hospitalized for diabetes-related ambulatory care-sensitive conditions
- **disparities in prevalence** between those with and without intellectual and developmental disabilities were most notable among women, younger adults and those residing in rural or high income neighbourhoods.

A systematic review from 2017 (Dunn et al, 2017) tentatively concluded:

- people with intellectual disabilities experience higher rates of hospital admission and this may reflect "poorer primary health care"
- "The higher volume of admissions of people with intellectual disabilities in medical and dental areas highlights the importance of staff awareness on the need of people with learning disabilities in these areas, and guides as to focussing effort and resources, and prioritising, supporting and training staff working on these types of wards"

A recent systematic review found limited evidence on morbidity in people with intellectual disabilities (ID) from ethnic groups (Robertson et al, 2019), with studies predominately focused on mental health care and specialist ID services:

- The **prevalence of intellectual disabilities** in non-white groups is likely to be at least as high as that in white groups and higher prevalence of more severe intellectual disability has been reported among some South Asian groups in the UK.
- Recent population projections for 2012 to 2030 predict that 25% of **new entrants to adult social care** for people with intellectual disabilities will belong to minority ethnic communities.
- For **referrals to a specialist intellectual disability mental health service** in South East London, schizophrenia spectrum disorder was more likely to be diagnosed in those from black communities, and in other non-white communities and less likely in the White group compared to other minority ethnic communities as a whole.
- "People with intellectual disabilities from minority ethnic communities and newly arrived communities may be doubly disadvantaged in relation to health. These families often face "**double discrimination**", experiencing discrimination on the basis of both intellectual disabilities and minority ethnic status."

Race and health

"Building a culture of health requires that we directly and meaningfully assess culture." (Cogburn, 2019)

Cogburn (2019) discusses the issues of race in health inequalities, highlighting three dimensions of culture:

- *symbolic boundaries* (proximity to centre or margins of a community, including bias, stigma, stereotypes),
- *status hierarchies* (implicit principles determining social status and prestige including institutional practice), and
- *collective imaginaries* (representations composed of symbols, myths, narratives including imagery and language).

Ethnic inequalities in social determinants of health

Analysis from Public Health England (Toleikyte and Salway, 2018) highlights a number of key messages in the inequalities experienced by different ethnic minority groups:

Key messages:

- educational attainment at GCSE and degree levels is highest for the Chinese and Indian ethnic groups. Gypsy and Irish Travellers have the lowest level of qualifications at both levels
- white and Indian groups are more likely to be in employment, with unemployment highest among Black and Bangladeshi/Pakistani populations
- Bangladeshi, Pakistani, Chinese and Black groups are about twice as likely to be living on a low income, and experiencing child poverty, as the White population
- ethnic minority groups are more likely to live in private rented accommodation and overcrowded households than the White British population
- Bangladeshi, Pakistani and Black groups are the most likely to be living in deprived neighbourhoods
- the poor housing and neighbourhood conditions for Gypsy and Traveller groups are a serious concern
- fascism, harassment and discrimination are widely experienced by minority ethnic people and have direct negative impacts on both mental and physical health. There are about 150,000 incidents of race hate crime each year
- migration journeys are diverse, but experiences before, during and after settlement can negatively affect both physical and mental health.
- there have been increases in ethnic inequalities in employment and housing nationwide over the 2000s
- important differences in the extent and trends in ethnic inequalities across localities indicate the need for both localised initiatives and learning from those areas that have made progress

Social determinants

Money and resources

Health inequalities (Marmot et al, 2020)

Poverty and Disability

"Disabled adults face some of the highest risks of poverty. **Nearly half of those in poverty in the UK in 2018 – 6.9 million people – were from families in which someone had a disability**. In 2019, SCOPE, the disability equality charity, estimated the extra living costs for people with disabilities to be, on average, £583 per month (for expenses related to their impairment or condition) and one in five has costs of more than £1,000 per month. Disabled people, at every level of qualification, are more likely than non-disabled people to receive lower pay. […] Changes to benefits and taxes since 2010 have resulted in reductions in income for disabled people and families since 2010."

Poverty and Ethnicity

"There are wide variations in poverty rates by ethnic group**. In 2018, 33% of people living in households headed by someone of Bangladeshi ethnic origin were in the most deprived quintile compared with 15% of the White population**. […] all minority ethnic groups had higher rates of poverty than white, with housing costs raising poverty rates considerably."

Macroeconomic conditions and health

"In terms of magnitude, we find a **1 percentage point increase in local area employment growth leads to a 1.7% drop in chronic health conditions**, with similar effect sizes by gender. For context, the GFC [Global Financial Crisis] period saw around a 5-percentage point drop in employment rates. Using these estimates our model would predict **an increase in chronic health conditions of 8.5 percent following the GFC**. The estimated effects are largest in areas with a more traditional industrial composition, older populations and populations with poorer long-term health, which fits with the long-term association of poorer areas and poorer health that exists in Britain (and many other economies). [...] these effects occur with a lag: we find that **it takes around 10 quarters for the health effects of a change in employment to fully eventuate**. [...] when we examine 5 broad types of chronic condition in a unified framework that embeds cross-condition and cross-area effects, we find that all conditions respond counter-cyclically, with **strongest effects for mental health conditions, followed by musculoskeletal conditions, but still substantive effects for cardiovascular, respiratory and other types of conditions**. Our estimates suggest that **a 1 percent point increase in employment growth leads to 4.2% drop in mental health conditions, a 2.7% fall in musculoskeletal conditions, and a fall for cardiovascular, respiratory and other conditions of around 2.4%**. It takes longer for those conditions with the largest estimated effects (mental health conditions and musculoskeletal conditions) to fully work through the economy, with the quickest response being for respiratory conditions."

(Janke et al, 2020)

The impact of recession and austerity on public health

There is evidence to suggest that **greater job insecurity, rising unemployment, and privatization of public goods and services** can explain the increase in social inequalities in health during crises. However, the impacts appear to be lessened in some countries where there are **strong welfare support structures** in place, as evidenced in Nordic countries in the 90s. This may have helped to protect some more vulnerable groups being disproportionately affected (Bacigalupe and Escolar-Pujolar, 2014; Frasquilho et al, 2016).

A systematic review (Rajmil et al, 2014) exploring the impact of the 2008 recession suggests that the economic crisis may pose a serious **threat to children's health**, and disproportionately affects the most vulnerable groups. The review included a study in the UK by DEFRA showing a social gradient with **children from low income families eating less fruit and vegetables** between 2007 and 2011. The authors note that economic changes usually occur rapidly, leading to deterioration in the social determinants of health, but that **consequent changes in health outcomes have long latency periods** and may take decades to become fully apparent.

"The EU Survey on Income and Living Conditions (EU-SILC) surveys if households are able to afford meat (or a vegetarian equivalent) every second day. Across Europe, from 2005 to 2010 the **proportion of people reporting an inability to afford to eat meat or equivalent** declined by approximately half a percentage point each year. After 2010, **when austerity measures were imposed, this trend reversed, rising from 8.7% in 2009 to 10.9% in 2012, remaining elevated thereafter** (approximately an additional 13.5 million people experiencing food insecurity). While unemployment and stagnating wages have been some of the major drivers of rising food insecurity in Europe, **cuts to social protection spending appear to have exacerbated the impact of these economic shocks on access to healthy diets**." (Stuckler et al, 2017)

The impact of recession and austerity on mental health

A cohort study in Stockton on Tees (Mattheys et al, 2016) found:

- Material *[income, employment, education, physical environment]* and psychosocial factors *[how people experience inequality]* were the most important determinants of the inequalities gap.
- As the authors point out, this contrasts with the typical focus of health policy on behavioural factors *[including lifestyle behaviours such as diet, exercise, smoking, alcohol consumption]*.

A systematic review (Frasquilho et al, 2016) exploring mental health outcomes of recessions concluded that "periods of recession correlate with higher prevalence of common mental disorders, substance disorders, and ultimately suicidal behaviour":

- Factors such as unemployment or insecure employment, debt, pre-existing mental illness seem to increase vulnerability.
- There may be a long term impact in children and young people, particularly families impacted by unemployment or poverty.
- Better mental health can contribute to economic growth.

"Despite some potential methodological flaws, across study locations, designs, quality, and indicators measured, the literature indicates that there is a connection between economic decline and psychological disorders (Dooley & Catalano, 1984). **Detrimental effects of economic crises most negatively affect the poor, less educated, and unemployed populations**."

Zivin et al, 2011

The impact of recession and austerity on mental health

"In England, the increase in suicides in 2008–10 was significantly associated with increased unemployment, and resulted in an estimated 1000 excess deaths"

(Karanikolos et al, 2013)

A cross-sectional analysis of Health Survey for England (1991–2014) data (Thomson et al, 2018) explored mental health outcomes following the 2008 recession [measured by General Health Questionnaire-12 (GHQ) caseness, stratified by gender and socioeconomic position (area-level deprivation and highest educational attainment)].

- "The prevalence of **age-adjusted male** GHQ caseness increased by 5.9% (95% CI 3.2% to 8.5%, p<0.001) from 2008 to 2009 in the immediate postrecession period, but recovered to prerecession levels after 2010. **In women**, there was little change in 2009 or 2010, but an increase of 3.0% (95% CI 1.0% to 5.1%, p=0.004) in 2012 compared with 2008 following the onset of austerity. Estimates were largely unchanged after further adjustment for socioeconomic position, employment status and household income as potential mediators. Relative socioeconomic inequalities in GHQ caseness narrowed from 2008 to 2010 immediately following the recession, with Relative Index of Inequality falling from 2.28 (95% CI 1.89 to 2.76, p<0.001) to 1.85 (95% CI 1.43 to 2.38, p<0.001), but returned to prerecession levels during austerity. **Those in the most deprived groups have been shown to be at potentially heightened risk of poor mental health following the onset of austerity, with the least educated at highest risk**."

The impact of recession and austerity on mental health

A review (Stuckler et al, 2017) on austerity and health found evidence suggesting that austerity exacerbates and prolongs the adverse mental health impacts of recession, based on a range of studies and analysis including:

- ONS analysis showing over 500,000 public sector job losses from June 2010 to September 2012. "The **regional pattern of job losses correlates with changes in suicides; a 20% rise was observed in those regions most affected by austerity**: the North-East, the North-West, and Yorkshire and the Humber, but a decline in London, where unemployment fell."
- A study using data from health and retirement surveys in the USA and 13 EU countries. Job losses among 50–64 year olds was associated with **28% and 8% increases in depressive symptoms in the USA and Europe respectively**.
- Analysis of **suicide rates in Europe,** which had been falling prior to the onset of recession in 2007, **rose by 6.5% in 2009 and remained elevated through 2011**. "Typically suicide rates rebound after GDP recovers. However, in many European nations, **suicide rates remain elevated even where economic recovery appears to have occurred**. The reasons are multiple; importantly, **several socio-economic risk factors for suicide remain elevated**. These include unemployment, unaffordable housing and indebtedness."

An earlier systematic review (Parmar et al, 2016) similarly found a significant **increase in deaths by suicide** during the recession, affecting men of working age and the unemployed in particular, though they caution about the risk of bias in the majority of studies:

- "The results on sex and age were somehow contradictory, but, overall, **men of working age** seemed to be more severely affected, as reflected mainly in suicide trends and self rated health. In terms of mental health, however, **women** seemed to have performed worse than men. There is also some evidence that the health of **immigrants**, especially those who had illegal status and lacked social security, deteriorated much more during the crisis than that of natives. This is consistent with previous studies that showed worse effects on **groups that lack social protection**. Finally, some evidence suggests that the crisis increased social inequalities in health, disproportionately affecting immigrants, those who were less educated, and those living in certain regions.**"**

The impact of recession and austerity on mental health

Self-harm

"A navigator-style service could ensure access to financial advice after self-harm, through the maze of NHS and community services. As economic difficulties and austerity seem likely to continue, the development and robust evaluation of such initiatives is urgently required." (Barnes et al, 2016)

- A qualitative study (Barnes et al, 2016) of 19 people who attended hospital following self-harm suggests that economic hardships resulting from the recession and austerity measures "accumulated or acted as a 'final straw' to trigger self-harm, often in the context of co-existing or historically damaging life-experiences". Participants reported financial hardship (including unemployment, debt, benefit changes and housing problems) and co-existing life experiences (childhood abuse, bullying, bereavement, long-standing physical/mental health problems) which combined as triggers for self-harm. Participants reported a need for support but were not aware how to access support services. The authors suggest early intervention and targeted psychosocial therapy for those known to be at risk (people with co-existing and past vulnerabilities).

Substance abuse

"This balance of evidence leads us to expect drug use to increase during times of economic austerity such as during a recession." (Nagelhout et al, 2017)

- A systematic realist literature review (Nagelhout et al, 2017) found mainly supportive evidence for the hypothesis that economic recessions and unemployment increase psychological stress, which increases illegal drug use. There was also evidence of an association between non-working time/social exclusion and increased drug use.
- A realist systematic review (de Goeij et al, 2015) found evidence to suggest that among men, the net impact of economic crises will be an increase in harmful drinking.

The broader political and social context

In 2018 Philip Alston (Alston, 2018), UN Special Rapporteur on Poverty, released a report on poverty in the UK, highlighting the impact of a number of policies, including: austerity measures, the introduction of Universal Credit and Brexit:

"In 2018 14 million people, a fifth of the population, live in poverty. Four million of these are more than 50% below the poverty line,1 and 1.5 million are destitute, unable to afford basic essentials. The widely respected Institute for Fiscal Studies predicts a 7% rise in child poverty between 2015 and 2022, and various sources predict child poverty rates of as high as 40%."

"Nearly half of those in poverty, 6.9 million people, are from families in which someone has a disability. People with disabilities are more likely to be in poverty, and are more likely to be unemployed, in insecure employment, or economically inactive."

A realist review (O'Campo et al, 2015) explores the impacts of welfare systems during times of hardship:

"By showing several examples of mechanisms how generous unemployment policies can alleviate poverty and improve psychosocial health, and encountering little evidence to the contrary, our findings have special importance in the context of the current economic crises, where the most marginalized population groups suffer the most from job loss and consequences of unemployment. And though unemployment benefits are not intended to compensate fully for a loss of earnings, they can moderate harmful consequences of unemployment and speed up transition between jobs. Our findings support the view that carefully planned dimensions of a generous UI [unemployment insurance] system averts economic hardship and poverty and also positively impacts mental well-being."

Social determinants

Good work

Health inequalities (Marmot et al, 2020)

Employment and health

"Despite the increase in employment since 2010, the risk of being unemployed and particularly long-term unemployed is still highly unequal between different groups. **White people, married men, people with no disabilities and those with higher qualifications have higher employment rates than minority ethnic groups, women, lone parents, people with disabilities**." […]

"Young people are increasingly citing mental health problems as the reason for work absence: in 2009, 7.2% of young people attributed their sickness absence to mental health conditions rising to 9.6% in 2017 and there is also an **association between work stress and ethnic background**. The Bristol Stress and Health at Work Study found that 30% of non-white groups reported very high, or extremely high, levels of stress at work compared with 18% of white workers." […]

"The inequality dimensions of poor-quality work will have a significant impact on health equity; notably, **those with lower socioeconomic position, younger people, those in lower paid jobs and non-white people are all more likely to experience poor quality work with attendant impacts on health**. " […]

"The number of **people in work and living in poverty increased** from just over three million in 2010/11 to 3.7 million in 2015/16, with 2.4 million in full time employment." […]

"Workers from minority ethnic groups are more likely to be on zero-hours contracts than White workers: 1 in 24 minority ethnic workers is on a zero hours contract compared with one in 42 White workers, and minority ethnic workers are more likely than White workers to be on agency contracts. There are age related differences too, larger number of 16–24 year olds and over-65s are on zero hours contracts compared with other age groups." […]

"**Automation is likely to impact most on those with lower levels of education, and lower paid employment** – and these are the people who are already at higher risk of worse physical and mental health."

Employment and health

Guidance from Public Health England (Durcan, 2015) highlights a number of key messages, including:

- **Musculoskeletal disorders (MSDs) and work-related stress, depression and anxiety** were the most common work-related illnesses in 2013-14.
- There is no generally accepted definition of good work but there are a **range of features commonly associated with good jobs**: adequate pay; protection from physical hazards; job security and skills training with potential for progression; a good work-life balance and the ability for workers to participate in organisational decision-making. Skilled work typically has more protective elements and less health-adverse conditions.
- Local authorities have the opportunity to **create jobs** through a range of partnerships and initiatives, including working through local enterprise partnerships, employment services providers, and with third sector organisations to devise job creation strategies that could reduce health inequalities. Local partners should encourage jobs where workers are valued, receive a living wage at minimum, have opportunities for promotion, and are protected from adverse conditions, like shift work, when possible.

"There are four ways in which the nature of work can adversely affect health: through adverse physical conditions of work; adverse psychosocial conditions at work; poor pay or insufficient hours; and temporary work, insecurity, and the risk of redundancy or job loss. In 2014, an estimated 1.2m working people in Great Britain had an illness or health condition believed to be caused, or exacerbated by, their current or previous work placement. "

Durcan, 2015

Unemployment and health

Analysis by Karanikolos et al (2013) found that **the prevalence of psychological problems in unemployed people (34%) is more than twice that in employed people (16%).** The authors suggest the impact is lessened in countries which have strong support structures in place e.g. welfare system. Poor health in unemployed people may be due to lower income leading to poor nutrition but may also contribute to access issues.

Their analysis also points to:

- Higher mortality in unemployed people when demographic and socioeconomic factors are controlled for
- Duration of employment correlates with increased risk of mortality
- An association between unemployment and increased unhealthy behaviours

Employment and mental health inequalities

A study of data (Nieuwenhuijsen et al, 2015) from the HELIUS programme (Healthy Life in an Urban Setting) explored the experience of different ethnic groups working in Amsterdam:

- Ethnic groups showed statistically significant differences in **prevalence of unfavourable working conditions**, with all ethnic minority groups having higher lack of recovery opportunities compared to ethnic Dutch workers (17 %).
- "While controlling for ethnicity, **lack of recovery opportunities** was associated with poorer mental health indicated by both mental health outcomes (generic mental health: B −1.88, CI −2.34 to −1.42; and depressive symptoms: B 1.04, CI 0.81 to 1.27). **Perceived work stress** was also associated with poorer mental health outcomes, with stronger associations compared to recovery opportunities (generic mental health: B −8.26, CI −8.79 to −7.72; depressive symptoms: B 4.56, CI 4.29 to 4.82). These relationships were all fairly similar for men and women separately. All tested associations showed the same pattern; the associations were less strong in women but remained statistically significant. One exception was the model with recovery opportunity and depressive symptoms, where the B coefficient for men was .92 and 1.01 for women, indicating a stronger association in women."

Social determinants

Education and skills

Education and life chances

"The transition from education-to-work is a challenge for young people from all ethnicities. Barriers in the labour market are not just faced by ethnic minority young people and their impact varies depending on locality, gender, and other key demographic factors. As we have illustrated, different ethnic groups face considerably different employment outcomes, with Indian and Chinese groups experiencing only slightly higher unemployment rates than White groups (in fact, research from Demos (2015) shows that men from Chinese and Indian backgrounds are nearly twice as likely to be in higher managerial positions than White British men). However, the evidence here suggests that ethnic minority groups, including those with qualifications, face disadvantages with respect to both unemployment and underemployment. Without targeted action to support the education-to-work transition of disadvantaged ethnic minority young people, the gap in employment outcomes between ethnic groups is unlikely to narrow."
(Morris, 2015)

Analysis from the Joseph Rowntree Foundation (Barnard et al, 2017) found that:

Living in poverty as a child increases the risk of having low attainment at school. Adults in poverty, and those in low-paid jobs, are less likely to receive training and to progress into better jobs than those who are better paid. In England and Northern Ireland, at age 16, young people from poorer backgrounds are around a third less likely to achieve good qualifications; in Wales they are about half as likely and in Scotland a fifth less likely (although this is not directly comparable with other parts of the UK as attainment data in Scotland is available by area rather than family's circumstances).

Social determinants

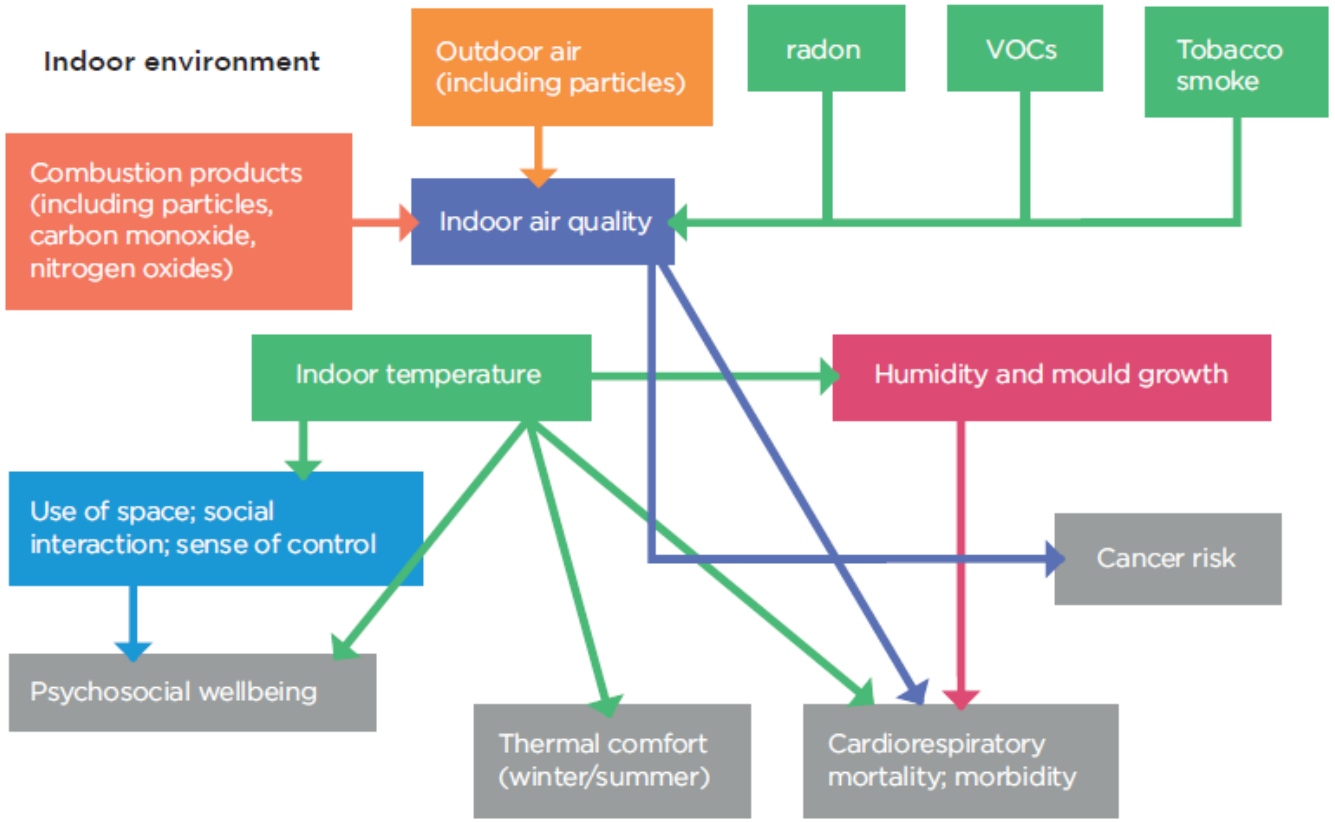
Housing

Housing and health (Staatsen et al, 2017)

This diagram from Staatsen et al (2017) sets out the relationship between indoor environments and health.

Staatsen et al quote analysis by Eurofound which:

"calculated that if all severe inadequacies in the housing stock (e.g. mould, dampness and cold or structural damage) across the EU could be reduced to an acceptable level, the total investment would amount to ca. €295 billion (2011 prices). This would be balanced by a saving in the annual total societal medical costs for EU Member States of almost €194 billion, meaning that every 3€ invested in reducing housing hazards would save 2€ in medical costs within a year. As the effect of home improvements are expected to last much longer than a year, the savings in terms of medical costs will ultimately be higher, with a breakeven on investments expected within 1.5 years on average over all EU countries, with big differences between countries."



Insecure housing and homelessness

A systematic review (Vasquez-Vera et al, 2017) explored the impact of the threat of eviction on health:

- Evidence from the studies included supports the hypothesis that individuals under **threat of eviction present negative health outcomes**, both mental (e.g. depression, anxiety, psychological distress, and suicides) and physical (poor self-reported health, high blood pressure and child maltreatment).
- However, the **distribution and extent of these outcomes** depend on inequity dimensions such as gender, age, ethnicity and territory.
- The review also examined qualitative studies that explored the perspectives of affected individuals. Findings highlight the **social stigma** attached to poverty, with individuals experiencing feelings of insecurity, embarrassment, isolation and a sense of loss of control, which can increase risk of anxiety, depression and suicidal ideation. Most of the studies originate in the US, where the association between foreclosure and mental health was significantly stronger in counties with a higher proportion of African American people.

Social determinants

Friends, families and communities

The impact of mental illness during childhood

"What is the total working lifetime economic cost of childhood psychological problems? If we linearly interpolate between our ages of data collection and conservatively assume that the income loss remains flat from age 50 y until the woman's retirement age at age 60 y, the discounted value of the working lifetime loss in net family income to this birth cohort discounted at a 3% real discount rate is £215,000. That was the historical work life cost for those born in 1958. **If we consider instead a 23 y old entering the British labor market in 2008, the average lifetime net family income loss would be £388,000** because real incomes in Britain have grown considerably over this time period. This is an understatement of full costs because it does not include any psychological costs to the family, friends, and society, as well as the affected person."
(Goodman et al, 2011)

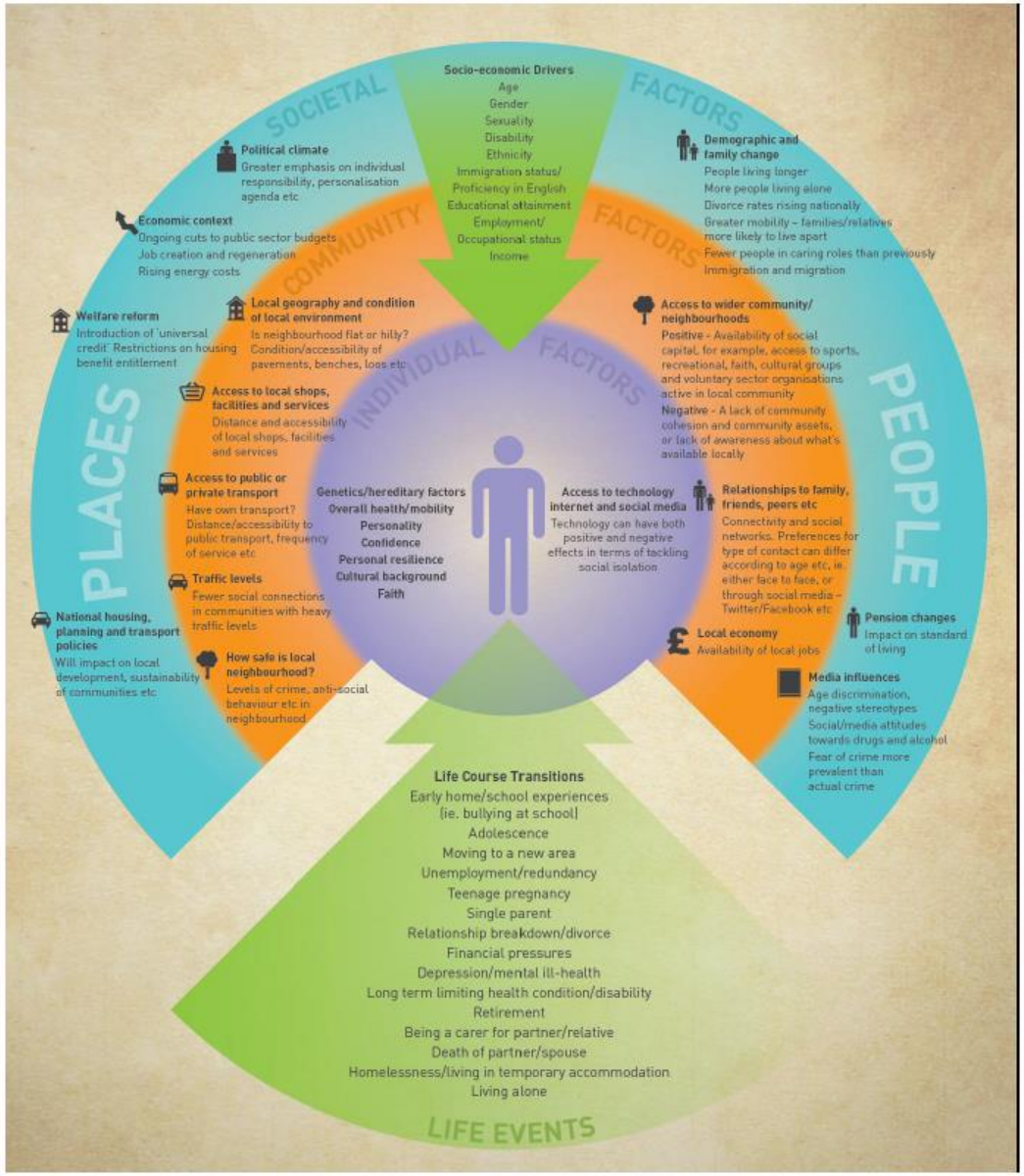
An American study from 2011 (Goodman et al, 2011) estimated the net family income loss at adult ages associated with experiencing childhood psychological problems:

- Large effects are found due to childhood psychological problems on the **ability of affected children to work and earn as adults** and on intergenerational and within-generation social mobility.
- Adult family incomes are **reduced by 28% by age 50 y**, with sustained impacts on labour supply, marriage stability, and the conscientiousness and agreeableness components of the "Big Five" personality traits.
- Effects of psychological health disorders during childhood are **far more important over a lifetime than physical health problems**.

Loneliness and isolation

Guidance from Public Health England (Durcan and Bell, 2015) highlights the association of isolation with social determinants:

- Evidence from a meta-analysis of 9 longitudinal studies suggests that social isolation and loneliness are associated with 50% excess risk of coronary heart disease, which is broadly similar to the excess risk associated with work-related stress.
- When effective interventions are in place, the return on the investment can be substantial, e.g. the Family Action Well Family Service reduced the number of GP consultations, demonstrating a social return on investment of £5.96 for every £1 invested.
- Contributing factors to social exclusion can include: lack of sufficient income to afford the expenses involved in participating in social networks; social and cultural factors such as perceived and actual discrimination based on, for example, ethnicity, race, nationality, health status, sexual preferences and age.
- Social isolation is a health inequality issue because many of the associated risk factors are more prevalent among socially disadvantaged groups. Deprived areas often lack adequate provision of good quality green and public spaces, creating barriers to social engagement. Access to transport is also vitally important in building and maintaining social connections.



Source: Dave Clarke and Liz McDougall, Bristol City Council.[26]

Social determinants

Our environment

Health inequalities (Marmot et al, 2020)

This analysis highlights key factors associated with physical environment and health inequalities:

High street feature	Inequalities	Direct impacts on health	Indirect impacts on health
Lack of diversity in retail offer	Higher density of payday loan, alcohol, gambling and fast food outlets in areas of deprivation. Impacts on less mobile populations disproportionately.	Increased risk of obesity, diabetes, cardiovascular disease and certain cancers. Higher levels of alcohol addiction and alcohol-related harm and an increased risk of depression, trauma, heart disease and stroke.	Increased likelihood of poor mental health, including depression, cognitive impairment and dementia linked to social isolation. Increased levels of stress and poor mental health associated with financial insecurity. Poor mental health of family members, associated with alcohol addiction and gambling addiction.
Lack of green infrastructure	Deprived inner-city areas have five times less the amount of good-quality green space and higher levels of pollution than other urban areas.	Increased vulnerability to heat island effects. Increased risk of cancer, childhood and adult asthma, heart disease and dementia. Lower levels of physical exercise leading to higher risk of obesity, diabetes and cardiovascular disease.	Poorer levels of social interaction, impacting on mental health.
Noise and air pollution	Areas of deprivation have a greater exposure to air pollution and noise than wealthier areas.	Noise pollution: increased stress hormones linked to cardiovascular disease, and increased blood pressure; impaired cognitive function in children; disrupted sleep. Air pollution: increased risk of cancer, childhood and adult asthma, heart disease and dementia; increased mortality and hospital admissions.	Noise pollution: impaired quality of life leading to poor mental health, physical stress, physical inactivity and behavioural and psychological effects.
Litter and area degradation	Deprived areas experience poorer local environments overall, including higher levels of graffiti, fly-tipped waste and litter, associated with low level crime and anti-social behaviour.	Poor mental health and stress-related illness from increased levels of anti-social behaviour, crime and fear of crime. Lower levels of physical activity linked to obesity, diabetes, cardiovascular disease and some cancers.	Poor mental health associated with increased risk of social isolation, including depression, cognitive impairment and dementia.
Road traffic collisions	Rates of fatal and serious injuries for 5–9 year olds are nine times higher than average in the 20 percent most deprived areas than in the least deprived areas. Cycling fatalities are higher in the 20 percent most deprived wards than in others. Risk of injury varies depending on employment status and ethnicity of parents, creating inequalities	Death and physical injury.	Poor mental health including post-traumatic stress disorder.
Crime and fear of crime	Higher levels of crime are found in poorer areas and greater fear of crime in inner city areas. Greater fear of crime is also found in Black and minority ethnic communities, young people, older people and women. Disproportionate victimisation is experienced by young Black men, people with disabilities, and LGBT people.	Substantial and long-lasting physical injury and psychological distress. Depression, anxiety and toxic stress associated with hypertension, cardiovascular disease, stroke, asthma, overweight and obesity. Increase in poor health behaviours linked to cancer, depressive disorders, heart disease, stroke and physical trauma.	All-cause mortality, coronary health disease, pre-term birth, low birth weight and poorer health behaviours such as lower levels of physical activity mediated through psychosocial pathways.
Cluttered pavements and non-inclusive design	Older people, people with physical disabilities, people with reduced mobility and parents with young children are affected the most by cluttered pavements and non-inclusive design reducing opportunities for physical exercise, social interaction and access to health-promoting goods and services.	Increased risk of obesity-related diseases including diabetes, cardiovascular disease and some cancers. Poor mental health including loneliness, increasing the risk of depression, cognitive impairment and dementia, poor health behaviours, coronary heart disease and mortality. Increased risk of trips and falls, and road traffic injury or mortality.	Anxiety, depression and low self-esteem associated with childhood overweight and obesity linked to low levels of physical exercise.

Source: Institute of Health Equity (279)

Health inequalities (Marmot et al, 2020)

Crime and violence

"Crime and the fear of crime have physical and psychological effects such as whether or not people feel safe and in control in their communities. These, in turn, influence health inequalities. **Victims of crime and offenders are more likely to live in England's most deprived areas** than in better-off areas. People living on lower incomes are much more likely than wealthier people to fear crime and to be the victims of crime. Compared with households on incomes above £50,000, households on incomes below £10,000 are:

- Twice as likely to suffer violence with injury
- Twice as likely to be burgled
- Three times as likely to be robbed or mugged
- Three times as likely to suffer rape or attempted rape
- Six times as likely to be a victim of domestic violence

Since 2010, crime rates have declined in England but violence against the person is increasing and the gap in terms of the likelihood of being a victim of this type of crime is widening between people living in the most and least deprived local authorities. **In 2016/17 the rate of violence against the person was 26.2 per 1,000 people in the most deprived areas compared with 15.3 per 1,000 in the least deprived areas**."

Health inequalities (Marmot et al, 2020)

Climate change

"In the UK close to 2 million people live homes in areas of significant river, surface water or coastal flood risk and **people living in properties in the UK's most deprived communities face even higher increases in risk from flooding**. Met Office analysis shows that in England milder, wetter winters and hotter, drier summers will increase, with the number of intense hot days and heavy rainfall events also likely to increase. Without action, annual UK heat-related mortality is projected to increase from a current baseline of approximately 2,000 heat-related deaths (in the 2000s) to more than 7,000 per year in the 2050s."

Environment and mental health

"**Living in less deprived areas affords considerable protection towards mental health and mental wellbeing**, and people who live in these areas are likely to score significantly higher on mental health measures." (Mattheys et al 2016)

A cohort study (Mattheys et al 2016) in Stockton on Tees reports on the relationship between living in a more affluent area and better mental health, including **factors which can be "protective"** such as access to green space, access to services (education, public services, childcare) and availability of jobs.

A study from 2015 (Smith et al, 2015) aimed to identify the socio-demographic and environmental determinants of a range of physical and mental health outcomes in an inner city school-based population of adolescents aged 11 to 12 years:

"Though **physical activity** increased with family affluence and general health was worse in those receiving free school meals, there was a mixed relationship with well-being and no relationship with depressive symptoms or longstanding illness. However, the **impact of the environment** was much stronger and consistent across a range of neighbourhood metrics. Concurrent with previous findings across national contexts, **adolescents who perceived their neighbourhoods positively had better mental health, reported better general health, were more likely to take part in physical exercise and were less likely to have a longstanding illnes**s."

Access to green space

A EuroHealthNet report (Staatsen et al, 2017) found evidence of an association between access to green space and perceived mental health, including:

- An international review of 60 studies shows an **association between green space and reduced obesity** (though the findings could be modified by age and socioeconomic status)
- The impact of nature on physical and mental health may be explained by mechanisms including **air quality, physical activity, social cohesion, and in particular stress reduction**.
- Access to green space may encourage more **physical activity**, pointing to a range of studies which found that recreational walking, increased physical activity and reduced sedentary time were associated with access to, and use of, green spaces.
- There is limited evidence available on the relationship between green space and **social cohesion** with some positive evidence on streetscape greenery and community gardens and social ties in neighbourhoods.
- There is an issue that green space may be seen as unsafe in some areas (**crime and antisocial behaviou**r) though there is some limited evidence that new green spaces can help to reduce crime.
- **People in deprived areas are likely to have poorer access to green space**.

"Green space can reduce stress and increased subjective wellbeing in two general ways. First, natural areas and features can **reduce exposure to challenging environmental conditions** by increasing distance to stressors and/or decreasing their perceptual salience. For example, green spaces between dwellings and heavily trafficked roads can reduce noise annoyance for residents, vegetation can conceal displeasing structures, and landscaping around housing can help residents maintain privacy and avoid feelings of crowding. Second, **nature can help people restore their adaptive resources**. Escape from physical and social stressors has long been described as an important motive for recreation in natural areas."

Access to green space

A WHO systematic review (Schule et al, 2019) highlights a key problem with studies on green space – there is inconsistency in **how "green" or "blue" space is defined** and different interpretations of **proximity** (i.e. how near is near?). The authors advise caution in overinterpreting evidence on green space and advise that a pragmatic approach to address inequalities and access to green space include:

- development of adequate **equity indicators in collaboration with** local planners and other relevant actors, with the active participation of vulnerable and disadvantaged groups
- take into account the **risk of gentrification processes** "because green revitalisation of an area might also result, in the long-term, in only people with a high socioeconomic position being able to afford to live there. A promising approach in the context of environmental gentrification is the strategy 'just green enough', which aims to replace market-driven processes with bottom-up processes that address green space interventions that involve the needs and concerns of the local community."

Social determinants

Transport

Active transport

A EuroHealthNet report (Staatsen et al, 2017) suggests that the health and economic benefits from active transport outweigh the relatively low costs of cycling promoting measures. The report points to findings from a study which explored the potential impact if adults in urban areas in England and Wales adopted travel patterns of Switzerland, the Netherlands, or California:

> "All else being equal, adoption of high rates of active travel comparable to Switzerland (walking) or the Netherlands (cycling) would result in the **prevention of approximately 6–10% of all deaths caused by diseases associated with physical inactivity**, and about **3–4% of all deaths due to all causes**. Conversely, a shift towards somewhat lower levels of walking similar to California would result in up to 3000 additional premature deaths annually."

In terms of interventions, options include:

- Financial incentives
- Legal measures
- Increased availability/infrastructure
- Supporting behaviour change through lifestyle coaching and training

The evidence base remains underdeveloped due to challenges associated with measuring and evaluating such interventions.

Social determinants

The food we eat

Health inequalities (Marmot et al 2020)

Food poverty

"Stress, depression and anxiety associated with food insecurity affect more than half of households who are referred to food banks and a quarter of households have a member with a long-term physical condition or illness in 2018. **Children who grow up in food-insecure homes are more likely to have poor health and worse educational outcomes** compared with children growing up in food-secure homes. [...]

Between 2004 and 2016 food insecurity among low-income adults rose from 28% in 2004 to 46% in 2016. **Between 8 and 10% of households in the UK were food-insecure between 2016 and 2018, experiencing poor physical and mental health as a result**. [...] The Trussell Trust network of food banks, constituting around 61% of all food banks in the UK, had 65 food banks in early 2011 and 1,200 in 2019. [...]

The poorest 10% of English households would need to spend close to three-quarters of their disposable income on food to meet the guidelines in the NHS's Eatwell Guide, compared with only 6% of income for households in the richest decile shown."

The impact of austerity

An ethnographic study in Stockton on Tees explored the impact of austerity on health. The study explored the use of foodbanks (Garthwaite et al, 2015):

- Foodbank users were almost exclusively of working age, both men and women, with and without dependent children
- All were on very low incomes – from welfare benefits or insecure, poorly paid employment
- Many had pre-existing health problems which were exacerbated by poverty and food insecurity
- Although foodbank users were well aware of the importance and constitution of a healthy diet, they were usually unable to achieve this for financial reasons
- More typically they had to access poor quality, readily available, filling, processed foods.

The study also explored perspectives of people within the community, including a perceived sense of low control over health improvement (Garthwaite et al, 2017):

"… which was linked by participants to the negative effects that living a life affected by multiple and complex issues; for instance, food and fuel poverty, debt, bereavement, relationship breakdown, and sexual/domestic abuse. The accumulation of these factors then makes it difficult for people living in the most deprived areas to dedicate time and resources to protecting and managing their health."

Food choices

A EuroHealthNet report (Staatsen et al, 2017) addresses the complexity of food, health and inequalities:

- Evidence shows that awareness raising alone is not sufficient
- There are a range of factors influencing our food choices: taste preferences, price, attractiveness, convenience and norm fitting properties.
- Food behaviours are largely habitual and changing behaviours will involve changes to social, physical and information environments

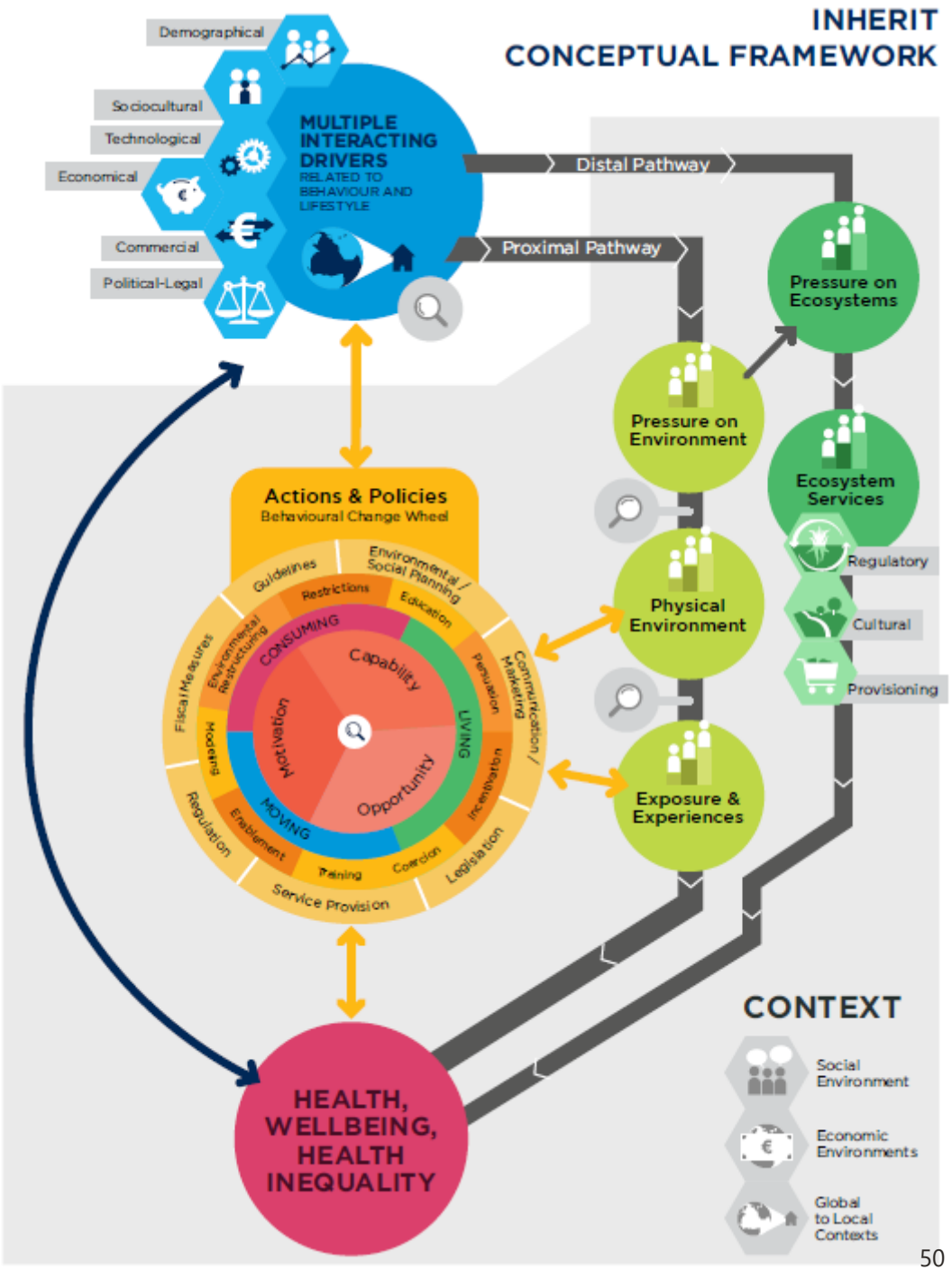
"Food choices take place in a context of factors, of which some are more upstream and not in an individual's sphere of influence (e.g. healthy food store availability) and factors that are more within an individual's sphere of influence (knowledge, food preferences, food storage skills, sociocultural food practices)."

Interventions and models

Interdependencies

This diagram from the INHERIT programme (Staatsen et al, 2017) demonstrates the interdependencies of interventions to address social determinants of health.

This scan focuses on service provision.



Interventions to address mental health in austerity

A review (Knapp, 2012) explored the potential return on investment of several interventions:

- **Workplace-based programmes**:
  - inexpensive to introduce (around £80 per employee per year) with savings of >£9 for every £1 invested, benefits accruing mostly to employers through reduced absenteeism
  - programmes include a health risk appraisal, and tailored information and advice
- **Suicide awareness training** for GPs and other key health professionals and **CBT** for those identified as at risk:
  - can increase the detection rate of suicide risk by 20% in the short term;
  - return of £44 from each £1 invested in training for GPs, mostly linked to employment and productivity
- **CBT for people with medically unexplained symptoms in primary care**:
  - lower NHS costs (reduced GP consultations; A&E and other hospital attendance; reduced prescriptions) and reduced absenteeism
  - savings of £1.75 for every £1 invested were calculated for a comprehensive programme, and £7.82 for every £1 invested for a targeted programme, with most of pay-offs accruing to the NHS
- **Early intervention teams for young people** (aged 15-35 years) with a first episode of psychosis:
  - can reduce relapse rates and improve both vocational recovery and quality of life
  - modelling suggests a return of c£18 from each £1 invested, including c£10 in direct public sector expenditure (almost all of which accrued to the NHS)

Parenting programmes for children with conduct disorder:

- reduced use of health, social care and special education services, as well as reduced crime in later years
- with an average cost of £1177 per family, return over a 25-year period of 2.8 - 6.1 times the intervention cost (higher savings possible if high dropout rates are addressed)

Community navigators for immigrant and ethnic minorities

"…culturally competent guidance provided by navigators from a patient's own ethnic community might play a major role in overcoming barriers to healthcare." (Shommu et al, 2016)

A systematic review (Shommu et al, 2016) suggests that community navigators may offer some benefits to immigrants and ethnic minority groups (however, the studies included are mostly from the US). Findings include:

- Major roles of the navigators included providing **culturally tailored health education, lifestyle workshops, self-care training and guidance** to overcome barriers to accessing the healthcare system.
- In several studies, culturally designed diabetes education from Spanish-speaking community navigators led to **significant reduction of blood HbA1c levels** among Hispanic adults with type 2 diabetes.
- Cost effectiveness information was only available for one study - a cost-effectiveness analysis of a community navigator intervention in Hispanic adults with type 2 diabetes. The extent of HbA1c level reduction was higher in patients who received more frequent navigator contacts [Over the 20-year time horizon, they estimated a cost-effectiveness for the program of **$33,319 USD per QALY** gained. Interventions for diabetes control or management are considered cost-effective if they fall under the threshold of $50,000 USD per QALY gained.

This is supported by a recent systematic review (Robertson et al, 2019) which suggests "employment of **liaison workers** from similar Ethnicity and Health ethnic or cultural backgrounds could help families seek assistance and services". It is suggested that **parent advisor services** could be useful to help navigate **intellectual disability services**.

Connecting people to support

A joint report from the Royal College of GPs and Citizens Advice found (cited in Marmot et al, 2020):

- two-thirds of people who used the **advice services within the GP surgery** would not have accessed it otherwise.
- 19% of GP consultation time was spent on **non-clinical issues**
- There are approximately 6,990 GPs and in 2015 it was estimated 640 GP surgeries operated welfare and debt advice sessions.

School-based programmes

The recent updated Marmot Review (Marmot, 2020) highlights the effectiveness of projects in schools:

- The TEENAGE project provided fruit and vegetables free of charge at schools. The results demonstrate increased **healthy food intake in student groups** of both low and high socioeconomic status after two years. Providing a free breakfast resulted in an enduring increased intake of healthy food only among the group with low socioeconomic status after one year.
- The Magic Breakfast scheme, which funds **breakfasts in schools** with high proportion of low income children, found the intervention was more likely to raise the attainment of pupils from less disadvantaged backgrounds.

A multi-agency approach

The London Health Inequalities Strategy (LHIS) sets out a '**health in all polices**' approach, realising health through other Mayoral strategies, such those for housing, economic development, transport, and the London Plan. The LHIS is framed around five aims and supporting objectives:

• Healthy Children: Every London child has a healthy start in life;

• Healthy Minds: All Londoners share in a city with the best mental health in the world;

• Healthy Places: All Londoners benefit from an environment and economy that promotes good mental and physical health;

• Healthy Communities: London's diverse communities are healthy and thriving;

• Healthy Living: The healthy choice is the easy choice for all Londoners.

Initiatives include: the London Healthy Workplace Award which prioritises mental health; the Good Work Standard which includes health and wellbeing; and the Skills for Londoners Innovation Fund (Marmot et al, 2020).

Health literacy

Guidance from Public Health England (Roberts, 2015) suggests the following approaches for:

Working with disadvantaged groups:

- Making further education more accessible
- Combining lifelong skills training with health
- Specific health literacy strategies for disadvantaged socioeconomic groups
- Demonstrating medical instructions
- Using trained community workers or health champions to relay health messages

Working with ethnic minority groups and communities:

- Community involvement in the design of targeted health literacy initiatives
- Voluntary and community sector involvement
- Community health workers and link workers

Roberts et al suggest that improvements in health literacy can:

- build **resilience** and improve **confidence and self-esteem**
- reduce **disease severity** and empower people to effectively **manage long-term conditions**
- increase health **knowledge** and improve **adherence**
- promote healthy **lifestyle** changes and improve **mental health**
- improve **engagement and involvement** in health

Characteristics of effective approaches include:

- **early intervention** approach to health literacy
- **integration** of health literacy promotion into other local policy and strategy
- clear and accessible **information services**
- strengthening **public–professional communications**
- invest, develop, evaluate and share **good practice** in relation to health literacy.

Coventry: a Marmot City

In 2013, Coventry City Council adopted the title of Marmot City and sought to apply local powers of the Council and partner organisations to pursuing the Marmot policy objectives (Munro, 2020).

Lessons include:

- Alignment of **priorities**
- **Embedding of principle**s such as proportionate universalism
- **Senior support** linked to accountability mechanisms
- **Outcome-focused** task and finish groups
- **Asset-based approach** to developing a strategy and shared narrative to engage people
- The need for **qualitative data** in addition to quantitative data to understand different perspectives

"Regarding population health outcomes, given the short time-scale and the complexity of the system the approach operates in, it is not possible to attribute health trends directly to being a Marmot City. Nevertheless, on several measures Coventry is performing well relative to national trends and comparable towns and cities. Inequality in female life expectancy at birth was similar in 2016-18 (8.3 year difference in life expectancy between the most and least deprived deciles) as in 2010-12 (8.4 years), defying a national trend of widening inequality, from 6.8 to 7.5 years, over this period. A similar pattern is true of inequality in male life expectancy, which reduced by 0.5 years from an 11.2 to a 10.7 year gap in life expectancy, over a period in which inequality widened by 0.4 years nationally. One composite measure of change is the Index of Multiple Deprivation, a relative measure which ranks every neighbourhood in the country by indicators of deprivation. Between 2015 and 2019 the number of Coventry neighbourhoods that are among the 10% most deprived in England reduced from 18.5% to 14.4%."

Impacts of COVID-19

Impacts of COVID-19 on inequalities and social determinants

A recent review (Nicola et al, 2020) captures emerging socioeconomic impacts, including:

- Concerns of increased **domestic violence** citing figures from Refuge which reported a 25% increase in calls made to its helpline since lockdown measures were announced [110].
- **Foodbanks** were impacted by the **panic-buying and food stockpiling** during the early stages of lockdown, which resulted in reduced donations. Alongside concerns that more vulnerable people who cannot afford to stockpile and may therefore be short of food.
- Increased **job insecurity** – redundancy and temporary, unpaid leave of absence, affecting ability to pay rent, mortgages and various household expenditures.

A briefing from the Resolution Foundation (Gustaffson and McCurdy, 2020) highlights the disproportionate impact in different sectors of the workforce:

- **Under 25s** are twice as likely to work in shutdown sectors than the rest of the workforce. On top of this, they are far less likely to be able to work from home, with only 22% of 16-24-year-olds likely to be working from home, compared to 39% of 35-44-year-olds.
- 36% of **women** face the biggest health risks in this crisis due to being key workers, compared to just 18% of men. Key workers are disproportionately likely to be female – 65% of **key workers** are female compared to 47% of the whole working population
- **Employees in shutdown sectors** are over six times as likely to be in the bottom 10% of earners as those likely to be working from home. In the same vein, key workers putting their health on the line are over three times as likely as those working from home to be in the bottom 10% of earners.

Impacts of COVID-19 on inequalities and social determinants

"Quantitatively, Janke et al. estimate that **a 1% fall in employment leads to a 2% increase in the prevalence of chronic illness**. To put this in context, if employment were to fall by the same amount as it fell in the 12 months after the 2008 crisis, around **900,000 more people of working age would be predicted to suffer from a chronic health condition**. Only about half this effect will be immediate: the **full effect will not be felt for two years**. The shock to employment from the coronavirus pandemic is likely to be much larger than this and so we may expect a larger rise in poor health. The Janke et al. analysis looks at the prevalence of long-standing health conditions but does not examine the intensity or the duration of the condition within an individual's life course. It is quite possible that health status, outcomes and levels of functioning may well continue to deteriorate over the longer run even once the prevalence of chronic long-standing conditions has plateaued."
(Banks et al, 2020)

Analysis from the Institute for Fiscal Studies (Banks et al, 2020) applies learning from other recessions to the current pandemic, suggesting:

- Those most likely to suffer the biggest economic losses are the more vulnerable in society and therefore **less resilient to economic shock**s e.g. people with lower incomes are less likely to be able to work from home or have savings to dip into.
- Groups of particular concern are **families with young children or where mothers are pregnant, and low-income or low-socio-economic-status individuals** of all ages where health vulnerabilities and mental health problems are already prevalent.
- Estimates drawn from Janke et al (2020) suggest that if the economic downturn were similar to that after the 2008 financial crisis, the **number of people of working age suffering from poor mental health would rise by half a million.**
- Impacts will be felt disproportionately with the those most likely to be harder hit to be the **most deprived and have older populations and older industrial structures**.

Impacts of COVID-19 on inequalities and social determinants

Analysis from the Centre for Progressive Policy (Alldritt et al, 2020) found:

- 76% of local authorities will not recover their **expected level of output** based on the pre-crisis trend after five years.
- Output in the twenty most vulnerable places (places at particular risk of a prolonged economic recovery) will be an average of **18% below the expected level based on the pre-crisis trend after five years.**
- **Average earnings** in the twenty poorest local authorities will fall from £18,600 per annum to £17,300 in real terms in the three years after lockdown.
- Across all local authorities, **earnings will fall** by an average of £1,600 in real terms over the same period.
- Parts of the **Midlands** face the **largest initial impacts** from Covid-19 and the associated economic shutdowns.

A review by Douglas et al (2020) suggests the following groups may be particularly vulnerable from the impacts of the COVID-19 pandemic:

Box 2: Groups at particular risk from responses to covid-19

- Older people—highest direct risk of severe covid-19, more likely to live alone, less likely to use online communications, at risk of social isolation
- Young people—affected by disrupted education at critical time; in longer term most at risk of poor employment and associated health outcomes in economic downturn
- Women—more likely to be carers, likely to lose income if need to provide childcare during school closures, potential for increase in family violence for some
- People of East Asian ethnicity—may be at increased risk of discrimination and harassment because the pandemic is associated with China
- People with mental health problems—may be at greater risk from social isolation
- People who use substances or in recovery—risk of relapse or withdrawal
- People with a disability—affected by disrupted support services
- People with reduced communication abilities (eg, learning disabilities, limited literacy or English language ability)—may not receive key governmental communications
- Homeless people—may be unable to self-isolate or affected by disrupted support services
- People in criminal justice system—difficulty of isolation in prison setting, loss of contact with family
- Undocumented migrants—may have no access to or be reluctant to engage with health services
- Workers on precarious contracts or self-employed—high risk of adverse effects from loss of work and no income
- People on low income—effects will be particularly severe as they already have poorer health and are more likely to be in insecure work without financial reserves
- People in institutions (care homes, special needs facilities, prisons, migrant detention centres, cruise liners)—as these institutions may act as amplifiers

Impacts of COVID-19 on inequalities and social determinants

Analysis from the Health Foundation (Bibby et al, 2020) reports on disproportionate impacts, including:

- Even when accounting for age and geography, there have been more deaths per capita in all **ethnic minority groups** (other than white Irish) than among white British people.
- Less than one in ten of the lower half of earners say they have the **option to work from home** during the lockdown, compared with half of the highest earners.
- The Trussell Trust reported a 122% rise in **emergency food parcels given to children** from food banks in their network during the second half of March 2020, compared to the same period in 2019.
- As the average renter spends a third of their **income on housing** – compared with 17% of homeowners – they are likely to find themselves struggling to meet payments, increasing their risk of arrears and eviction.
- **School closures** are likely to disadvantage children with fewer opportunities for home learning which could have consequences for their future chances of living healthier lives.

The authors recommend a **new social compact** which addresses:

- the role of the state in providing social protection
- public spending on prevention,
- quality of jobs
- quality, security and affordability of housing
- systemic barriers facing black, Asian and minority ethnic groups
- sustained support of the voluntary and community sector
- economic development to create the widespread conditions that enable people to live healthier lives

Syndemic of COVID-19, inequalities in chronic disease and social determinants of health

A recent essay (Bambra et al, 2020) highlights the "backdrop of social and economic inequalities in existing non-communicable diseases (NCDs) as well as inequalities in the social determinants of health". The authors highlight inequalities in relation to:

- Working conditions e.g. hazards, long hours, shiftwork, low wages
- Unemployment and job insecurity
- Access to essential goods and services
- Housing
- Access to healthcare.

Lower-paid workers (where **BAME groups** are disproportionately represented) are much more likely to be designated as key workers and so potentially at greater **risk of exposure** to the virus.

The **impacts of lockdown measures** are also disproportionate (e.g. job and income loss; overcrowding, urbanity, access to green space; reduced access to healthcare services; and inequalities in health impacts such as mental health and domestic violence.

"The prevalence and severity of the COVID-19 pandemic is magnified because of the pre-existing epidemics of chronic disease—which are themselves socially patterned and associated with the social determinants of health.
Minority ethnic groups, people living in areas of higher socio-economic deprivation, those in poverty and other marginalised groups (such as homeless people, prisoners and street-based sex workers) generally have a greater number of coexisting NCDs, which are more severe and experienced at a younger age. "

Further information on impacts of COVID-19

The Strategy Unit is preparing an evidence map on inequalities and COVID-19 which will be published during August.

There are also a number of studies underway which may provide useful findings in the future. A list of ongoing projects is available at https://esrc.ukri.org/news-events-and-publications/news/news-items/new-covid-19-research/.

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Appendix - Methodology

Scoping the review

Geography	UK and comparable health systems
Settings	All care settings – secondary, primary, community, independent
Language/s	English language only.
Dates	2008 onwards to ensure literature relating to the 2008 financial crisis is included.

Search sources and locations

Bibliographic databases:

- Medline
- Google Scholar

Aggregators and search engines:

- NHS Evidence

Grey literature:

Key public sector bodies including Public Health England, third sector organisations including the Institute for Fiscal Studies