in these determinants. The London Congestion Charge is applied across central London only, but it has reduced the gradient in air pollution proportionately across the social gradient, with increasing impact in the more deprived areas – Figure 4.8.

**Improving the food environment in local areas across the social gradient**

Dietary change can also play a key role not only in mitigating climate change and adaptation strategies, but also in promoting health by reducing the consumption of saturated fat from meat and dairy sources. Food preparation and production contributes around 19 per cent of the UK’s greenhouse gas emissions; half of these emissions are attributable to the agricultural stage.

Food systems have the potential to provide direct health benefits through the nutritional quality of the foods they supply. Improving the food environment involves addressing issues concerning the accessibility of affordable and nutritious food that is sustainably produced, processed and delivered. Internationally, studies show that among low-income groups price is the greatest motivating factor in food choice. In the US, price reductions have seen positive increases in the sales of low-fat foods and fruit and vegetables. The era of cheap food may be approaching its end, but consumer expectations are still of low prices, which fail to include the full environmental costs.

There are studies that show association between proximity, or lack of, to healthy food, and health outcomes such as obesity or malnutrition, but these studies should be approached with caution. They are most often observational and so do not show causality between inadequate access and health outcomes. One study in the UK on the greater access to unhealthy food has shown this may disproportionately affect those in more deprived areas. Data from the US shows more substantial links between schools and proximity to fast food outlets, as well as proximity to fast food outlets and obesity but the food environment in the US is very different to the UK’s.

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**Case Study Working in partnership to reduce fuel poverty**

The UK Public Health Association (UKPHA) brings together individuals and organisations from all sectors who share a common commitment to promoting the public’s health and it is leading the delivery of an innovative and integrated fuel poverty programme. Starting with understanding the current evidence, engaging with key partners then implementing a pilot, the project is a good example of the delivery of integrated and evidence-based interventions to reduce health inequalities.

The programme originates from the UKPHA’s Health Housing and Fuel Poverty Forum, funded by DEfRA. The forum, made up national figures from the health, housing and energy sectors, and practitioners from across England, developed the ‘Central Clearing House’ model. Their research concluded that a model of local area partnerships that linked health, housing and fuel poverty services was the most effective approach for directing services to the vulnerable. The CCH model identified the key systems and processes necessary to access the vulnerable fuel poor, identify high risk groups, streamline referral and delivery systems and implement monitoring and evaluation processes.

The CCH model was first piloted in Manchester, with the implementation of the Affordable Warmth Access Referral Mechanism (AWARM). Funded by the Department of Health, the pilot was a partnership with Salford City Council and Primary Care Trust. Manchester Business School is evaluating the programme for the mismatch between theory and practice and an assessment of what ‘fit for purpose’ should look like.

Greater Manchester invested approximately £100,000 each year into AWARM. Since April 2008 AWARM activity resulted in over £600,000 of investment and majority of cases are still open so many households will receive further investment. AWARM resulted in a dramatic increase in referrals from across the social and care sectors, but the number of referrals from health professionals (mainly GPs) remains low. In 12 months the programme trained 1,359 professionals, a third in health, with the remainder in social services, voluntary/community services, local government and housing.

The lessons learned from the pilot include:

- There are numerous opportunities to share data between local authorities, GPs and PCTs to improve how referrals are targeted
- A pop-up system on GP patient electronic records would help to immediately direct referral to a one-stop-shop
- Involving energy companies as active project partners can help identify novel ways to target vulnerable individuals and neighbourhoods.

The funding received ends in 2010, yet the project is improving local delivery systems, increasing the numbers receiving funding to reduce fuel poverty. Like many other ill health prevention projects, funding only invests in a pilot, regardless of the outcomes. In this case, this means a project showing successful short-term outcomes may not be rolled out.

For more information see www.ukpha.org.uk/fuel-poverty.aspx
Availability of healthy food, and in particular fresh produce, is often worse in deprived areas due to the mix of shops that tend to locate in these neighbourhoods. A study of the location of McDonald’s outlets in England and Scotland showed per capita outlet provision was four times higher in the most deprived census output areas than in the least deprived areas. Low-income groups are more likely to consume fat spreads, non-diet soft drinks, meat dishes, pizzas, processed meats, whole milk and table sugar than the better-off.

The creation of food deserts is likely to be a by-product of a complex interaction between local planning, regulatory and economic factors and the national location policies of large supermarket companies. In a controlled ‘before/after’ study following the opening of a new supermarket in Scotland, there were no differences between the control and experimental groups: both increased their daily intake of fruit and vegetable portions. However, there is still a suggestion that residents of deprived areas could benefit from policies aimed at low-mobility groups, increasing their access to better shopping facilities and healthier food alternatives.

Improving energy efficiency of housing across the social gradient

The existing housing stock emits 13 per cent of our carbon dioxide and as such, there is a compelling case for improving the environmental standards of housing across all sectors. Poor housing conditions and design have substantial impacts on health inequalities. It is estimated that reducing household energy emissions but examining the effects of fabric, ventilation, fuel switching, and behavioural changes, could lead, in one year, to 850 fewer disability-adjusted life-years (DALYs – a method of estimating the negative lifetime impact of premature mortality and disability) and a saving of 0.6 megatonnes of CO₂ per million population. The annual cost to the NHS of both cold homes and falls is estimated to be over £1 billion. The ageing housing stock requires consistent reinvestment, particularly to reduce the carbon emissions from older homes.

Living in cold conditions is a health risk. A household is in fuel poverty if it needs to spend more than 10 per cent of its income on fuel to sustain satisfactory heating. In 2006, 11.5 per cent of households in England were fuel poor, either spending more than this 10 per cent or under-consuming energy to save money; over half of these households were single persons. The Government set statutory targets to eradicate fuel poverty among vulnerable households in England by 2010 and all households in England by 2016 as far as is reasonably practicable. It is estimated that these targets will not be met and the most recent figures state that 2.8 million households in England are in fuel poverty. The risks of fuel poverty are higher in rural areas – in 2006, 21 per cent in rural areas were in fuel poverty compared with 11 per cent in suburban and 10 per cent in urban areas.

The risk of fuel poverty rises sharply as household income increases. In the poorest fifth of households, 29 per cent were in fuel poverty in 2009, compared with 5 per cent in the richest fifth. This pattern is evident across all income quintiles.

<table>
<thead>
<tr>
<th>Household income quintiles</th>
<th>Percent of households in fuel poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest fifth</td>
<td>30</td>
</tr>
<tr>
<td>2nd</td>
<td>6</td>
</tr>
<tr>
<td>Middle fifth</td>
<td>20</td>
</tr>
<tr>
<td>4th</td>
<td>5</td>
</tr>
<tr>
<td>Richest fifth</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: English House Conditions Survey, Department of Communities and Local Government

Figure 4.9 The risk of fuel poverty according to household income, 2009
falls. Very few households with above-average incomes are in fuel poverty – see Figure 4.9.

Other factors besides household income affect whether a household is in fuel poverty or not, such as housing costs and type of ownership. As a proportion of the total number of households for a given tenure, for example private rented, owner occupier or social housing, households living in private rented accommodation have higher likelihood of living in fuel poverty – 16 per cent of which were in fuel poverty compared with 11 per cent in other tenures. However, more of the fuel poor live in owner-occupied properties, with over two thirds of fuel poor household living in that sector.

The government programme Warm Front, which provides a package of insulation and heating improvements to qualifying households, has been shown to have a positive impact on mental health, alleviating respiratory problems in children and reducing deaths among older people. Despite this policy and others such as the Winter Fuel Payment, the number of fuel poor households in England dramatically increased between 2004 and 2008. The cold winter of 2008/9 saw the highest number of extra deaths in England and Wales since 1999/2000, with 36,700 excess deaths. Much of the increase in fuel poverty in 2008/9 was due to the increased costs of energy and it is estimated that in the long term, energy costs will increase.

Improvements in housing conditions have been shown to have a number of positive impacts on health, including lower rates of mortality, improved mental health and lower rates of contact with GPs. Significant improvements in health-related quality of life were found in a randomised controlled trial of home insulation, which concluded that targeting home improvements at low-income households significantly improved social functioning and both physical and emotional well-being (including respiratory symptoms). Adequate heating systems improve asthma symptoms and reduce the number of days off school.

Following the introduction of the Housing Health and Safety Rating System by the Department for Communities and Local Government (CLG) a number of the initiatives addressing the problems of cold homes and the impacts of housing on health. Many of the difficulties in addressing the issue of cold homes is that the effects of the problem are the responsibility of one government department, the Department of Health, but the responsibility for solutions lies with the CLG and with the Department of Energy and Climate Change (DECC).

The 2004 Housing Act gave local authorities the powers to tackle poor housing, setting out statutory minimum standards. The Housing Health and Safety Rating System evaluates the potential risks to health and safety from any deficiencies identified in dwellings. The introduction of the Housing Health and Safety Rating System, together with other developments in calculating the cost of the impact of poor housing on health, has led to increased activity between local housing authorities and health partners in reducing health inequalities. This work is at a relatively early stage but it has the potential to help reduce the numbers of people in fuel poverty, to help maintain independence and lead to improvements in health and well-being.

Health inequalities also relate to the shortage of new homes. It is estimated that three million new homes are needed by 2020 to meet the rate of new household formation. Many are waiting for new homes. Close to two million are on council waiting lists, with 500,000 in overcrowded conditions and 70,000 in temporary accommodation.

The Decent Homes programme sought to improve the quality of homes and by 2010, 95 per cent of social housing will reach the Decent Homes Standard. The programme had invested over £40 billion by 2010 and work has been completed on 3.6 million social homes, with improvements for 8 million people in total, including 2.5 million children. Continued investment is needed to maintain this standard; housing associations will need funding to continue to invest in the ageing housing stock. The impact of this investment on health needs to be better understood; it is important that these policies and investments are assessed for their impact on health inequalities.

**Summary**

— There are co-benefits to addressing both health inequalities and climate change.
— The NHS has implemented some strategies to reduce carbon emissions and improve environmental sustainability but can go further.
— Strategies are needed to enable access to good quality, active transport across the social gradient.
— Good quality green and open spaces improve physical and mental health.
— Green and open spaces have more of an impact if they are close to where people live.
— Fuel poverty is a significant problem and likely to grow as the cost of fuel increases.
— Investments to improve housing need to be sustained.

### E.2.2  Integrate planning, transport, housing, environmental and health policies to address the social determinants of health

**Recommendation:** Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality.

An important step in tackling the social determinants of health at a local level would be greater integration of health, planning, transport, environment and housing departments and personnel.

At present, the planning process at local and national levels is not systematically concerned with impact on health and health equity. Currently, Policy Planning Statement (PPS) 17 deals with health issues, ‘Planning for open space, sport and recreation’. However, the lack of attention paid to
health and health inequalities in the planning process can lead to unintended and negative consequences. A policy planning statement on health would help incorporate health equity into planners’ roles.\(^{462}\)

The Healthy Urban Development Unit and CABE demonstrate in numerous reports how good planning can have a positive impact on public health and that designers can influence people’s well-being and design neighbourhoods in a manner that promotes health and well-being.\(^{463}\) A new Planning Policy Statement on health could ensure that new developments are assessed for their impact on health inequalities, for example limiting the number of fast food outlets in a Super Output Area. This tool could help to provide a lever for local authorities to change the way neighbourhoods are designed.

Existing tools such as the Joint Strategic Needs Assessments are another lever to facilitate integrated approaches at a local level. However, as CABE reports, ‘producing needs analysis data does not in itself lead to change’.\(^{464}\) Integrated working, such as making PCTs statutory partners in local planning decisions, should be decided at local levels.

Training local authority managers and officers in planning, housing, environment and transport in health equity issues could improve commitments to local development frameworks.\(^{465}\) Related professional bodies can make health equity mandatory in professional development.

Equally, local planning should ensure services are easier to access and more joined up locally. The design of neighbourhoods can have an impact on community participation – good neighbourhood design can avoid putting up barriers to participation, and actively encourage it, for example through ensuring accessible transport, well-located services and amenities, and the provision of facilities and activities which encourage integration.

### Case Study: Improving Private Rented Housing in Liverpool

Liverpool City Council’s Healthy Homes Programme (HHP) seeks to prevent premature death and ill health caused by poor housing conditions and accidents in the home. It is aimed at the rented sector and seeks to help the most vulnerable residents in Liverpool. Based on national estimates, poor housing conditions are a significant contributor in up to 500 deaths and around 5,000 illnesses needing medical attention in Liverpool each year. The city has one of the highest rates of excess winter deaths in the UK; between 2004 and 2007, there were 242 excess winter deaths per year.

Liverpool PCT commissioned the City Council to assist in the reduction of health inequalities and improve morbidity and mortality statistics through the HHP. The HHP proactively targets and surveys a large number of the worst properties that house the most vulnerable occupants. In tackling sub-standard housing conditions and knitting together the wide range of health-related services the city has to offer, the hardest to reach and most vulnerable residents are actively engaged and encouraged to take advantage of available health services from a single point of contact. This partnership confronts head-on health inequalities in a city that has some of the worst levels of deprivation and health disparity in the country.

The programme will identify approximately 15,000 properties for an initial survey, and prioritise 2,750 for full health and safety inspection to develop a personalised home improvement plan. Following the inspections of the properties, the necessary improvements are secured by the team’s Environmental Health Officers through advice and enforcement. This programme is delivered initially over three years and is controlling the most significant and life threatening hazards in these homes, including: poor heating and insulation; bad internal arrangements (to prevent accidents); dampness and mould (combating respiratory illness).

In addition to inspecting housing conditions, the health and well-being needs of all occupants are investigated and advice on accident prevention and health promotion provided. Referrals to relevant agencies are also made where specific health and well-being problems are identified.

The programme works in partnership with a number of related agencies such as Merseyside Fire and Rescue Service and initiatives such as energy efficiency and making neighbourhoods cleaner and healthier. HHP also works with primary care by increasing awareness of the programme in neighbourhood General Practices and creates referral systems for clinicians. Health professionals can then actively address the causes of some respiratory complaints and other chronic diseases.

Advice and education on health promotion and home accident prevention are also integral to the programme. Vulnerable households such as those housing black and minority ethnic groups, the elderly and young are being specifically targeted.

The programme is designed to:
- Prevent up to 100 premature deaths when fully implemented
- Reduce the number of GP consultations and hospital admissions by an estimated 1000 cases
- Improve clinical understanding of poor housing on local health via communication with GPs and other clinical services
- Reduce reliance on secondary and tertiary treatment
- Increase community capacity to support housing improvements.

For more information see www.liverpool.gov.uk/healthyhomes
Summary

— Integrated planning, transport, housing, environmental and health systems are needed.
— Training in health for planning, transport, housing and environmental professionals should be implemented.
— A Policy Planning Statement on health is needed.

E.2.3 Create and develop communities

**Recommendation:** Support locally developed and evidence-based community regeneration programmes that:

— Remove barriers to community participation and action
— Reduce social isolation.

Community or social capital is shaped both by the ability of communities to define and organise themselves, and by the extent to which national and local organisations seek to involve and engage with communities. It is comprised of different factors in different communities, and can include community networks, civic engagement, a sense of belonging and equality, cooperation with others and trust in the community. Community capital needs to be built at a local level to ensure that policies are drawn on and owned by those most affected and are shaped by their experiences.

Communities with less community capital differ from stronger communities in many ways. For example, there is less volunteering/unpaid work in neighbourhoods that are perceived to be less safe, and less socialising and less trust in others. In the last decade, the level of volunteering/unpaid work has remained fairly constant. According to the Joseph Rowntree Foundation, ‘[b]etween 35 per cent and 40 per cent engaged in some form of civic participation, around 20 per cent in civic consultation and 10 per cent in civic activism. Around 35 per cent volunteered informally, and 25 per cent formally over the period.’

Evidence for causal associations between social capital and health is improving. In many communities facing multiple deprivation, stress, isolation and depression are all too common. Residents of busy streets have less than one quarter the number of local friends than those living on similar streets with little traffic. The most powerful sources of stress are low status and lacking social networks, particularly for parents with young children. Low levels of social integration, and loneliness, significantly increase mortality. Several longitudinal studies have shown that social networks and social participation appear to act as a protective factor against dementia or cognitive decline over the age of 65 and social networks are consistently and positively associated with reduced morbidity and mortality. There is strong evidence that social relationships can also reduce the risk of depression. People with stronger networks are

— **Figure 4.10** Percentage of those lacking social support, by deprivation of residential area, 2005

Source: Health Survey for England
healthier and happier. Making resources available to address the association between poor health and poor social networks and break the cycle of deprivation can also decrease costs of health care.474

Remove barriers to community participation and action
Addressing the psychosocial effects of neighbourhood deprivation is a difficult task as identifying methods to improve community capital can be difficult. Those living in deprived areas often find their communities lack social support (Figure 4.10) and, according to the Joseph Rowntree Foundation, ‘people in more deprived areas [are] more likely than others to think that certain issues [represent] a serious problem in their area. For example, over half of people in the most deprived areas [feel] that drug use or dealing, litter and vandalism [are] serious problems where they [live]. This compare[s] to between one-quarter and one-third in other areas.’476

In the UK, neighbourhood regeneration programmes have demonstrated improvements in average employment rates, educational achievements, household income and housing quality, all of which may contribute to a reduction in inequalities in health, but they can also increase housing costs, rendering residents poorer, as regeneration displaces the original residents.477

Numerous policies across government departments have sought to improve community capital and to tackle concentrated deprivation in deprived neighbourhood, such as Communities for Health (Department of Health) and the National Strategy for Neighbourhood Renewal (CLG). The latter was underpinned by investment in area-based regeneration and community renewal, primarily through the Neighbourhood Renewal Fund (NRF – refocused since 2008/9 on employment as the ‘Working Neighbourhoods Fund’), but also through the New Deal for Communities (NDC) and the Neighbourhood Management Pathfinders (NMP) programmes.

Evaluation evidence from across these programmes identified some positive trends – for example, the proportion of young people getting good GCSEs and residents’ satisfaction with local services, such as police and street cleaning. A review of the NDC found more than half of residents said the area improved as a place to live. The feeling of being part of a local community increased from 35 per cent in 2002 to 42 per cent in 2006, still below the national average at 53 per cent, but nonetheless showing an increase in deprived communities, where improvements are more difficult to achieve. Self-reported health rose slightly from 77 per cent feeling that their health was good or fairly good in 2002 to 80 per cent in 2006 (still below the national average at 87 per cent).

Overall, despite these efforts, the proportion of people who do not feel they could affect decisions locally has not changed since the start of the decade and in the last 20 years a consistent number of adults, around two-fifths, have felt that their neighbourhood was not the type of area where people would help each other.479 Other evaluations have identified that a failure to commit to mainstreaming and a lack of ability to think strategically about how core services could work better in regeneration areas meant that progress was limited.480 While the NDC programme highlighted some real challenges on engaging and developing communities, it did provide long-term funding, which alleviates funding stresses from local communities who often survive on year-to-year funding programmes.

Engagement of residents tends to have been most successful at the neighbourhood level and where there is engagement in individual projects and initiatives rather than at strategic or general consultative level. The National Strategy for Neighbourhood Renewal has had most success in influencing mainstream services to adopt a greater focus on deprived neighbourhoods where complemented by existing national policies and targets.

The experience of these programmes offers some important lessons for the future and what has and has not been most effective in supporting deprived neighbourhoods. For example:

— A need to focus more on underlying economic drivers of deprivation, such as the wider labour market, which will most likely operate at a higher spatial level than the neighbourhood
— A need to engage with mainstream agencies and ensure core services work better in regeneration areas

Communities need to be involved in developing and delivering their own regeneration programmes and initiatives – but that involvement needs to be real and fit for purpose (i.e. at the right spatial level and reflecting the capacity of local communities). Interventions work best with national guidance but accompanied by local freedom to develop relevant local programmes. As indicated in section E2.2, the design of neighbourhoods can also have an impact on community participation.

To achieve sustainable change it is necessary to take an integrated and appropriately sequenced approach that considers the social, economic and physical problems of an area and the interactions between them, and how best to complement the interventions of other agencies.

Reduce social isolation
Reducing social isolation, and increasing individual and community empowerment and health outcomes, is challenging but much needed as the number of one-person households increases. In 1991 26.3 per cent of households contained one person, rising to 30 per cent in 2001, but social isolation and exclusion concerns more than just those living alone. Social exclusion encompasses social, political, cultural and economic dimensions and has different impacts at different stages in a person’s life. It is the multiple disadvantages experienced by particular groups and individuals existing outside the ‘mainstream’ of society.481

Social isolation impacts on health: social networks and social participation act as protective factors against dementia or cognitive decline over the age
of 65. Individuals who are socially isolated are between two and five times more likely than those who have strong social ties to die prematurely. Social networks have a larger impact on the risk of mortality than on the risk of developing disease, that is, it is not so much that social networks stop you from getting ill, but that they help you to recover when you do get ill.

Four pathways suggest the interventions and policies that could reduce social isolation and exclusion:

1. First, identifying population needs better quality information from communities. In theory this can lead to health improvements and reduced health inequalities through an increased uptake of more effective services, particularly preventative services, and/or more effective interventions.

2. Second, improving governance and guardianship and promoting and supporting communities to participate in directing and controlling local services and/or interventions. This will help to improve the appropriateness and accessibility of services and interventions, increasing uptake and effectiveness and influence health outcomes.

3. A third way to reduce social isolation is to develop social capital by enhancing community empowerment. This helps to develop relationships of trust, reciprocity and exchange within communities, strengthening social capital.

4. Lastly, increasing control and community empowerment may result in communities acting to change their social, material and political environments.

Summary

— Understanding of the relationship between social and community capital and health is growing.
— Communities facing multiple deprivation often have high levels of stress, isolation and depression.
— Social networks and participation can improve mental health inequalities.
— Area-based initiatives have demonstrated some limited successes.
— Social isolation can lead to increased risk of premature death.
— Including communities and individuals in designing interventions to address social isolation will help improve their effectiveness.
### Time period: 2011–2015

1. Prioritise policies and interventions that reduce both health inequalities and mitigate climate change, by:
   - Increasing active travel across the social gradient
   - Improving access and quality of open and green spaces available across the social gradient
   - Improving local food environments across the social gradient
   - Improving energy efficiency of housing and reducing fuel poverty.

2. Prioritise integration of planning, transport, housing, environmental and health policies to address the social determinants of health in each locality.

3. Support locally developed and evidence-based community regeneration programmes, that:
   - Remove barriers to community participation and action
   - Emphasise a reduction in social isolation.

### Time period: 2016–2020

1. Implement policies and interventions that both reduce health inequalities and mitigate climate change, including:
   - Maintaining active travel across the social gradient
   - Maintaining access and quality of open and green spaces available across the social gradient
   - Sustained and continued upgrade of housing stock.

2. Implement greater integration of the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality.

3. Increase development of locally designed and evidence-based community regeneration programmes, by making long-term funding available for evidence-based community regeneration programmes.

### Time period: 2020 and beyond

1. Monitor policies and interventions that both reduce health inequalities and mitigate climate change for complementarity:
   - Maintain and monitor active travel across the social gradient
   - Monitor access and quality of open and green spaces available across the social gradient.

2. Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality.