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The Marmot Review: implications for Spatial Planning.

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People with higher socioeconomic position in society have a greater array of life chances and more opportunities to lead a flourishing life. They also have better health. The two are linked: the more favoured people are, socially and economically, the better their health. This link between social conditions and health is not a footnote to the 'real' concerns with health – health care and unhealthy behaviours – it should become the main focus.

Summary

1. This report is intended to inform the NICE work on evidence relating to spatial planning and health It aims to provide evidence on the relationship between aspects of spatial planning, the built environment, health and health inequalities.

2. The elements identified as having a significant impact on health, as well as relating to socio-economic status are:
- Pollution
- Green and Open Space
- Transport
- Food
- Housing
- Community Participation and Social Isolation

3. There is a social gradient in health: those living in the most deprived neighbourhoods die earlier and spend more time in ill health than those living in the least deprived neighbourhoods. Such health inequalities are determined by social inequalities, including environmental inequalities; there is a gradient in the distribution of environmental disadvantages: those living in the most deprived neighbourhood are more exposed to environmental conditions, which negatively affect health.

4. In order to reduce health inequalities, universal action is needed, but with a scale and intensity that is proportionate to the level of disadvantage – this is called *proportionate universalism*. The same principle should be applied to reduce environmental inequalities.

5. The Marmot Review recommends 3 main policy actions to tackle the problem areas highlighted above and to try to ensure that the built environment promotes health and reduces inequalities for all local populations. All actions should be applied across the social gradient.
- Prioritise policies and interventions that both reduce health inequalities and mitigate climate change by:
  - Improving active travel
  - Improving good quality open and green spaces
  - Improving the quality of food in local areas
  - Improving the energy efficiency of housing

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

- Support locally developed and evidence-based community regeneration programmes that:
  - Remove barriers to community participation and action
  - Reduce social isolation

6. There are a number of tools to assess areas' needs and to assess the potential impact of development and regeneration programmes, which are describe in this paper.

The Marmot Review findings

The Marmot Review was commissioned by the Secretary of State for Health in November 2008. The Review was to include policies and interventions that address the social determinants of health and reduce health inequalities, including identifying the evidence most relevant to underpinning future policy and action and show how this evidence could be translated into practice.

The review showed that socio-economic inequalities, including the built environment, have a clear effect on the health outcomes of the population. It confirmed that there is a social gradient in health, and related to that showed that there is a social gradient in environmental disadvantage.

The Review was published in February 2010 and proposed 6 policy objectives and related interventions aimed at reducing the gap in life expectancy between people of lower and higher socio-economic backgrounds. The 6 key policy objectives are:

- Give every child the best start in life
- Enable all children, young people and adults to maximise their capabilities and have control over their lives
- Create fair employment and good work for all
- Ensure a healthy standard of living for all
- Create and develop healthy and sustainable places and communities
- Strengthen the role and impact of ill health prevention.

Although spatial planning has an impact on many aspects of all the above, the fifth objective, which focuses on places and communities, is the one directly relevant to spatial planning. The Review identified a number of factors for which the evidence of the relationship with health was particularly strong. The evidence was reviewed by two task groups of independent experts, one task group on sustainable development and one task group on the built environment. Each task group included a former member of the global Commission on Social Determinants of Health, who provided international expertise. The task groups presented their evidence to the Review, including the strengths and shortcomings of the evidence, and made recommendations for policy and practice interventions. With respect to 'sustainable places and health, the elements identified as having a significant impact on health are listed below and the evidence also showed that these and their disadvantages or benefits were also relation to social and economic distribution.
They are:

- **Pollution**
  There is clear evidence of the adverse effects of outdoor air pollution, especially for cardio-respiratory mortality and morbidity[14-16]. Poorer communities tend to experience higher concentrations of pollution and have a higher prevalence of cardio-respiratory and other diseases. Sixty-six per cent of carcinogenic chemicals emitted into the air are released in the 10 per cent most deprived wards[17]. There is strong evidence that reductions in traffic to reduce air pollution are successful in improving health[18].

- **Green/open Space**
  Numerous studies point to the direct benefits of green space to both physical and mental health and well-being[19-22]. Green spaces have been associated with a decrease in health complaints[23] blood pressure and cholesterol, improved mental health and reduced stress levels[24;25], perceived better general health[26] and the ability to face problems[27].
  There is strong evidence that provision of green space effectively improves mental health and less strong/inconclusive evidence that it improves levels of physical activity[18].

- **Transport**
  Transport accounts for around 29 per cent of the UK's CO2 emissions[28]. The relationships between transport and health are multiple and complex, and transport also provides access to work, education, social networks and services, which can improve people's opportunities[29].

There is strong evidence that traffic interventions reduce road accidents, while there is some inconclusive evidence that they improve physical activity[18]. The impact of transport on health inequalities is greatest when looking at deaths from road traffic injuries, especially for children, as they are four times more likely to be hit by a car in the 10 per cent most deprived wards than in the least deprived wards[30]. Fatal accidents on the road are also particularly high among children of parents classified as never having worked or as long-term unemployed[31;32].

- **Food**
Low income and area deprivation are both barriers to purchasing fresh or unfamiliar foods[33], while lower income households are the harder hit by food price fluctuations. However, there is only anectodal evidence that local access to healthy foods improves diets[18], although there are indications that residents in deprived areas could benefit from interventions aimed at low-mobility groups, increasing their access to better shopping facilities[34]. Studies of proximity to healthy food do not show causality between inadequate access and health outcomes[35], and studies on greater access to unhealthy food in the UK has shown that this may disproportionately affect those in more deprived areas[34;36;37].

- **Housing**
Over the past 20 years, the poorest groups have become concentrated in social housing[38], and the association between social housing and negative outcomes applies across several domains, including health, education, self-efficacy and income[39]. A study suggested that children in bad housing are more likely to have mental health problems, such as anxiety and depression, to contract meningitis, have respiratory problems, experience long-term ill health and disability, slow physical growth and delayed cognitive development[40].
Cold housing is also a risk to health, affecting the levels of winter deaths and respiratory diseases. Evaluation of home insulation programmes concluded that targeting home improvements at low-income households significantly improved social functioning, as well as physical and emotional well-being[41-43]. Adequate heating systems improve asthma and reduce the number of days off at school[44].

- **Community Participation and Social Isolation**
Community capital differs in areas of deprivation, with less volunteering and unpaid work, less socialising and less trust in others, in the neighbourhoods that are perceived to be less safe[45]. Evidence of the association between social capital and health is significant and improving: in many communities facing multiple deprivation, stress, isolation and depression are all very common[46], and low levels of social integration, and loneliness, significantly increase mortality[47].Social participation acts as a protective factor against dementia and cognitive decline over the age of 65[48;49] and also have an impact on the risk of mortality by aiding recovery when becoming ill[50]. Furthermore, there is some evidence that increasing community empowerment may result in communities acting to change their social, material and political environments[46].

During the Review, expert task groups analysed all these factors and proposed strategies and interventions aimed at reducing the social-economic inequalities in exposure to such factors. The MRT drew on the task groups' work to develop policy recommendations aimed at addressing the problem of environmental inequalities – three recommendations were put forward:

1. Prioritise policies and interventions that both reduce health inequalities and mitigate climate change by:
   a. Improving active travel across the social gradient
   b. Improving good quality open and green spaces available across the social gradient
   c. Improving energy efficiency of housing 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.
3. Support locally developed and evidence-based community regeneration programmes that:
   a. Remove barriers to community participation and action
   b. Reduce social isolation

Implementing the Review's recommendations

This paper suggests that the Review's findings on the relationship between the built environment and health inequalities can provide a basis to assess how different groups are distributed proximally to environmental burdens and whether interventions, developments and regeneration projects are addressing the gradient in environmental disadvantage. This would highlight how different environmental burdens and benefits are experienced by migrant groups and provide a framework to evaluate interventions on the environment aimed at reducing health inequalities experienced by specific population groups.

Many interventions are planned specifically to have an impact on the gradient and are not assessed for their impact on health equity. Area-based interventions, such as the New Deal for Communities, target specific highly-deprived areas, and have shown little measureable success in terms of health outcomes, perhaps due to the timescale needed to affect such outcomes. However, such targeted interventions, even if successful, are unlikely to affect the gradient as a whole, while some universal interventions have shown impact on the gradient by reducing environmental inequalities proportionately (the effect is proportionate because the distribution of pollution is proportionately greater down the gradient) across the socio-economic gradient; such an example is the London Congestion Charge.
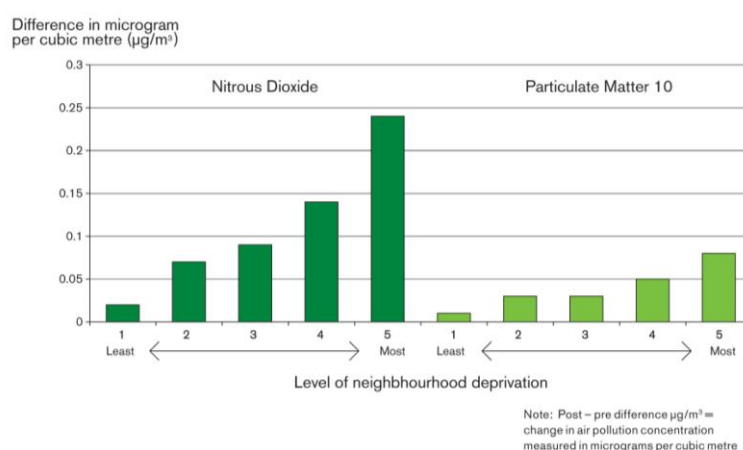

Fig. 9 Modelled changes in air pollution concentration due to London Congestion Charge, by area of London and level of socio-economic deprivation, 2003-2007. Source: Tonne et al.[72]

This graph shows that after the congestion charge was introduced, levels of pollution decreased across the social gradient: pollution levels decreased progressively more in the more deprived neighbourhoods. Considering the inequalities in pollution distribution – (disadvantaged communities suffer disproportionately higher levels of pollution compared to more advantaged communities) - the effect of these comparative decreases in pollution are likely to decrease the steepness of the social gradient in pollution distribution.

The importance of green space to good health has already been mentioned and one study has shown that in areas in England with more green spaces the gradient in deaths from circulatory disease by income deprivation is reduced – this suggests that the amount and the distribution of green space has great potential to reduce health inequalities, as shown in figure 10.
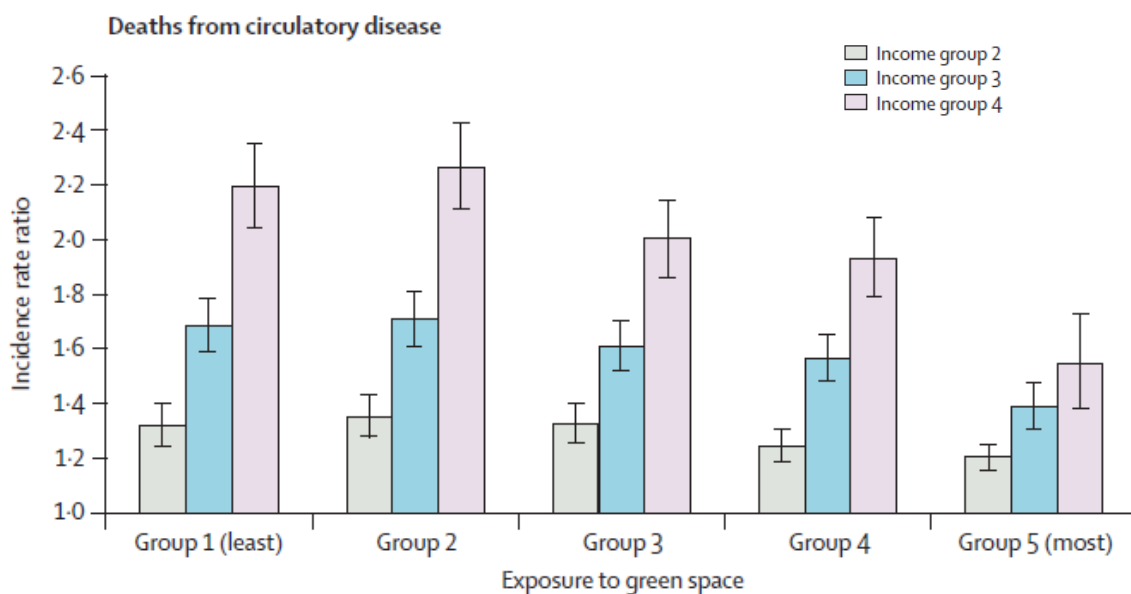
Fig. 10 Deaths from circulatory disease by income group and exposure to green space, where income group 4 is the most deprived. Source: Mitchell and Popham, 2008[73].

The Marmot Review recommends 3 main policy actions to tackle the problem areas highlighted above and to try to ensure that the built environment promotes health and reduces inequalities for all local populations.

1. **Prioritise policies and interventions that both reduce health inequalities and mitigate climate change, by:**

   a. **Improving active travel across the social gradient.**
Interventions to encourage active travel include investing in better walking and cycling routes, reducing car speed to improve road safety, and improving public transport. For example, better cycling infrastructure often leads to long-term increases in cycling, and much lower numbers of cyclists killed or seriously injured. Lower speed limits also decrease the risk of death and serious injuries. Designing local areas so that they are easy and safe to walk around, and providing many destinations within walking distance, increases their 'walkability' and consequently, activity levels. All interventions should be targeted progressively across the social gradient.

   b. **Improving good quality open and green spaces across the social gradient**
This includes providing more green space, of better quality, that is well designed, and close to people's homes. Providing more green space is affordable – CABE estimates that the budget for new road building until 2014 could instead provide 1,000 new parks (2 for each local authority in England). This would also reduce CO_2 output by approximately 74,000 tonnes. Design is also important: school playgrounds that stimulate active games are associated with a 20% long term increase in physical activity. Natural play environments at school also help reduce bullying, improve concentration and promote feelings of self-worth. In underprivileged neighbourhoods, good quality green space can increase levels of social contact and integration. Finally, the proximity of green space is essential to good health. Having green space that residents can walk to will provide clear health benefits for the local community – prevalence rates for diabetes, cancer, migraine/severe headaches and depression are lower in areas with more green space within a one kilometre radius.

   c. **Improving the quality of food in local areas across the social gradient**
Residents of deprived areas could particularly benefit from policies which aim to improve availability of healthier food options and better access to shopping facilities. Having local shops within walking distance and generally high accessibility to shops which stock healthy food is likely to improve health within these areas, especially when coupled with planning restrictions on the density of fast food outlets within deprived areas.

d. Improving the energy efficiency of housing across the social gradient.

This would go some way to decreasing the fuel poverty of households in deprived areas, although increases in income are also necessary. It also decreases energy related emissions which helps to tackle climate change and has positive health impacts.

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

Addressing health inequalities requires action across all the social determinants of health and this will require different stakeholders to work in partnership to effectively deliver health equity. Cross-government working at national and local level within planning and between different departments can be encouraged and achieved in a number of ways:

- A planning policy statement on health.

This would incorporate health equity into planning processes and locate it more centrally in the work of spatial planners. Good planning can have a positive impact on public health and designers can create neighbourhoods that fulfil this possibility.

- Better use of existing tools.

Existing tools such as Joint Strategic Needs Assessments could be used to encourage and facilitate integrated local planning procedures, as well as informing development and regeneration plans.

- Training:

There should be more information and training provided on health equity issues for local authority managers and officers in planning, housing, environment and transport. Additionally, related professional bodies could make health equity mandatory in professional development. This would improve commitments to local development frameworks and aid integrated working between health authorities and local planers.

- Local Planning:

Local planning has a huge potential to positively affect health through the design of neighbourhoods. Planners can ensure that services are joined up and easier to access. They can also encourage community participation and cohesion by providing accessible transport and well located services, and make it easier for people to pursue healthy lifestyles by promoting active travel and use of green space

3. Support locally developed and evidence-based community regeneration programmes that:
a. Remove barriers to community participation and action

Regeneration programmes should involve local communities in the development and delivery of local plans. This should happen in a way that reflects the capacity of local communities - often interventions work best where national guidance is provided and used by local communities who are free to develop their own, locally suitable programmes. Local areas should be designed in a way that facilitates and encourages community participation.

b. Reduce social isolation

There are four recommended pathways to reducing social isolation:
1. Collecting better information from communities to identify population needs.
2. Providing the support and space for communities to direct and control local interventions and services.
3. Enhance community empowerment
4. Which can, in turn, result in communities acting to positively affect their social, material and political environments.

These have relevance to spatial planning in terms of designing for the local population needs and for service accessibility, but in terms of the local physical environment the point that was made above - that the spatial design of local areas can act to prevent or promote social contact, cohesion and participation, especially for vulnerable people – is particularly relevant. It is recommended that specific groups such as the elderly and the disabled should be consulted on the design of the physical environment in order to

ensure that this does not impede opportunities for these groups to take advantage of opportunities for social contact within their neighbourhoods.

Post-development indicators

Below is a framework for assessing the health equity impact of developments and regeneration programmes.

Policy Recommendations	Process Indicators	Output Indicators	Outcome Indicators
Prioritise policies and interventions that both reduce health inequalities and mitigate climate change, by;	Greater accessibility to active models of travel in all areas. Improved road Layouts/separation of modes of travel. Street safety initiatives.	Increase in active miles travelled/people using active modes of travel. Reduction in traffic accident rates involving active travel and in street crime and disorder.	Improved fitness levels across the social gradient. Reduction in car travel.
(i) Improving active travel across the social gradient		Increased sustainable travel.	Improved fitness levels across the social gradient. Reduced levels of pollution.
(ii) Improving quality open and green spaces available across the social gradient	Reduction in walking distance to quality green space. Street and park safety initiatives.	Reduced social gradient in stress, greater levels of exercise. Reduction in crime and disorder in streets and parks.	Health benefits associated with healthy eating across the social gradient.
(iii) Improving the food environment in local areas across the social gradient	Reduction in local concentration of fast food outlets. Improved food options in local shops.	Reduction in consumption of unhealthy food across the social gradient and increases in healthy eating.	Health benefits associated with healthy eating across the social gradient.
(iv) Improving energy efficiency of housing across the social gradient	Affordability of fuel for those in poverty. Reduction of numbers in poorly insulated housing. Reduction in use of high energy alternatives (e.g transport, heating, lighting)	Reduced energy usage across the social gradient.	Fuel poverty outcomes. Carbon footprints.
Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality	Greater travel options. Reduction in car use. Increase in walking and cycling.	Reduction in stress associated with living in isolated and deprived neighbourhoods.	Reduced ill health gradients in ill health associated with social isolation and adverse impacts of travel e.g pollution and accidents.
Support locally developed and evidence-based community regeneration programmes that:			
(i) remove barriers to community participation and action	Increased opportunities for participation and community activity among local residents.	Greater participation and community activity among local residents.	Improved well-being of local residents affected by regeneration.
(ii) Reduce social isolation	Increased opportunities for participation and community activity among local residents. Integrated transport links and street safety initiatives.	Reduction in social isolation of elderly/deprived communities.	Reduced gradients in ill health associated with social isolation and area deprivation.\n\nReduce mental health problems and improve self reported health and well being.

Conclusions

The lack of an integrated strategy across policy areas serves to perpetuate and possibly increase the disadvantages documented in the areas above. While separate working in silos continues, it will be harder to address these issues and tackle inequalities in environmental disadvantage. In order to address the exposure to multiple negative environmental conditions that deprived communities face, planning will need to consistently take into account the spatial distribution of environmental disadvantages and assess how they impact on the communities that are exposed to them.

Aligned strategies that are formed through informed, co-operative, communicative work will be more likely to effectively tackle the range of disadvantages that poorer communities face. Data, tools for analysis and design guidance are available to professionals for assessing areas' needs in relation to deprivations and plan the intensity of interventions needed to effectively reduce the gradient in environmental disadvantage.

The planning policy statements summarised earlier on in the paper show this – they are not systematically concerned with the impact of planning decisions on health and health equity. The dissolution of regional spatial strategies may serve to increase this disconnection, and policies that have unintended and/or negative consequences for health may be continue to be approved.

In this context it is vital that planners, developers and design professionals are aware of the health equity impact of their work and proactively address environmental disadvantage through their practice. The main components for implementing the Marmot Review's recommendations and addressing health inequalities through spatial planning are:

- addressing the gradient in environmental disadvantage.
- establishing a benchmark for area assessment analysis which includes an equity component.
- addressing the elements of the built environment which affect health across the social gradient according to the area's needs.