



**LONDON**  
climate change  
PARTNERSHIP

## London's changing climate

In sickness and in health



March 2011

# About this document

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The London Climate Change Partnership<sup>1</sup> has produced this document as a tool to aid health and social care commissioners and providers as they begin to design and shape their services in the new delivery landscape. It draws on the evidence from a study that was commissioned by LCCP in March 2010 to understand the risks presented by climate change to the health and social care sectors in London.<sup>2</sup> LCCP has summarised in this document the key issues for consideration, and suggested solutions. It is committed to continuing to offer support and advice on this issue.

This document and the study that preceded it was the collaborative effort of the following organisations:

**Department of Health**  
**Commissioning Support for London**  
**Greater London Authority**  
**NHS London**  
**Health Protection Agency**  
**Government Office for London**  
**Environment Agency**

<sup>1</sup> The London Climate Change Partnership (LCCP) is a partnership of organisations that aims to help London prepare for the impacts of climate change. LCCP includes members from government, climate scientists, developers, finance, health, voluntary and community, environment and communication sectors.

<sup>2</sup> Catherine Max Consulting, *Health and Social Care Risk Assessment and Action Plan*, 2010.

# Foreword



**Gerry Acher**, Chair of the London Climate Change Partnership, former Non-Executive Director of NHS London and Chair of the Royal Society of Arts

We have an important choice before us now: in the face of population growth, increasing demands, diminishing resources and more extreme weather incidents, what will be our priorities? It is clear that the one thing we must not sacrifice is health. We will risk doing just that if we neglect to build considerations of the impacts of our changing climate into the design of future health and social care services. The cost of not mitigating against and adapting to climate change, in terms of impacts to health and wellbeing, are too high to ignore: they are not luxuries, but actions and processes that need to begin today.

Together we can preserve the resources we have and create a better foundation for health and social care provision now and in the future. Our changing climate will impact on the job that health and social care has to do. If we mitigate and adapt now, we will be better positioned to manage the adverse impacts and make that job easier; as well as improve people's health in the process.

March 2011

# Climate change: the background

Evidence shows that our climate is already changing. Some changes are now inevitable and more extreme changes will become unavoidable unless we drastically reduce our carbon emissions. Climate projections show that London will experience warmer, wetter winters and hotter, drier summers. As well as the gradual change in overall climate, we expect to see more frequent and intense episodes of extreme weather, meaning that we will need to consider adapting our buildings, communities and lifestyles to prepare for more frequent:

- Heatwaves
- Flooding
- Droughts

Dealing with the causes of climate change is known as 'mitigation'. This includes taking action to produce less carbon emissions: for example, wasting less energy, installing efficient ventilation and heating systems, and making behavioural changes such as walking or cycling instead of using a car.

We've already made progress in recognising and acting on the issue of climate change, but our efforts to reduce emissions, in the past, have not been enough; climate projections show that we will see some change in our climate regardless of our future actions.

Dealing with the consequences of climate change is known as 'adaptation'. This includes actions such as improving resilience to flooding, modifying our buildings so they remain cool during the hotter summers that climate change will bring, and reducing our water use to tackle drought.

Adapting to climate change is a process. It needs to be built into our normal planning and risk management procedures, whether in business, government or service design. Considering it in parallel with climate change mitigation will ensure that the balance is right and avoid making costly mistakes. An integrated approach to climate change ensures that sustainable adaptation decisions can be made at the right time to maximise the benefits and minimise costs to services and people. Proactive adaptation is much cheaper than retrospective actions and disaster recovery.



**Flooding in Richmond, London**  
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# Resilience for today and tomorrow



**Trafalgar Square, London in the 2003 heatwave**  
© Alamy

Making health and social care services that are resilient to today's extreme weather is a challenge we already face. The problems caused by the incidents of flooding and heatwave that we have experienced in the last decade have proven that we still have a way to go to achieve this. The examples of the floods in Cumbria and Cornwall in recent times lend evidence to this. We must ensure we are ready for our changing climate today and tomorrow. Successful planning – not just responding to emergency situations – will save lives and money.

## Planning ahead

By planning and designing future health and social care services with our changing climate in mind, London can ensure that it is more resilient to the risks it faces and is taking every opportunity it encounters to adapt. NHS organisations in London are starting to respond to the implications of the Government's White Paper, *Equity and excellence: Liberating the NHS*,<sup>3</sup> which sets out a vision for the future of the NHS. However, a longer term perspective needs to be developed and the climate needs to be considered as a variable when dealing with projections for health and social care services in London.

# Context for the study

The LCCP commissioned a study into the risks that the impacts of climate change pose to London's health and social care sectors, and their current level of preparedness, in recognition that they are crucial to the resilience of the city. In addition, the following reasons make this work timely:

- The changes to the commissioning of health and social services mean that there are significant opportunities to reassess and improve resilience.
- The responsibility for adapting to climate change and the ownership of climate risks in the health and social sectors is currently unclear.
- London's population is set to grow by 1.3 million over the next two decades. This will place increasing demands on already stretched health and social care services.

The study produced a risk assessment relating specifically to climate change and extreme weather. It was carried out in partnership with professionals from the health and social care sectors in London, and was the first of its kind in the UK.

The study highlighted that whilst there are examples of good adaptation practice, they need to be more widely shared, and there is a significant opportunity to do so.

The health and social care sectors in London have made great strides already in responding to the negative impacts presented by climate change. But this is mainly through mitigating climate change by reducing carbon emissions. There is much more to do in terms of adapting to the unavoidable impacts of climate change that we face.

The study also produced a set of recommendations, which were further developed and strengthened, in partnership, with London's health and social care sectors. This collaborative approach has allowed LCCP to suggest actions that are as ambitious as they need to be while still remaining achievable.

A number of areas have been identified where government, the NHS and civil society could act to make services in London more resilient to the impacts of extreme weather today and the changing climate over the longer term. The suggested actions for health and social care sectors are reflected in the final section of this document, *Increasing resilience: a quick reference guide for health and social care providers*. A full list of the recommendations can be found on the [LCCP website](#).

The Mayor of London's draft *Climate Change Adaptation Strategy* also supports the aims of this study, and aims to:

- understand the specific risks to the delivery of health and social care services;
- understand where responsibilities for adapting London's health and social sector lie;
- encourage the mainstreaming of adaptation into business planning and commissioning using the NHS World Class Commissioning framework and the proposed framework for commissioning as set out in *Equality and excellence: Liberating the NHS* and in *Liberating the NHS: Commissioning for patients*.<sup>4</sup>

<sup>4</sup> Department of Health, 2010. Web: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_117353](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117353)

# Climate change and health

The World Health Organisation defines health as **'A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'**.

Health and social care services are vital to protecting and improving the state of health and wellbeing for the individual and in society as a whole, but this is one part of the overall

picture. As illustrated in the figure below, there are many factors outside of health and social care that affect health and wellbeing. The LCCP recognises that it has a role to play in helping all of these sectors prepare for the impacts of climate change in a way that can contribute to maintaining and improving human health.

## The social determinants of health



Dahlgren and Whitehead<sup>5</sup>

Climate change will bring both direct and indirect impacts. By this we mean impacts on the:

- health and wellbeing of people,
- infrastructure and systems that are set up to care for them.

The table on the next page indicates the types of direct impacts we expect to see from climate change.

<sup>5</sup> Dahlgren, G. and Whitehead, M., Stockholm, Institute for Future Studies. *Policies and strategies to promote social equity in health*. 1991.

Health outcome	Affects of weather/climate
Heat stress	Deaths from heart- and lung-related diseases increase with hotter and colder temperatures. Heat-related illnesses (heat cramps, heat exhaustion and heat stroke) and death increase during heatwaves.
Air pollution related morbidity and mortality	Weather affects air pollution concentrations. Weather affects the distribution, seasonality and production of air-transported allergens.
Morbidity and mortality resulting from weather disasters	Floods and windstorms cause direct effects (deaths and injuries), infectious diseases, long-term mental health problems, and indirect effects (temporary limitations on access to health and social care services).
Vector-borne diseases	Higher temperatures shorten the development time of pathogens in vectors and increase the potential transmission to humans.
Water- and food-borne diseases	Risk of bacterial pathogens increases with rising temperature. Increases in drought conditions may affect water availability and water quality due to extreme low flows. Extreme rainfall can affect transport of disease organisms into water supply.
Cataracts, skin cancers and sunburn	More cloud-free days and higher temperatures may encourage potential risk of over-exposure to UV radiation.
Cold stress	Warmer winters may mean a reduction in cold-related morbidity and mortality.
Accidents and injuries	Warmer winters may also mean a reduction in accidents and injuries due to slips and falls on icy surfaces.

### London, climate change and health

London's population and culturally diverse, complex and dynamic makeup provides unique challenges and opportunities for health and social care. The intensely urban environment creates conditions for health and wellbeing that are physically and socially very different from those in other areas of the UK. For example, a large population and high density of buildings mean that access to green space is at a premium. And when communicating public health messages we face the challenge of a transient population, a high migrant population and linguistically diverse communities.

The urban landscape can intensify the impact of the climate. For example, the lack of permeable surfaces and green space can increase the risk of flooding. London also generates its own microclimate, known as the Urban Heat Island (UHI), which can result in the centre of London being up to 10°C warmer than the rural areas surrounding the city. This can aggravate the effects of hot weather. Summer heatwaves can make our

homes, workplaces and public transport uncomfortable, and can have an adverse effect on health, particularly that of vulnerable people.<sup>6</sup>

The hot temperatures in 2006 resulted in extremely high demands on London's power supply network and subsequent 'brown outs', due to the high cooling demand. Future increases in electricity demand for cooling could affect London's sustainability. For this reason, it is important to prioritise passive cooling options wherever possible and raise awareness of simple measures such as closing blinds and curtains during the day to keep rooms cool.

Like many large cities, London still suffers from air pollution, especially in high traffic areas. A recent report commissioned by the GLA estimated that in 2008, around 4,300 deaths in London were partly attributable to exposure to air pollution.<sup>7</sup> Longer, hotter summers will increase the frequency and severity of summer air pollution episodes.

<sup>6</sup> Greater London Authority, *London's Urban Heat Island*, 2006.

<sup>7</sup> Institute of Occupational Medicine, *Report on estimation of mortality impacts of particulate air pollution in London*, 2010.

### Key messages

- **Health and social care is crucial to London's resilience.**

These sectors provide both an emergency service and longer-term care, which must be protected from disruption. London's 7.8 million residents and 25 million annual visitors rely on these services continuing to run regardless of the weather.

- **The health and social care sectors are a massive estate owner and employer in London and more widely throughout the UK.**

This means that any actions taken to adapt will have a big impact on the country's resilience as a whole and the sectors' workforce. It also means that there is much to do.

- **People and communities have enormous capacity to make our systems resilient.**

Government and local health and social care providers have an important role to play, but it is not only they who need to act, or who have the power to adapt – people and communities have a part to play too. Empowering communities to increase their own resilience now will relieve pressure on services in future extreme weather events. The health and social care system is well placed to help and support communities through Local Health Watch Bodies (proposed to replace Local Involvement Networks); the proposed new local authority Health and Wellbeing Boards; patient participation groups; and community partners, as well as Big Society initiatives and the localism agenda.

- **We need to adapt to ensure a healthy and happy future for Londoners.**

The World Health Organisation defines a healthy city as one that 'is continually creating and improving the physical and social environments and expanding the community resources that enable people to mutually support each other in performing all the functions of life and in developing their maximum potential'.<sup>8</sup> Our health and social care services are excellent facilitators for this function.

- **The impacts of climate change will not be equal or fair and they may lead to new health needs.**

Climate change is expected to exacerbate existing health inequalities and measures to adapt amongst London's population are consistent with the *Mayor's Health Inequalities and Climate Change Adaptation Strategies*.

- **We have an opportunity for change.**

Health and social care provision is undergoing major organisational changes. Including climate change in future service design through the commissioning process will ensure that they are robust from the beginning, and avoid costly mistakes.

<sup>8</sup> World Health Organisation, Hancock and Duhl, 1986.

## Facts and figures

Heatwaves can kill, especially in urban areas. For example, 600 Londoners died in the 2003 August heat wave. The NHS has produced a new **Heatwave Plan for England** to help to form a response to this risk.<sup>9</sup> As well as ensuring we have an emergency response in place, preventative actions for overheating have an important role to play.

Many heat-related deaths occur in people before they come to medical attention.<sup>10</sup>

Londoners are more resilient to rising temperatures than other UK regions, but suffer more than others when temperatures exceed 24°C.<sup>11</sup>

Climate projections predict that average summer temperatures will continue to rise, such that by the middle of this century, we can expect an average summer day to be at temperatures we currently experience during heatwaves.<sup>12</sup>

London's microclimate amplifies the impact of hot weather – London is up to 10°C warmer than its surrounding areas on summer nights.

While claims that malaria may spread to the UK remain unlikely, it is likely we will face higher risk of other infections with higher temperatures.

Nearly 10 per cent of London's hospitals are at significant risk from river flooding, but the risk of surface water flooding is higher and less predictable across London; we need to be prepared.

The long-lasting health impacts of flooding, including psychological stress, are well documented and can be very severe, especially when those affected are displaced from their homes for long periods of time.<sup>12</sup>

Deaths, illnesses and injuries don't just occur from the direct climate impacts such as overheating and flooding – there are many knock on consequences. For example, on hot and sunny days:

- Air quality, particularly in urban environments, becomes worse, exacerbating all kinds of respiratory problems for vulnerable people.
- Levels of alcohol consumption are higher.<sup>14</sup>
- There is an increase in the rate of violent crime, such as assaults and domestic violence.<sup>15</sup>

<sup>9</sup> NHS, *Heatwave plan for England: protecting health and reducing harm from extreme heat and heatwaves*, 2010.

<sup>10</sup> Kovats RS, Hajat S, Wilkinson P., *Contrasting patterns of mortality and hospital admissions during hot weather and heat waves in Greater London*, UK, 2004.

<sup>11</sup> Armstrong et al, *Association of mortality with high temperatures in a temperate climate: England and Wales*, 2010.

<sup>12</sup> UK Climate Projections, 2009. Web: <http://ukcp09.defra.gov.uk/>

<sup>13</sup> Bennet 1970, Green et al. 1994, Reacher et al. 2004, Tunstall et al. 2006, Tapsell et al. 2009.

<sup>14</sup> Weather Forecasting as a Public Health Tool, Centre for Public Health, 2004. Web: <http://www.cph.org.uk/showPublication.aspx?pubid=151>

<sup>15</sup> Ibid.

# Opportunities presented by climate change adaptation

There are additional health and wellbeing benefits to many of the adaptation measures that organisations may put in place to address other direct impacts of climate change.

For example:

- Urban greening, the process of increasing and enhancing green space and vegetated surfaces across London, does not just reduce flood risk and overheating for tomorrow; it also increases wellbeing for people today. Providing green space improves mental health, promotes exercise and helps to reduce obesity.
- Proper ventilation in buildings can help to reduce the spread of illnesses whilst at the same time reducing carbon emissions and providing the cooling necessary for hotter summers.

Co-benefits for health, climate change mitigation and adaptation can also be realised by increased self-sufficiency of communities and local facilities, implementation of low-tech measures and prioritising, for example, passive cooling and water conservation.

## Implications for the new proposed commissioning framework

The Government's proposed new public health outcomes framework<sup>16</sup> and the proposed changes in commissioning<sup>17</sup> present a huge opportunity for ensuring that management of climate risks is factored into the design of health and social care services locally. *Liberating the NHS: Commissioning for patients* sets out the Government's proposed arrangements for GP commissioning and the

NHS Commissioning Board's role in supporting GP consortia and holding them to account. The framework proposes that consortia work closely with secondary care, other health and care professionals and with community partners to design joined-up services that make sense to patients and the public. This approach provides a perfect opportunity for health and social care professionals to work with patients and the public to integrate adaptation measures into the design of systems and services at a local level.

In addition, it is proposed that the NHS Commissioning Board will be responsible for entering into contracts with providers and holding them to account for meeting their contractual duties, including quality standards and patient outcomes. Consortia will have a duty to promote equalities and work in partnership with local authorities, for instance in relation to health and adult social care, early years services and public health. Against this background, the LCCP would like to see **adapting to climate change** factored in as a standard to improve health outcomes and reduce health inequalities.

<sup>16</sup> Department of Health, *Healthy Lives, Healthy People: transparency in outcomes, proposals for a public health outcomes framework*, 2010.

<sup>17</sup> Department of Health, *Liberating the NHS: Commissioning for Patients*, 2010; *Healthy lives, healthy people: consultation on the funding and commissioning routes for public health*, 2010.

# Conclusion

There is a strong need for more concerted action between those directly responsible for London's health and social care and those with expertise and interest in climate change adaptation. In particular, there is a need to ensure that the most vulnerable people are not disproportionately affected by the impacts of climate change, exacerbating existing health inequalities in London.

Partnership working across sectors is key to delivering against the set of suggested actions presented below. The report suggests complementary roles for government and development bodies, on the one hand, and service delivery and regulatory bodies, on the other, to encourage and enforce improved climate adaptation practice. The organisations that were involved in this study worked with us to identify partners to take forward the recommendations.

In addition to the set of recommendations produced, the following cross-cutting themes and approaches were suggested:

**Collaboration** – Encouraging collaboration in terms of joint working and sharing assets can build resilience. For example, professionals working with the local community to identify community locations that can provide suitably serviced refuges when required.

**Learning from experience** – Through sharing best practice and open discussion of barriers, organisations can maximise efficiency. The LCCP has a role to play in facilitating the sharing of information on other cities' good practice, responses to recent extreme weather events, and policy responses to historical climate issues.

**Co-benefits** – Many adaptive measures, such as urban greening, have co-benefits for climate change mitigation and health, as well as wider advantages.

**Realism about costs** – While shrinking resources can make investment in long-term measures seem unfeasible, many adaptation measures are logistical and can be woven in to 'business as usual'. Climate change adaptation can prevent much higher unforeseen costs in future.



A terrace garden eco-roof in a new office and shopping development in the heart of London  
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# Increasing resilience: a quick reference guide for health and social care providers

A set of suggested actions have been worked out for making London's health and social care services as resilient as they need to be today and in the future. They have been developed in conjunction with health and social care providers.

The LCCP will continue to offer our support and help to achieve these aims.

Achieving a health and social care system for London that is resilient to the negative impacts of climate change requires action and co-operation of many different organisations and groups. Below we have selected, from the study, those recommendations that are specific to health and social care providers. For a full list of the recommendations that were produced by the study, please visit the [London Climate Change Partnership website](#).

## Services and systems

- Consider making climate change adaptation a routine element of risk management** across all aspects of health and social care – including, but not only in, emergency planning.
- Promote 'working together' to identify and address areas** where climate change mitigation measures might come at a cost to adaptation measures – ensuring complementary or mutually supporting strategies.
- Consider working with the LCCP to develop a package of service-specific and locally relevant communication tools** on climate change adaptation and practical actions, including case studies.
- Consider working with the LCCP to strengthen health surveillance capabilities** with respect to climate risks, offering real time information and advice to professionals, patients and the public.
- Think about developing guidance for local delivery on building climate impacts** into the Joint Strategic Needs Assessment, strategies and delivery at a Borough level, through a whole system approach. Assess whether this would best be delivered as combined guidance on climate change (including mitigation) to maximise efficiency.
- Consider building climate impacts into the healthcare planning and care pathways** and gather good practice to inform this and disseminate to a wider audience. The LCCP would provide support with this.



Crowds in London  
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- Consider developing service contract specifications in commissioning** which take the impacts of climate change into account.
- Think about options for requiring adaptation measures in the context of the CQUIN** (Commissioning for Quality and Innovation) element of service contracts; possibly as a pilot.

### Patients and the public

- Promote working with Local Resilience Fora** (a requirement of the Civil Contingencies Act 2004 which allows responders access to a forum to consult, collaborate and disclose information with each other to facilitate planning and response to emergencies, and produce a Community Risk Register), to help to build community capacity for dealing with extreme weather events. This could be done on the back of the localism agenda.
- Consider the opportunities presented by the 2012 Olympic Games** to further develop health surveillance capabilities with regard to the large-scale movement of people from many destinations.
- Think about using the opportunities presented by the 2012 Games to learn international lessons** and enhance responsiveness to climate-related impacts. The LCCP would offer support in disseminating this learning.
- Think about supporting and encouraging local organisations to work with the civil society sector** to raise awareness of climate risks and promote personal adaptation strategies, particularly among marginalised communities. Where possible, this should build on existing programmes and voluntary sector initiatives such as the Big Response.<sup>18</sup>
- Consider programmes for intelligent and assertive outreach to marginalised groups** who are especially vulnerable to flood and heatwave, including people who are newly settled in London. This could build on the localism agenda and Big Society initiatives.
- Encourage plans for commissioning strategies, such as Better Healthcare Closer to Home**, to have a role in enhancing community resilience. For example, in identifying places of refuge and key local vulnerabilities during major weather events.

<sup>18</sup> National Council for Voluntary Organisations, The Big Response, 2010. Web: <http://www.ncvo-vol.org.uk/thebigresponse>

### Workforce

- Enable the sharing of good practice and case studies in health and social care services** through existing communication networks, localism initiatives and the LCCP.
- Enable learning by sharing knowledge of barriers to improvement** where they are identified, and seek to use existing networks of communication and Big Society initiatives and the LCCP to address these.
- Provide information on existing public health climate change programmes** to ensure that adaptation as well as mitigation is addressed, working with the wider workforce, including independent providers, to ensure that this is communicated.
- Enable climate change adaptation issues to be included in existing training, awareness and behaviour change programmes for the health and social care workforce**, ensuring that management and frontline staff understand and take it into consideration in their work.

### Buildings and estates

- Consider incorporating climate change adaptation measures into all new buildings and retrofitting projects** undertaken, or funded, by the health and social care sectors. Further guidance for new developers can be found in our publication *Adapting to climate change: A checklist for developers*. Guidance for retrofitting existing buildings can be found in *Your Home in a Changing Climate*.
- Seek to optimise the benefits of telehealth and telecare** by planning for weather impacts on Information and Communications Technology.
- Think about developing guidance for ensuring climate impacts are included in risk assessments for key products in the supply chain.**
- Promote adaptation measures such as the use of sustainable urban drainage and urban greening** in health and social care building construction and retrofitting as ways to reduce surface water flooding and overheating.
- Consider sourcing food and other services more locally**, where possible, to strengthen the resilience of the supply chain – this also achieves co-benefits for mitigation and health.

# Appendix:

## A list of contributors and those who provided advice

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