



Office for Health
Improvement
& Disparities

Preparing the public health system for climate change

Advice and guidance for public health professionals on climate and health

The aim of the Climate and Health Collaborative Advisory Group is to facilitate London system leadership in response to the threats to health caused by climate change. The group convenes relevant partner organisations to better shape and steer a strategic response across health, social care, local and regional government, and health security. The intention is not to replace existing groups, but to enhance overall system working.

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What does climate change mean for health and health equity in London?

The health of the planet and human health are inextricably linked. The WHO has described Climate Change as the biggest health threat facing humanity. A warming climate affects the health of Londoners in three main ways:

1. **Direct impacts** - Increasingly frequent extreme weather events i.e. extreme heat, surface water flooding, wildfires and drought.
2. **Indirect impacts** - Effects on the Planet's Support Systems i.e. air quality, water quality and availability, food security and changing patterns of zoonotic and vector-borne disease.
3. **Indirect impacts mediated by socioeconomic systems** i.e. further exacerbation of health inequalities, pressure on health and care services, resource degradation leading to conflict and forced migration.



Both direct and indirect impacts will cause **disruption to the health system**, significant resilience and strengthening of the system is needed to mitigate and prevent this.

These impacts will increase over coming years. However, their future severity will depend on adaptation and mitigation efforts.

Those in lower socioeconomic groups are disproportionately affected by climate change at local, national and international levels. Pre-existing health conditions and low-quality living conditions exacerbate these effects.

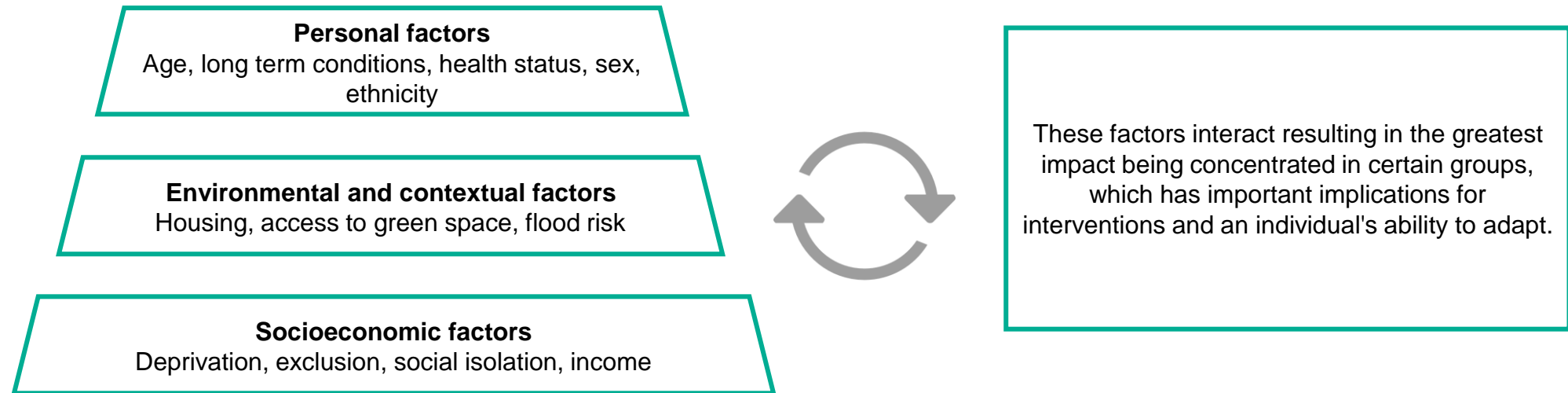
Climate change-related events, such as extreme weather events and displacement, can contribute to mental health challenges, including anxiety, depression, and post-traumatic stress disorder.

Health systems need to be strengthened and adapted to meet the need of populations in a changing climate, while also supported to reduce their own environmental impact.

Who is most at risk from the impacts of climate change?

Inequity in London is exaggerated, with a higher proportion of households at the bottom and top of the wealth distribution and a greater gap between these groups compared to the rest of the UK.

Complex interactions between health, climate change and the way we live, learn, work and play exacerbate existing health inequities, but also present opportunities for co-benefits. Climate action can improve health and quality of life, for example through improved air quality, healthier diets and increased physical activity.



Key climate risks facing London

Heat

In July 2022, London hit 40°C. During that heatwave, the London Fire Brigade received 2,496 calls, operations were cancelled at Guy's and St Thomas' hospitals as IT servers broke and train lines were significantly disrupted. In 2022, there were 387 heat related deaths in London.

Drought

London is already an area of serious water stress. Thames Water said: "London saw temperatures exceed 40 degrees, a 50% increase in water consumption and our reservoirs were at their lowest for 30 years. London needs a new reservoir, significant investment to reduce leaks, smart metering, and greater public education about water efficiency actions.

Rising Sea levels

Sea level in the Thames Estuary is expected to rise by around 1.15 metres by the end of this century.³⁷ Of the total 330 kilometres of flood defences in the Thames Estuary there are 126 kilometres upstream (west) of the Barrier and just 9 kilometres of these (7%) are sufficiently high to last beyond 2050.

Surface water levels and flooding

Flooding poses a lethal risk to Londoners. In July 2021, London was hit by two extreme rainstorms; some parts of the city received more than twice the average July rainfall in two hours causing major disruption and over 2,000 properties flooded with stormwater and sewage. More than 30 tube stations were affected; hospital wards were evacuated.

Wildfires

Wildfires are a growing threat at London's rural/urban interface, as shown at Wanstead Flats in 2018 and Wennington in July 2022. These events highlight the importance of informed land management where planning boundaries meet the natural environment.

Subsidence

Around 43% of properties are likely to be affected by subsidence in London by 2030. London is especially vulnerable due to its clay rich soil, its density of infrastructure and buildings and high exposure to heat and drought.

Wider climate risks

London is vulnerable to climate shocks elsewhere in the world. For example, storms and floods can cause failures in energy and food supply chains; droughts can cause migration and conflict. The College of Policing cites global conflict, particularly where UK populations have heritage in affected regions, as "a factor which may indicate or cause changes in community tension." There are also many risks to London in need of further scientific research. For instance, changing disease patterns.

Why should climate be embedded in health and health equity policy and action?

London's diverse population is confronted with a range of climate-related issues that demand urgent attention and will have significant risks and opportunities for health. Climate action that prioritises adaptation as well as mitigation will save lives, promote health equity and create a more equal and just society¹. Applying a health equity lens to climate action will bring greater co-benefits and reduce health inequities, working towards a just transition.

There is a clear economic case for action that brings co-benefits for climate, health and nature. For example, nature and green space improve mental and physical health, with benefits for blood pressure, stress, type 2 diabetes, children's cognitive development and cardiovascular disease, as well as reducing health inequities linked to income². An estimated £2.1 billion per year could be saved in health costs if everyone in England had good access to green space³.

Facts at your fingertips

More deaths than would be expected start happening at temperatures above 25°C, with higher temperatures associated with even greater numbers of excess deaths⁴

During high temperatures and heatwaves, mental health related deaths increase for every 1°C increase in temperature⁵

Over 1 in 3 people have reported suffering from Post Traumatic Stress Disorder (PTSD) after having their house flooded⁶

2 in 3 flats in London could experience overheating by the 2030s⁷

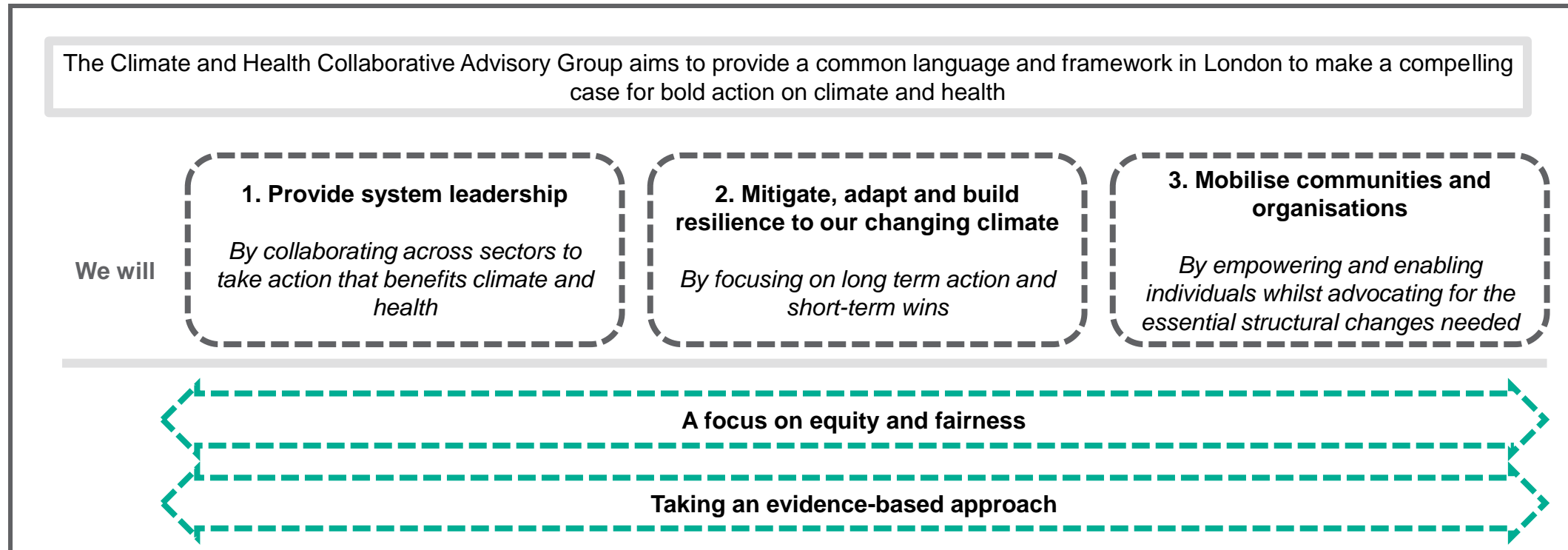
If 1 in 4 people in England cycled regularly and there was widespread use of electric bikes, all-cause mortality could fall by 11%⁸

84% of Londoners say they are concerned about climate change, and concern is high across all age groups⁹

What are the key opportunities and priorities for climate and health equity?

Climate change is a global issue impacting individuals, communities and nations. The scale of the challenge requires action at every level, **public health has a key role to play in tackling the climate crisis and promoting the integration of climate action within existing health programmes.**

This resource takes a London view, focusing on recommendations for regional and local policy and practice. There is a need to build on climate adaptation and mitigation happening across London at local and regional levels. We will work to **embed climate action within core public health work, utilising the skills of public health professionals and collaborating with partners across the system.**



Equity and fairness

Evidence supports

- raising awareness and considering health equity and climate in **action taken within our own organisations**
- promoting **a sustainable economy** that is fair to everyone, protects income and quality of life, and is achieved through a just transition
- ensuring **equity is not lost or deprioritised** in health and climate action, risking the further widening of already existing inequities

What could this look like in practice?

In 2023 Newham Council's Cabinet approved the first [Just Transition Plan](#) in the UK. Focusing beyond solely decarbonisation, the plan looks to build on the just transition principles, outlined by the Mayor of London, to enhance equity and increase the climate resilience of our city.

Based on the evidence that older age and circulatory disease are two major risk factors for morbidity and mortality in hot weather, the [Slovenian](#) government has risk stratified its population to target public health prevention efforts during heatwaves effectively.

Research in the [UK](#) has shown that action and planning needs to go beyond usual registers (such as the priority services register) as most people facing disproportionate risk are not registered, particularly if it requires self-registration.

Evidence-based approach

This involves

- using **evidence, data and evaluation** to inform strategy and action in London, working with academic institutions to address policy and implementation questions
- looking to other cities with similar challenges to London **to learn from others and share what we do**, utilising professional learning networks
- utilising the [best available evidence](#) on **applying behavioural science to climate action and policy**

What resources and tools are available?

Tools and frameworks such as [Adapt to Survive - A Tool for Building Resilience to Climate Change into Health Care Systems](#) from Sustainability West Midlands.

C40 is a global network of 100 mayors of the world's leading cities, including London, that are united in action to confront the climate crisis. The [C40 knowledge hub](#) brings together insights and resources from these cities.

The UK Health Expert Advisory Group developed Sustainable [Health Equity: Achieving a Net Zero UK](#), to advise on developing an approach to assessing the health impacts of setting the Sixth Carbon Budget, covering 2033-2037.

[Briefing](#) on how health and social care have been assessed in the latest UK Climate Change Risk Assessment (CCRA) Technical Report, and what types of action to adapt to climate change risks and opportunities would be beneficial in the next five years.

The [Local Climate Adaptation tool](#) for local decision makers.

Apply the unique skills and expertise of the public health workforce to climate and health action

Leadership

- Leadership to drive improvement in health outcomes and the reduction of health inequalities
- Communicating health and health inequalities
- The design and management of programmes and projects to improve health and reduce health inequalities
- Prioritisation and management of resources

Technical

- Measurement and monitoring of population health needs, risk and inequities
- Promotion of population and community health and wellbeing
- Protecting the public from hazards, including environmental and communicable diseases
- Conducting research and ensuring evidence-based practice is implemented
- The audit, evaluation and design of services and interventions

Operational

- Policies and strategies to improve health outcomes and reduce health inequalities
- Collaborative working across agencies and boundaries to improve health outcomes and reduce health inequalities
- Commissioning to improve health outcomes and reduce health inequalities



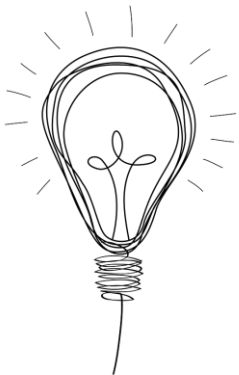
What could this look like for action on climate and health?

- **Providing cross system leadership** and working in collaboration partners from across the health system at scale on climate and health
- **Utilising an evidence-based approach** to understanding the impact of climate on health and options for intervention
- **Identifying and promoting key resources** that strengthen the case for climate and health funding and work
- **Assessment and understanding of cost-effectiveness** of climate and health interventions, ensuring value for money and long-term sustainability
- **Building capacity and leadership** across the system for work on climate and health
- **Engaging and empowering individuals, communities and organisations** to act on climate and health

1. Provide system leadership

The Lancet Commission recommends that 'the health sector provides leadership in delivering health-promoting climate change action'. The UK has demonstrated global leadership in this space, through the development of the UKHSA hot weather and health guidance. This gold standard tool was the first of its kind globally and showed innovation through an impact-based warning system and guidance for care homes.

The public health workforce brings unique and important skills to climate and health action. The opportunities for co-benefits across sectors provides a positive and constructive framing of a daunting and serious issue and can be used to support key goals of other sectors. Building capacity to work on climate and health will help to support identification and implementation of such opportunities.



What could this look in practice?

[Bristol City Council](#) has focused on taking action to improve environmental sustainability in social care, including developing sustainable social care policies to reduce expenditure. In one residential home this has included introduction of rainwater harvesting.

The Greater London Authority Public Health Unit's [Hot Weather Severe Weather Emergency Protocol \(H-SWEP\)](#) was developed to support people who are rough sleeping. It was developed following a rapid evidence review, experience from 2022, and discussion by a task and finish group. It provides a series of recommendations which local authorities will choose to deliver in a variety of different ways based on local circumstances and resources.

[Health care](#) has an opportunity to be a climate leader, and by doing so, achieve not only a healthier planet and a healthier society, but also better health outcomes. Health care can develop climate leadership and build capacity within the workforce at all levels. Greener NHS showcases projects across the NHS such as a [sustainable travel programme in Manchester](#).

The public health workforce brings unique and important skills to provide system leadership on climate and health

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What could this look like for system leadership on climate and health?

- Public health system leadership can **facilitate collaboration and partnership** working across traditional siloes to tackle 'wicked' problems
- Skills in **effective communication with different audiences** about the health impacts of the climate crisis, including the impact on health inequalities
- **Making the case for action** on climate, health and equity at local, regional or national levels
- **Advocating for communities** most likely to be disproportionately affected by climate change or left behind by the energy transition
- **Using evidence and intelligence**, such as [Health Effects of Climate Change in the UK: state of the evidence 2023](#), to make a compelling case for action on climate and health
- **Embedding action** on climate within commissioned and established public health programmes
- Ensuring **appropriate and transparent prioritisation of resources**, considering sustainability and cost-effectiveness

2. Mitigate, adapt and build resilience to our changing climate

London's response needs to go beyond net zero, requiring both adaptation (adjusting to the impacts of a changing climate) and mitigation (preventing and reducing greenhouse gas emissions).

With impacts already being felt globally and predicted to increase in severity, adaptation action is becoming essential but it needs to be harnessed to ensure it confers benefits for health, society and the economy¹⁰. Adaptation action can also improve our resilience in the short term, for example in preparedness for extreme weather.

What could this look in practice?

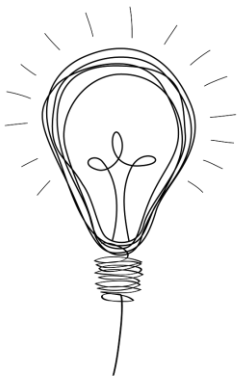
Green space: Nature-based solutions offer health, climate and biodiversity benefits. The cross-Governmental [Green Social Prescribing Project](#) is testing how to embed green social prescribing into communities to improve mental health, reduce demand on health services and develop best practice. Improving availability and access to green space is key adaptation measure as it helps urban cooling and provides cool spaces for local people.

Social care: [Research](#) exploring the experience of social care practitioners in extreme temperatures identified improving communication and understanding of risks as key priorities, specifically the number of excess deaths caused and the predicted increased frequency of events.

Housing: The [Community Resilience to Extreme Weather](#) (CREW) tool is an interactive advice tool that is aimed at designers, decision makers and householders that gives them several options for retrofitting homes aimed at reducing overheating. The changing climate also needs to be central to the design of new homes.

Transport: Walking and cycling schemes typically have a cost-benefit ratio greater than £4 return for every £1 invested. Providing low cost, reliable and accessible public transport reduces carbon emissions and air pollution and provides increased opportunity for physical activity. Creating Healthy Streets is also an adaptive measure, such as by increasing shade and shelter which cools streets and providing more natural drainage to alleviate flooding.

Food: Restricting the marketing and promotion of foods which have both large carbon footprints and negative health impacts (for example products containing red meat, high fat dairy and palm oil) bring co-benefits for health and climate.



The public health workforce brings unique and important skills to achieve mitigation and adaption to a changing climate

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What could this look like for mitigation, adaptation and building resilience?

- **Providing and analysing climate and health data** to inform action and identify those most at risk, including modelling of future impact
- Moving away from an overly individual focus within climate action and messaging, to **building resilience within communities**
- Undertaking, reviewing and promoting **research on climate and health**, including evaluation of interventions and policies, within academic organisations and outside of traditional research settings
- **Translating evidence of climate and health into policy and practice**, for example through tools to support decision making such as the [Local Climate Adaptation Tool](#)
- Through health protection functions ensuring **appropriate management of infectious diseases and environmental hazards**, including planning for how these may shift in a changing climate

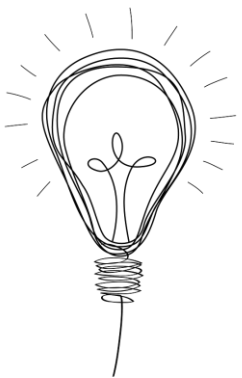
3. Mobilise communities & organisations

There is an important role for empowering and enabling individuals and communities, focusing advocacy on structural and system change while avoiding and rejecting a focus on individual responsibility. This includes and allows for the recognition of the mental health impacts of the climate crisis.

Focus should be given to interventions that are shown to have impact, or conducting robust evaluation of pilots to fill knowledge gaps. Where there is good evidence to support impact, behavioural science can be drawn on to initiate action, giving people¹¹:

- knowledge of how to take action and be equipped with the right skills (capability)
- the chance to act and feel others like them are doing it too (opportunity)
- the desire to act, with a belief that it will 'work' (motivation)

Valuable opportunities and levers exist for organisations, such as local authorities, the NHS and education settings, through their role as employers, purchasers and suppliers.



What could this look in practice?

[Rethink Glasgow](#) is community engagement climate action plan aiming to create a greener and more connected Glasgow. The Commonplace website allows Glasgow residents to drop pins on an interactive map and make suggestions about making places more sustainable. Since its launch, the map has received almost 24,000 views and 1300 contributions that have been factored into the city's climate action plan.

The South Hampstead Flood Action Group is a resident-led group that was established following widespread flooding in London in 2021. The group works with Camden Council, Thames Water and the National Flood Forum to share local knowledge on flood risk, help build the authorities' understanding of this risk picture and collectively develop mitigation measures. This work is brought together under a Community Flood Plan, which the SHFAG uses to track progress on mitigation measures and develop new actions.

Havering Council, working in partnership with Havering Volunteer Centre, developed a [Climate Change Community Champions programme](#) for residents and people who work in Havering - providing informal, interactive learning through activities, events and disseminating correct and positive environmental information to support people in making small greener changes in their day to day lives. In partnership with the Havering Volunteer Centre Lead Champions were recruited and trained to go into the community and provided information to groups/organisations or hosted activities on all aspects of climate change, including reducing food & clothing waste, recycling, upcycling, planting, health & fitness, air pollution, energy efficiency. The programme worked in synergy with the Council's Climate Change Strategy & Action Plan, within that plan the Lead Champions were able to promote the Governments Warmer Homes grants enabling residents to live in a more energy efficient home.

The public health workforce brings unique and important skills to the mobilisation of individuals and communities

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What could this look like to mobilise communities and organisations?

- Working in **partnership with communities to foster and support community-led action on climate action**, such as community energy programmes
- **Consideration and inclusion of climate related health impacts within existing policies and strategies, for example local Health and Wellbeing strategies**, as well as the development of those entirely focused on climate and health
- **Bringing together partners across the system** both within formal governance structures such as ICBs and through wider opportunities for discussion to move the climate and health agenda forwards
- Including climate adaptation and mitigation within **contracts and specifications for public health commissioned services** and advocating for this where commissioning responsibility lies elsewhere
- **Implementing policies and programmes that are outcome driven**, with a focus on reducing health inequalities and the disproportion impact felt by certain groups

Key climate and health resources

[Health Effects of Climate Change in the UK: state of the evidence 2023 \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101444/Health_Effects_of_Climate_Change_in_the_UK_state_of_the_evidence_2023.pdf)

[Local Climate Adaptation Tool \(lcat.uk\)](https://www.lcat.uk/)

[Adapt to Survive – Sustainability West Midlands](https://www.westmidlands.gov.uk/media/101444/Adapt_to_Survive_-_Sustainability_West_Midlands.pdf)

[fph-climate-health-strategy-final.pdf](https://www.fph.org.uk/policy-advocacy/special-interest-groups/sustainable-development-special-interest-group/resources-on-climate-change-and-health/fph-climate-health-strategy-final.pdf)

[The Lancet Countdown on health and climate change](https://www.thelancet.com/countdown-health)

[Green Social Prescribing - National Academy for Social Prescribing | NASP \(socialprescribingacademy.org.uk\)](https://www.socialprescribingacademy.org.uk/green-social-prescribing)

[Adverse Weather and Health Plan - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614444/Adverse_weather_and_health_plan.pdf)

[UK Climate Change Risk Assessment 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614444/UK_Climate_Change_Risk_Assessment_2022.pdf)

<https://www.fph.org.uk/policy-advocacy/special-interest-groups/sustainable-development-special-interest-group/resources-on-climate-change-and-health/>

<https://www.fph.org.uk/policy-advocacy/special-interest-groups/sustainable-development-special-interest-group/>

[‘Climate change and public health: An evaluation framework for local government’](https://www.fph.org.uk/policy-advocacy/special-interest-groups/sustainable-development-special-interest-group/Climate_change_and_public_health_An_evaluation_framework_for_local_government.pdf)

[Hot weather toolkit UKHSA - Google Drive](https://www.ukhsa.gov.uk/resources/hot-weather-toolkit)

[‘Climate change and public health: An evaluation framework for local government’](https://www.fph.org.uk/policy-advocacy/special-interest-groups/sustainable-development-special-interest-group/Climate_change_and_public_health_An_evaluation_framework_for_local_government.pdf)

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