



Climate Change Adaptation Plan

2020 - 2025





Foreword

Changing weather patterns, more frequent extreme weather and rising temperatures have direct implications on our health, and pose challenges to the way in which the NHS, public health and social care system operates.

Response to these challenges can be broadly categorized into:

- **Mitigation:** reducing emissions and the human influence on the climate, and
- **Adaption:** preventing avoidable impacts and health burdens through comprehensive preparedness

Climate science has identified a time lag between cause and effect in the climate system, which means that we will continue to be affected by past emissions for years to come. Consequently, adaption is import for business continuity. Details of our Trust's mitigation activities can be found in our Green Plan 2020-2025; this document concentrates on the Trust's adaptation plan and actions.

Climate change has become, and will increasingly be, an issue of central importance to the health and wellbeing of local communities. Strategies to adapt to climate change are therefore an integral component of local planning and decision making, bringing multiple benefits to the physical and mental health of the population.

Taking action on adaptation will improve the resilience of our services and the communities they serve, lessen the burden of illness and disease, and reduce health inequalities. Adaptation also means developing positive networks and sound communication between organisations and local communities, encouraging self-service and the resilience of local communities. Local action on adaptation will support the National Adaptation Programmeⁱ, and help meet the requirements of the Public Health Outcomes Frameworkⁱⁱ.

'In order to provide the best possible quality healthcare for our patients we must increase our efforts to mitigate climate change and our resilience to cope with the effects of a changing climate'

Southern Health Chief Executive

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1. Introduction

1.1 What is Climate Change?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years. Since the last ice age, which ended about 11,000 years ago, Earth's climate has been relatively stable at about 14 °C. However, in recent years, the average temperature has increased sharply. This has major implications for health and care systems and providers.

The information below details the seven main sources of evidence for climate change:

- 1. Higher temperatures.** In 2019 (the second warmest year on record) the average temperature across global land and ocean surfaces was 0.95°C above the 20th century averageⁱⁱⁱ. While this may not appear large the effect on accumulated heat is significant.

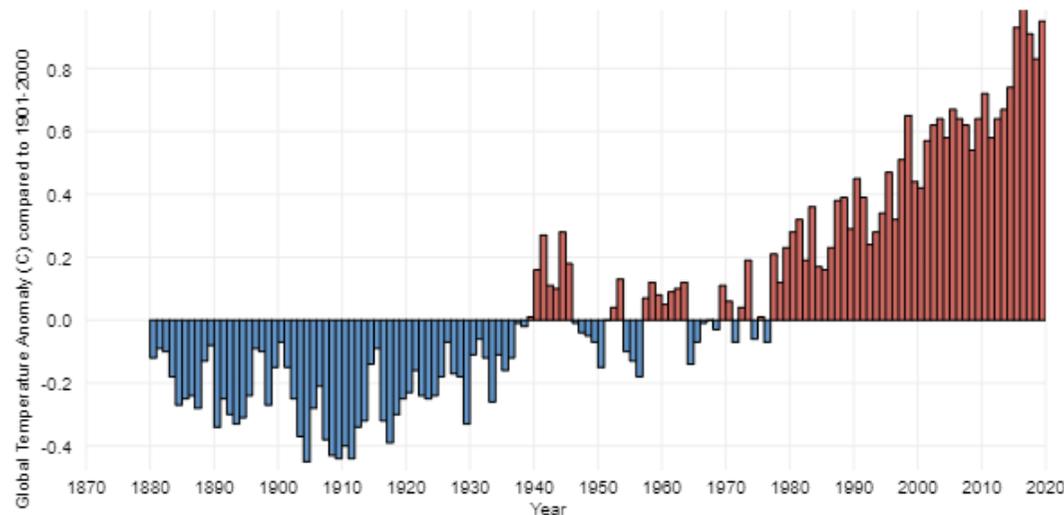


Figure 1: Global surface temperature since 1880 (Source: NOAA)

2. **Changing rainfall.** There have been observed changes in precipitation. Rainfall has increased in the mid-latitudes of the northern hemisphere since the beginning of the 20th century. There are also changes between seasons in different regions. There is also evidence that heavy rainfall events have become more intensive^{iv}.
3. **Changes in nature.** Changes in the seasons (such as the UK spring starting earlier, autumn starting later) are bringing changes in the behaviour of species.
4. **Sea level rises.** Since 1900, sea levels have risen by about 10 cm around the UK and about 19 cm globally, on average. The rate of sea-level rise has increased in recent decades.
5. **Retreating glaciers:** Glaciers all over the world - in the Alps, Rockies, Andes, Himalayas, Africa and Alaska - are melting and the rate of shrinkage has increased in recent decades.
6. **Sea ice:** The Arctic is warming far more quickly than anywhere else on the planet, resulting in significant melting.
7. **Ice sheets:** The Greenland and Antarctic ice sheets, which between them store the majority of the world's fresh water, are both shrinking at an accelerating rate. Permafrost is also thawing quickly.

There is scientific consensus that the warming is due to vastly increased - and still increasing - quantities of greenhouse gas in the atmosphere, caused by human activities. The pace at which this is happening is accelerating^v:

- **Water vapour:** The most important greenhouse gas, in that it has the strongest greenhouse effect, is water vapour. It increases in concentration as the atmosphere warms. The amount of water vapour in the atmosphere has increased, but there's no reason for this scale of change other than the increase in temperature.
- **Carbon dioxide (CO₂) and methane:** are both important greenhouse gases, which have a 'forcing' effect (they increase the effect of warming). Their increase in concentration is mainly caused by emissions from human activity. However, there are also potentially large secondary effects, for example decreased carbon storage due to reduced forest growth or the potential release of large amounts of methane from permafrost, caused by raised temperatures.

The amount of CO₂ in the atmosphere has increased dramatically since the Industrial Revolution - by about 48% (from 280 ppm to 417 ppm in May 2020). As we continue burning fossil fuels and other activities, the amount of CO₂ will continue to rise. This means the extra CO₂ will absorb and emit more and more of the Earth's outgoing radiation, and this will further warm our climate.

Methane has a very strong greenhouse effect, but it doesn't stay in the atmosphere for more than about a decade. CO₂ lasts for at least 100 years, meaning it has a long time to build up and affect our climate.

- **Deforestation:** Cutting down forests, one of the major natural storage 'sinks' for carbon, is further increasing the imbalance between the CO₂ we emit and the planet's capacity to re-absorb it, while there is evidence that tropical forests are taking up a third less carbon than they did in the 1990s due

to higher temperatures, drought and deforestation^{vi}.

The combination of changes set out above has resulted in changes in the climate, with accelerating change underway, including those which will affect the health and well-being of communities around the World, including ours.

This is why we need a comprehensive and coordinated strategy to plan for climate change.

1.2 Climate Change Adaption and the Health & Care System

Climate change adaptation means responding to both the projected and current impacts of climate change and adverse weather events.

Climate change adaptation for the health and care system is two-fold:

1. Health and Wellbeing:

- Climate change could negatively impact the physical and mental health and wellbeing of the UK population.
- The health and care system needs to be prepared for different volumes and patterns of demand.

2. Operational delivery:

- Climate change could impact the operational delivery of the health and care system.
- The system infrastructure (e.g. buildings, communications, emergency service vehicles, models of care) and supply chain (e.g. fuel, food, care supplies) need to be prepared for and resilient to weather events and other crises.

According to the UK Climate Change Risk Assessment^{vi} the UK is projected to see an increase in the frequency and intensity of weather-related hazards including heat waves and floods. While winters are projected to become warmer and wetter, cold spells will still occur and summers will be hotter. The NHS, health and social care organisations must therefore adapt to a range of scenarios so they can be prepared for future climates.

Key health risks from climate change include^{vii}:

Table 1: Health impacts and climate change

Change	Impact	Impact on health and health system (UK CCRA 2017 References)
Extreme weather	Floods may increase due to increases in heavy rainfall and sea level rise.	Resilience and continuity of health and social care services, mental health impacts and injuries. Physical health impacts from events and mental health impacts from events and ongoing issues. (PB9)

Heat	Heat (increased summer temperatures and heat wave events). Heat may be accompanied by higher solar incidence.	Deaths and illness due to very hot weather are likely to increase, and the growing number of older people means more of the population will become vulnerable to hot weather. Higher solar incidence may result in greater UV risks. (PB1)
Milder winters	Milder winters due to higher average temperature.	Milder winters are likely to produce a relative reduction in cold-related deaths, but this may be counteracted by the increase in the number of older people. (PB2)
Air quality	Ground level ozone and pollutants which may cause climate change.	Poor air quality such as in urban areas and linked to climate change, such as from diesel engines, may be exacerbated by heatwaves. (PB10)
Incidence and exposure to marine and freshwater pathogens and infectious diseases	Potentially greater incidence and exposure to marine and freshwater pathogens as well as insect species capable of transmitting diseases affecting humans.	Greater incidence of infectious disease and pathogens – health services requiring different medicines and treatment. (PB11)

The predicted impacts of climate change will vary in different locations. For instance, coastal areas may be subject to significant coastal erosion and cities may suffer more from the ‘urban heat island effect’ due to the concentration of buildings in one place.

These changes will have an impact on individuals, services and society as a whole.

1.3 Climate Change Adaptation and Southern Health

Southern Health NHS Foundation Trust is an integrated provider of mental health, learning disability, social care, and community health care services across Hampshire.

Many of the impacts of climate change, including those for health, will be felt locally. Therefore, we need to develop responses which encompass national guidance and yet are specific to our local circumstances.

This Board approved Climate Change Adaptation Plan has been developed to be aligned with and support the Trust’s **Green Plan**, which sets out our approach to mitigating climate change emissions from our activities and ensuring business continuity in a changing climate and includes a focus on **Increased Readiness for Changing Times**. The Green Plan is supported by a Sustainable Development Action Plan which includes actions that focus on adapting to climate change.



INCREASE READINESS FOR CHANGING TIMES

“When periods of heat, cold, flooding and other extreme events occur it is vulnerable people and communities that suffer the worst. Those communities and their services bear the responsibility of addressing the consequence of these events. Multi-agency planning and organizational collaboration, underpinned by local plans and assurance mechanisms provide a better solution to these events than working independently, individually and ineffectually”





2. Getting Ready and Responding

2.1 Identify the impacts

The UK Climate Change Risk Assessment suggests that the annual number of flood victims suffering anxiety, depression or other mental problems could double by 2050. On top of this, annual damage to UK properties due to flooding from rivers, surface water run-off and the sea currently totals around £1.3 billion. For England and Wales alone, the figure is projected to rise to £12 billion by the 2080s. Hospital admissions for respiratory diseases such as resulting from a rise in concentrations of ground-level ozone have risen and are projected to rise significantly.

Climate change heavily impacts health and social care services by increasing the burden of disease.

The 'Significant Seven' effects of climate change on the health and wellbeing and approaches to adaptation have been identified and are shown below:

Table 2: Health impacts and adaptation

Climate change health impact	Adaptation examples
1. Increased heat related illness and death increased mortality from respiratory and cardiovascular diseases.	Planning of the built environment; indoor heat reduction measures
2. Flood related illness and displacement as well as injury and infection. Future projections indicate an increase in the number of GP surgeries, care homes, emergency service stations and hospitals in the flood risk zone, with the largest risk change generally shown for care homes.	Flood preparedness plans; building controls/restrictions; identifying risk groups
3. Increase in food, water and vector borne diseases due to higher temperatures, drought, flooding, changes in habitat and rainfall patterns.	Surveillance and monitoring programmes; educational programmes
4. Health impacts relating to air quality and aeroallergens – high temperatures are linked to poor air quality with high levels of ozone which are formed more rapidly in strong sunlight; fine particles (PM10, PM2.5) that damage health may also become more prevalent in the future. Climate change may result in earlier seasonal appearance of respiratory symptoms and longer duration of exposure to aeroallergens (e.g. pollen).	Monitoring, alerting, green infrastructure, education programmes
5. Skin cancer and sunburn – excessive exposure to UV may have consequences ranging from premature aging of the skin to skin cancer. Malignant melanoma incidence rates in the UK have	Monitoring; provide shade; educational programmes

more than quadrupled over the last thirty years.

6. Pressure on health care providers to keep services running in the face of extreme weather – extreme events such as droughts, wildfires and storms may impact on service delivery as they become more common in the future. This includes ability to deliver services in the community.

Building and infrastructure design; all hazards risk assessment

7. Increase in health inequalities – between different population groups. For example, increase fuel and food prices, reduced access to heating, cooling, health services, education and food security.

Identify and involve vulnerable groups; targeted/tailored information to at risk groups

2.2 Vulnerable populations & health inequalities

It is likely that the vulnerable groups will suffer most from the effects of climate change and that those that already experience health inequality will also experience more disturbances from environmental changes.

This is clearly of concern to health and social care organisations such as Southern Health and we will need to consider how best to support vulnerable people in different scenarios and the models of care that will be fit for purpose.

Lessening social and health inequalities, equipping communities to act as first responders and identifying and supporting vulnerable populations will all help improve the adaptive capacity of local communities.

Those at greatest risk during a heatwaves and other extreme weather events include:

- **Older people:** especially those over 75 years old, or those living on their own who are socially isolated, or in a care home,
- **Chronic and severe illness:** including heart conditions, diabetes, respiratory or renal insufficiency, Parkinson's disease or severe mental illness. Medications that potentially affect renal function, the body's ability to sweat, thermoregulation (e.g. psychiatric medications) or electrolyte balance (diuretics) can make this group more vulnerable to the effects of heat,
- **Infants:** who are vulnerable to heat due to their immature thermoregulation, smaller body mass and blood volume, high dependency level, dehydration risk in case of diarrhea,
- **Homeless people:** (those who sleep in shelters as well as outdoors) may be at increased risk from heatwaves. Higher rates of chronic disease (often poorly controlled), smoking, respiratory conditions, substance dependencies and mental illness are more frequent homeless populations than in the general population. These factors increase the risks of heat related morbidity and mortality, on top of social isolation, cognitive

- impairment, living alone and being exposed to the effects of urban heat island,
- **People with alcohol dependence and drug dependence:** often have poorer overall health and increased social isolation which can increase their risk of heat stress
- **Inability to adapt behaviour to keep cool:** such as having Alzheimer’s disease, a disability, being bed-bound, drug and alcohol dependencies, babies and the very young,
- **Environmental factors and overexposure:** living in urban areas and south-facing top floor flats, being homeless, undertaking activities that are in hot places or outdoors with high levels of physical exertion, children and adults taking part in organised sports (particularly children and adolescents),
- **Other groups of people:** people attending large scale public events.

Climate change is also likely to have a significant impact on those who are socially excluded and deprived, and refugees and immigrants, as they may have insufficient means to adapt.

Tools and information already exist to support the mapping of communities that might be considered vulnerable, such as Climate Just^{viii}.

SOUTHERN HEALTH TAKING ACTION - IMPACTS IN OUR REGION

Our region is considered one of the healthiest of the UK, with significantly higher life expectancy than the national average. However, there is wide variation in life expectancy, reflecting significant deprivation and health inequality in particular areas.

These tend to be largely concentrated along the coast, thus often combining social vulnerability with high flood risk.

Climate change will pose a number of risks to health and healthcare provision in the South East^{ix}:

- Increased flooding may lead to increased number of deaths, injuries, and people suffering from mental health effects due to loss of homes and property and dislocation.
- Flooding may exacerbate rural isolation, which is already a significant concern for the region, by impeding access to services, shops, schools and healthcare.
- In our region the greatest potential for urban heat island effect, or uncomfortable urban heat due to a lack of green/blue space, is concentrated in Southampton and Portsmouth.
- Ground-level ozone concentrations and related respiratory illnesses occur with greater frequency in our region due to the high population density and poor air quality (for example in Southampton). More severe and frequent heat could worsen air quality, and therefore asthma, respiratory

diseases and allergic reactions.

- Cases of melanoma due to UVB exposure may increase with time spent outdoors.
- Extreme weather events also mean more strain on health services. Flooding, heatwaves, and storms could disrupt provision of healthcare as they do any other business or service.

Potential benefits include significantly fewer deaths from cold and improvements in health and mental well-being resulting from increased outdoor activity.

We need to therefore identify vulnerable populations and quantify the impacts of climate change on these groups in order to provide a strong basis for integrated policies to reduce health inequalities, and suggest adaptation measures - such as improving the accessibility of good quality open and green spaces available to all (a recommendation of the Marmot Review) that will help to reduce these risks. We also need to raise public awareness and support people who have health, housing or economic circumstances that increase their vulnerability to heat.

2.3 Collaborative working

Adaptation to the effects of climate change requires a multi-agency, whole-system approach. This is demonstrated in the National Adaptation Programme (NAP) which sets out a series of actions for key sectors that have been identified as most at-risk from a changing climate, including the health and social care system.

Whilst the NAP recognises the responsibility for addressing many of the health risks rests with the local health and social care system, it is recognised that solutions, particularly those for the medium to long-term, require multi-agency, cross-sectoral collaboration.

Action to build climate resilience can readily be embedded within established networks, fora and processes such as Health and Wellbeing Board strategies, existing emergency planning and business continuity plans.

Strong links exist with the work of emergency planners and bodies such as the Local Resilience Fora. Existing cross sector planning agencies can provide the organisational framework for whole system planning and are a good forum for this activity.

A cross-sector approach involving local authorities, voluntary sector, communities and other health and social care providers is essential for the development and delivery of effective adaptation and resilience strategies across local areas.

The effects of climate change will vary depending on the part of the country you live in. Risks and opportunities to the health and social care system will therefore change according to geography. Hampshire falls within the South-East Region Climate Change Risk Assessment.

SOUTHERN HEALTH TAKING ACTION - COLLABORATIVE WORKING AND THE TRUST

At organisational level climate change adaption has been fully embedded within the Trust's Business Continuity Management Policy, Business impact Assessment and Strategy for Organisational Resilience. This includes development and rollout of a Trust Heatwave Plan, Winter Resilience and Cold Weather Plan, and Emergency Plans for flooding and snow and reflects the Emergency Preparedness, Resilience and Response (EPRR) requirements^x. The Trust Environmental Sustainability Manager sits on the Trust's Emergency Preparedness, Resilience and Response (EPRR) Forum.

As a Category One responder under the Civil Contingencies Act (CCA) the Trust is a member of the Local Health Resilience Partnership in the areas that we operate, with direct links to the Local Resilience Group.

In addition, the Trust Environmental Sustainability is a member of the Hampshire & Isle of White Public Sector Climate Change Adaption Group and Oxford Academic Health Scientific Network to ensure a collaborative approach to local climate change resilience. We will also utilise tools and guidance available, such as that from the Met Office and partners^{xi}.

2.4 Reporting adaption

The Trust's Environmental Sustainability Manager will measure progress of the Trust's Climate Change Adaption Plan as part of the Trust's Green Plan (2020-2025).

Actions from the Climate Change Adaption Plan are captured in the Resilient Communities section of the Trust's Sustainable Development Action Plan. Individual actions will be measured and monitored at service level and reported to the Sustainable Development Forum and the Emergency, Preparedness, Resilience and Response Forum.

The Sustainable Development Forum is responsible for managing and reviewing Trust adaption progress, and reporting to the Board, staff, Sustainable Development Unit and other stakeholders regularly.



3. Becoming Climate Ready

In summary our Adaptation Plan:

- ✓ is embedded in a Board approved Green Plan and has been for a number of years
- ✓ is approved annually by the Board
- ✓ links to and cross refers to Emergency Preparedness Plans, Business Continuity Plans and vice versa
- ✓ is developed in partnership with Local Health Resilience Partnership, Climate Change Adaption Groups and other stakeholders
- ✓ is reflected in relevant actions within the Sustainable Development Action Plan that supports the Trust's Green Plan and which includes a mechanism for review and updating
- ✓ is part of / aligned with local community plans
- ✓ is scrutinised, as part of a mutual accountability process, e.g. by local resilience fora
- ✓ uses the 'Adaptation section' in the Sustainable Development Assessment Tool designed specifically for the health and care system to monitor and benchmark progress

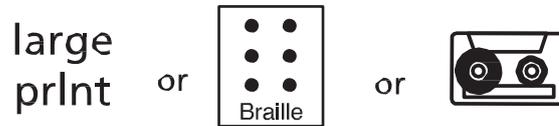
We do however recognise that the climate is changing at an accelerating rate so relevant actions must be reviewed so as to most effectively support our communities and our health system to adapt.



Appendix A: Sample of Sustainable Development Action Plan: Resilient Communities

Issue No.	SDAT ref where relevant	SDAT topic	Trust area	Directorate	What is the issue to be addressed?	Risk Priority Red= High Amber=Med Green=Low	Action to be undertaken	Responsibility Name	Completion date mm/yy	Action Progress Blue=Proposed for closure Green=In progress Amber= Risk of slippage Red=Overdue Purple= On Hold	Notes/ Further information
23	A11	Adaptation	Resilient Communities	Corporate	Climate Change	Amber	Identify and understand the current and future risks and vulnerabilities to our communities, services, service users and staff associated with local climate change impacts including disease patterns.	ESM	SD Forum - Mar 2021	Amber	South East Climate Change Risk Assessment used to identify regional risks. Next step: Determine status of local Public Sector Sustainability Group - overlay SE CCRA and Trust CCAP onto our services, service users & staff.
25	A1	Adaptation	Resilient Communities	Corporate	Climate Change	Amber	Undertake climate change risk and adaptation analysis for our estate in line with UKCIP predictions - this will help feed into risk register entry.	ESM	SD Forum - Mar 2021	Amber	Ensure risk register reflects CC risks and there is planning in place regarding Estate planning and climate change.

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Quality care, when and where you need it

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^{iv} IPCC: https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap3_FINAL-1.pdf

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^{ix} Climate Change Impacts 2017: <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Synthesis-Report-Committee-on-Climate-Change.pdf>

^x Emergency Preparedness, Resilience and Response (EPRR): <https://www.england.nhs.uk/ourwork/eprp/>

^{xi} Met Office: <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/what-do-you-want-to-do>