South East Coast Ambulance Service NHS
NHS Foundation Trust

Adapting to Climate Change Plan 2014 - 2020

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Document Control

Change Control

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Distribution

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1 Introduction and purpose

1.1 Climate change is a reality. The Trust has considered very carefully the potential impact of the changing climate in the South East Coast Region on our ability to deliver our service.

1.2 These impacts are set out in this Plan and have been informed by the latest research and evidence of the forecast climate scenarios for the South East Region as produced by the UK Government's Climate Impacts Programme http://www.ukcip.org.uk/

1.3 This paper is the result of a thorough analysis of the potential impacts of the changing climate in our region. It has been produced because undertaking some limited additional investment in some key areas of our business now will ensure that we can protect our business continuity in the face of potential unforeseen costs which may arise from the impacts of a changing climate locally.

1.4 The Plan provides a framework for the Trust to structure our planning, purchasing and operational activity in order to adapt to the climate changes that are forecast and as a consequence to embed greater resilience to climate change within our organisation. Mitigation of our contribution to climate change i.e., reducing the carbon emissions we produce, is to some extent a separate issue and is dealt with in our Carbon Management Plan.

1.5 Whilst efforts to cut emissions are vital if we are to avoid the worst effects of climate change in the longer term, it is essential that we begin adapting assets, infrastructure and services to cope with the unavoidable impacts.

1.6 The purpose of this Plan is to set out the likely costs associated with managing the risks to our organisation from climate changes forecast for our region. These risks have been researched, quantified and published by National Government who now expects public sector organisations such as ours to consider them carefully and to plan ahead with our adaptation.

1.7 We are asking Committee on behalf of the Trust to make a commitment to take account of climate change impacts in all planned and future developments in the areas of the Built Estate, Operational Resources and Activity, Working conditions, Technology and Information. At this stage we are not asking for any definitive commitment of resources against the actions in 1.8. We will call out the costs on an incremental basis as individual business cases for the actions are developed. However, by setting these considerations out upfront we should be able to plan more effectively to achieve effective, good quality adaptation and avoid additional costs.

1.8 Adapting to Climate Change Action Plan

No.	Category	Response action		Cost £	RAG
1	**Built Estate**	1.1	conduct a climate risk audit of all new build and refurbishment projects	can be integrated in to initial plans	completed for Make Ready Programme through contractor
		1.2	ensure that rainwater harvesting technology and sustainable drainage systems are designed and built in to all new and refurb projects following analysis of balance of cost to environmental benefits	can be integrated in to design	will be incorporated in to Make Ready designs and new HQ
		1.3	ensure new buildings and refurb projects are designed to provide a comfortable environment taking in to account the predicted climate change scenarios forecast for the region, designing in and maximising use of natural ventilation and low carbon cooling techniques to avoid electric air conditioning	can be integrated in to design	will be incorporated in to Make Ready designs
		1.4	identify, map and manage risk in flash flood hotspots especially in terms of sparking pollution	no cost to identify, map and manage risk	consider flooding impact on sensitive locations i.e., location of bunkered fuel, vehicle maintenance centre in Lewes where oil is stored above ground.
2	**Operational resources and activity**	2.1	ensure high performance process specifies prediction tool/analysis	subject to business case	Requires planning with Head of Operational Planning and Resources
		2.2	establish access to early warning systems and to real-time air quality monitoring data	free phone service to smartphones	text alerts from Air Quality network. Specific staff can be set up to receive
		2.3	Make the most of IBIS to identify and to prioritise the vulnerable	Subject to business case	Will be subject to an individual business case
		2.4	Conduct audit of drugs efficacy subject to	No cost to	Medicines management

			temperature	audit	
		2.5	Review Drug procurement storage and transfer to and from as well as storage on vehicle to ensure quality and efficacy in hot weather	Subject to business case	Some work done already on this including changing drug constituencies, e.g., Chlorophenicol, also removed need for a fridge by moving to a PP kit wound glu that can be stored in a shielded container. Flu vaccines now stored at HQ in stead of in fridges dispersed to various locations.
		2.6	Ensure HART Teams are able to respond flexibly to flooding events	No cost	No cost as this is part of HART package Nationally. Current Spec being revised nationally.
		2.7	Establish a Vehicle Procurement approach based on a cost benefit analysis which addresses the need for vehicles to mitigate climate change impacts, i.e., alternatively fuelled, as well as to provide resilience to predicted climate scenarios	Business case in progress	The Director of Finance has requested the development of an Electric/Hybrid Vehicle strategy to analyse cost benefits of procuring alternatively fuelled vehicles
		2.8	Integrate adaptation considerations in to purchasing, tendering and commissioning decisions, i.e i-stat equipment is very temperature sensitive	subject to individual business cases	i-stat equipment has now been rejected. Decision made to procure e-poc which is more expensive initially but consumables are cheaper.
		2.9	The South East is an area affected by water supply-demand deficits (based on existing population levels). Action will be needed to increase water efficiency and demonstrate to regulator that Vehicle Washing does not cause pollution to water courses	requires completion of baseline to inform costs of compliance	Draft vehicle washing policy developed. Compliance of existing and retained sites partly baselined by Estates.
3	**Working conditions**	3.1	Improve staff fitness	supporting initiatives subject to business	Annual Fitness Tests

				cases	
		3.2	provide hot weather uniform consisting of t-shirt and shorts	£500,000	Subject to business case
		3.3	develop hot weather procedure including provision of durable refillable cool water bottles for each member of operational staff	£10,000	Subject to business case
4	**Technology**	4.1	develop means of issuing warnings of high barometric pressure and ozone to staff and EOC i.e., via text or SMS alert @ 10p text	£300	who would benefit most from receiving these alerts?
		4.2	make best use of technology to provide updates to duty staff	subject to business case	
		4.3	move assets and equipment which need to be on site away from locations at higher risk of flooding such as flood sensitive IT equipment in basements	subject to audit and business case	Audit required to establish risk
5	**Information**	5.1	issue information to the public such as re outbreaks of illness/deaths in coastal areas	subject to business case	
		5.2	liaise with public health teams and local air quality teams	no cost	
		5.3	use 111 to inform the worried well	subject to business case	

RAG: Red, Amber, Green

Appendix One

2 Context

2.1 UK Climate Change Risk Assessment

2.1.1 The Government's first **UK Climate Change Risk Assessment (UK CCRA 2012)** shows why we must act now to prepare ourselves and our businesses for the future impact of climate change. The research reveals that without action we could see:-

2.1.1.1 Increases in the frequency of flooding affecting people's homes and wellbeing, especially for vulnerable groups (e.g. those affected by poverty, older people, people in poor health and those with disabilities), and the operation of businesses and critical infrastructure systems. Annual damage to properties in England and Wales, due to flooding from rivers and the sea, rises from £1.2 billion to between £2.1 billion and £12 billion by the 2080s. Without action, a range of important infrastructure such as roads and railways may be affected by a significantly increased risk of flooding based on future population growth and if no adaptive action is taken.

2.1.1.2 Summer overheating, potentially contributing to heat-related health problems. Premature deaths due to hotter summers are projected to increase (e.g. by between 580 and 5900 by the 2050s). This is likely to place different burdens on National Health Service (NHS), public health and social care services. Other health risks that may increase include problems caused by ground-level ozone and by marine and freshwater pathogens.

2.1.1.3 Reductions in water availability, particularly during the summer, leading to more frequent water use restrictions and, in the longer term, water shortages. The gap between demand and availability will potentially widen, impacting homes, businesses, schools and hospitals. By the 2050s, between 27 million and 59 million people in the UK may be living in areas affected by water supply-demand deficits (based on existing population levels). Adaptation action will be needed to increase water efficiency across all sectors and decrease levels of water abstraction in the summer months.

2.2 **Climate Change in the South East Region**

2.2.1 *A Summary of climate change risks for South East England* http://www.climatesoutheast.org.uk/images/uploads/South_East_LOW_RES.pdf provides regionally specific information on which to base our adaptation plan. This information has been drawn from the UK Climate Change Risk Assessment.

2.2.2 The South East is one of the healthiest regions of the UK, but wide variation in life expectancy reflects areas of significant deprivation and health inequality. With exceptions, these tend to be largely concentrated along the coast, often combining social vulnerability with high flood risk.

2.2.3 Along with London, the South East suffers the highest risk of excess deaths due to heat in the country.

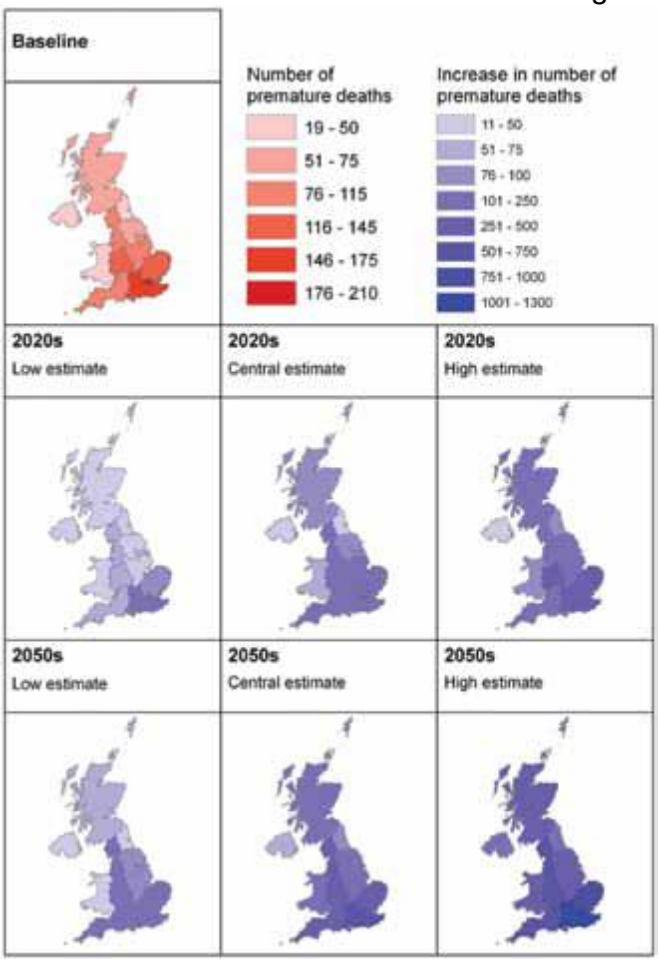
2.2.4 Extreme weather events in the region have already demonstrated a risk of strain on healthcare and emergency services. Portsmouth City Council reported that ambulance calls increased by a third during the heatwave in August 2003. Flooding, heatwaves and storms could disrupt provision of healthcare to the extent where our ability to provide it is severely tested. This applies to public health, the continuity of health and social care services both within the NHS and beyond, the resilience of local emergency services, and is likely to have the greatest impact on the most socially vulnerable.

2.2.5 The consequences identified as a result of the changing climate for the South East Region are summarised in the UK Climate Change Risk Assessment as follows:

- Hotter, drier summers,
- Milder, wetter winters,
- More frequent extreme high temperatures,
- More frequent heavy downpours of rain,
- Significant decreases in soil moisture content in summer,
- Sea level rise and increases in storm surge height,
- Possible higher wind speeds

2.2.6 Figure 1 below shows premature heat related deaths due to elevated summer temperatures based on low, medium and high estimated emissions scenarios for the 2020's and 2050's.

Figure 1



2.3 **Impacts on Health and Wellbeing**

2.3.1 The impacts of climate change on the South East Coast population's general health and wellbeing could be significant. This adaptation plan considers the likely impacts and ensures that SECAmb can respond appropriately.

2.3.2 *Hotter summers are projected to increase the risk of heat-related death and illness.* On average, hot weather accounts for around 1100 premature deaths a year in the UK.[1] By the 2050s, this figure is projected to increase by between 580 and 5900, with the greatest risk in London and southern England.

2.3.3 *The number of casualties due to flooding and the impact of floods on mental wellbeing are both projected to increase.* The annual number of flood victims suffering anxiety, depression or other mental problems is projected to rise by between 4000 and 7000 by the 2050s, from present day figures of between 3500 and 4500. The 18 deaths on average[2] a year currently attributed to the direct or indirect effects of flooding and storms are projected to increase by between six and 34 by the 2050s.

2.3.4 *The risk of health problems caused by marine and freshwater pathogens is projected to increase.* Rising sea temperatures are already providing conditions conducive to an increase in viruses, bacteria and harmful algae in the seas around the UK[3]. Some of these can have an adverse effect on human health (e.g. causing stomach complaints among bathers). As the seas continue to warm and as sudden and heavy rainfall events generate increased amounts of runoff into sewers, the incidence of pathogens within bathing and shellfish waters may increase.

2.3.5 *Health problems caused by air pollution may increase.* Climate change could lead to a rise in concentrations of ground-level ozone. By the 2080s, it is projected that this may lead to respiratory-related deaths related to the short-term effects of ozone increasing by between 650 and 2900[4] from the current average of 10,000 a year, although the predicted impacts before the 2080s are highly uncertain. Similarly, hospital admissions are projected to rise by the 2080s by between 2300 and 10,000, from the current figure of around 33,000 a year.

2.4 **National Policy framework**

2.4.1 The threat that inevitable climate change poses to the UK economy has been well documented in the Stern Review, published by the Treasury at the end of 2006, as well as research published under the framework of the UK Climate Impacts Programme (UKCIP). Government policy across a range of issues is beginning to reflect this fact. The UK Climate Change Act, which came into force

[1] Summary of the key findings from the UK Climate Change Risk Assessment 2012
[2] Summary of the key findings from the UK Climate Change Risk Assessment 2012
[3] As above
[4] As above

in November 2008, requires that a UK-wide climate change risk assessment is undertaken every five years and that a national adaptation programme is put in place.

2.4.2 The Government has now published its first UK Climate Change Risk Assessment. This consists of a series of reports which together provide an evidence base which will help us to better understand the risks associated with a changing climate, and they will inform development of the National Adaptation Programme. Defra published the National Adaptation Programme in July 2013 which focuses on seven core themes of Built Environment, Infrastructure, Healthy and Resilient Communities, Agriculture and forestry, Natural Environment, Business and Local Government.

2.4.3 Chapter Four of the National Adaptation Programme looks at Healthy and Resilient Communities and within this Focus Area Three considers the role of Emergency Services, Local Responders and Community Resilience.

2.4.4 The National Adaptation Programme Report can be found at; https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209866/pb13942-nap-20130701.pdf

2.5 Our responsibility

2.5.1 This Adaptation Plan meets the NHS Standard Contract requirement for providers to demonstrate and report progress on adaptation and mitigation.

2.5.2 The UK has committed to an 80% reduction in carbon emissions by 2050. In order to reach this legal obligation, the NHS SDU has proposed a 10% reduction by 2015 which will take the NHS in the right direction.

2.5.3 There is an Annual Governance Statement for NHS organisations, indicating that delivery plans are in place to deliver the obligations under the Climate Change Act. The Annual Governance Statement is as follows:

2.5.3.1 Section 4: compliance with Climate Change Adaptation reporting to meet the requirements under the Climate Change Act 2008. This disclosure is required to provide assurance that risk assessments have been undertaken and delivery plans are in place in accordance with emergency preparedness and civil contingency requirements, to adapt and mitigate for the extreme weather events predicted as a consequence of climate change based on UKCIP 2009 projections (UK Climate Impacts Programme).

2.5.4 All organisations should take such action and the declaration should read:

"The trust has undertaken risk assessments and Carbon Reduction Delivery Plans are in place in accordance with emergency preparedness and civil contingency requirements, as based on UKCIP 2009 weather projections, to ensure that this organisation's obligations under the Climate Change Act and the Adaptation Reporting requirements are complied with."

2.5.5 SECAmb's Adaptation Plan is a six year plan (running to 2020) which will be reviewed annually by SECAmv's Carbon Management Group, Operational,

Performance andGovernance Working Group and onward reporting into the Risk Management and Clinical Governance Committee.

2.5.6 The Plan has been developed on the basis of the specific climate change risks associated with the theme of Health and Wellbeing highlighted above as well as the risks associated with published climate change scenarios for the South East Region.

2.5.7 The risks identified in the plan consist of a mix of operational risks to SECAmb's emergency service as well as non-operational risks which could affect the health and wellbeing of the population to whom we provide services.

2.6 The table below shows how this work fits with our corporate strategic objectives.

Strategic objective	Contributes? (Y/N)	Comment (state how the project contributes)
Improve on the Trust's performance standards and reduce variation	YES	The plan will ensure that weather related factors are automatically taken in to account for planning and distribution of resources
Deliver excellence in leadership and development	YES	Ensuring that the Trust can protect its business continuity in the face of climate change demonstrates strong leadership and a proactive strategic mindset
Improve access and outcomes to match international best practice	No	
Improve satisfaction and experience for all stakeholders	YES	Safeguarding the service we provide to our patients by efficiently planning and adapting to climate change strongly supports an optimum patient experience
Be an organisation that people seek to join and are proud to be a part of	YES	An organization that can demonstrate robust planning of its resilience to adverse events and a commitment to reducing its environmental impacts are reassuring and attractive features for staff seeking a proactive well organized employer and long term job security
Convert all available pounds / resources to maximise patient benefit	YES	Equipping staff to do their job effectively in difficult weather conditions will result in the best experience for the patient. This also ensures the right kit for the job and protects resources that might otherwise be wasted.
Pillar:		
Response time reliability	YES	This is one area where climate change can have a heavy impact. Increased frequency of flooding can impact on response times for large areas. (LAS and YAS reports)
Clinical effectiveness	YES	Some drugs do not function over a certain temperature and this can have an impact on clinical effectiveness. Some equipment may also be very temperature sensitive for example i-stat
Customer satisfaction	YES	See strategic objectives
Economic efficiency	YES	See strategic objectives
Key Trust outcomes:		
Improve clinical outcomes	YES	It is vital for the Trust to understand clearly how to adjust its planning and operational capabilities within the context of the forecast climate scenarios for the south

		east region.
Less patients transported to hospital	YES	Initiatives such as IBIS and 111 Hear and Treat and See and Treat should result in less transportation to hospital but this needs accurate measurement and clear metrics.
Reduced costs to the health economy /NHS	YES	These costs will only be reduced if the health economy adapts adequately to the climate scenarios forecast for the region.

3 The economic case

3.1 The economic case for the NHS to adapt to climate change has been made very effectively by the nation's experience of climate change impacts over the last decade.

3.2 The heatwave during the summer of 2003 resulted in over 2,000 excess deaths across England and Wales, and is estimated to have cost the UK economy £500 million. 30,000 additional deaths were recorded in 2003 in Europe (source: Eurosurveillance).

3.3 In 2007, the summer floods were classed as a national disaster, costing £4 billion and 13 lives. According to the Association of British Insurers (ABI), subsequent insurance claims averaged between £75,000 and £112,000 per business. More than five million homes are currently at risk of flooding in England - just 1 cm of flood water can cause over £15,000 worth of damage.

3.4 Disruption to transport due to the snow over Christmas 2010 cost Britain an estimated £400 million per day, according to the British Chamber of Commerce. The first quarter of 2011 only recovered part of the 0.5% contraction of GDP, suggesting that activity was permanently lost rather than displaced (Source: Office for National Statistics).

3.5 The wet weather in summer 2012 cost rural Britain at least £1 billion, according to an investigation by BBC One's Countryfile. Costs to farmers in lost output amounted to £600 million, while visitor numbers fell by 12%, costing the tourism industry an estimated £478 million. PricewaterhouseCoopers estimated flooding in the summer of 2012 was likely to cost insurers £500m, with the overall cost of flooding to insurers for the year estimated at £1bn.

3.6 PricewaterhouseCoopers has suggested the current floods will cost insurers £400m, but there are other costs – to the emergency services, to ordinary people's lives and livelihoods, as well as lost farming land and devalued property.

3.7 On an organisational level, the likely economic impacts resulting from the predicted climate scenarios for our region have been considered by a climate change task force including Clinical Operations, Fleet and Estates.

3.8 It is these costs that now require agreement and subsequent accounting for in the Trusts business plans going forward in order to demonstrate that we are adapting

our service needs to climate change and strengthening our business resilience in the face of it.

3.9 The risks are quite specific and these are set out in Appendix One.

3.10 Our response actions to these risks fall in to several main categories notably; Built estate, Operational activity, Technology, Information, Working conditions, and it is these categories which dictate how the action table is set out.

4 Impact analyses

4.1 Evidence shows that ambulance service response times are affected by hot and cold weather variations (YAS and LAS reports).

4.2 A recent London Ambulance Service (LAS) Report states that;

4.2.1 '*During hot weather for every one degree Celsius (of the daily maximum air temperature) above 20 degrees Celsius the total number of Incidents increases by approximately 1% (Figures 6 & 7) of which about half are Cat A incidents (Figures 8 & 9). Also on average for every one degree Celsius above 20 degrees Celsius the Cat A performance declines by about 1%.*

4.2.2 *During cold weather for every one degree Celsius (of the daily minimum air temperature) below 2 degrees Celsius Cat A performance declines by nearly 1.5% on average..'*

4.3 The nature of the changes in climate that we can expect will require us to change some of our working practices e.g., in periods of drought we may have to reduce the frequency and or location of external vehicle washing; in periods of very hot weather staff may benefit from being able to wear shorts and t-shirts based uniforms.

4.4 Relevant policy and procedures will need to be reviewed and implemented and training and communications will need to be provided or adjusted accordingly.

4.5 A corporate communication strategy would help staff to understand the pressures on the business from the need for adaptation and what they can do to help. It would also show that we are leading by example.

4.6 Reporting of progress on this plan will be through OPGWG and onward reporting to RMCGC.

4.7 Adapting successfully and efficiently to climate change is the purpose of this plan. Mitigating the impact of climate change is another element of the Trust's Carbon Management Plan and is being pursued largely by the work to achieve reductions in carbon emissions of 10% by 2015 and 30% by 2017.

5 Recommendation

5.1 This plan establishes that changes to our climate locally, regionally and nationally are taking place and that it is our responsibility and duty to ensure that we adapt to these changes swiftly and systematically.

5.2 We are asking Committee on behalf of the Trust to make a commitment to take account of climate change impacts in all planned and future developments in the areas of the Built Estate, Operational Resources and Activity, Working conditions, Technology and Information. At this stage we are not asking for any definitive commitment of resources against the actions in this plan. We will call out the costs on an incremental basis as individual business cases for the actions are developed. However, by setting these considerations out upfront we should be able to plan more effectively to achieve effective, good quality adaptation and avoid additional costs.