



Cheshire Local Resilience Forum

Multi - Agency Heatwave Plan

Prepared by:	Cheshire, Halton & Warrington LRF Heatwave Sub Group (part of the LRF Flood & Extreme Weather Group)
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UK Resilience

DISCLAIMER

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- That any action or series of actions, processes or procedures described herein as to be taken will be taken by the person or persons herein described or by any other person or persons acting on his, her or their behalf;
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- Any person or persons who act or fail to act in reliance upon this plan or any part or parts of it do so entirely at his, her or their own risk.

PLAN AMENDMENTS

Date	Plan Amendment	Produced By
July 2009	Production of LRF 'Heatwave Plan'	Local Resilience Forum Sub group (Flood & Extreme Weather Group)
April / May 2010	Update LRF Heatwave template in line with Department of Health Guidance March 2010	Local Resilience Forum Sub group (Flood & Extreme Weather Group)

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Section 1 - Introduction

Forward - Why this plan is needed.....?

Heatwaves are forecast to increase in frequency in the coming years – this plan provides important guidance on how to reduce the impact they will have upon health and in doing so, will save lives. Climate change is increasingly acknowledged to be a serious threat to population health. These impacts are highlighted in the updated report Health Effects of Climate Change in the UK 2008.

www.dh.gov.uk/en/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/DH_080702

The Climate Change Act 2008 now makes it a requirement for all statutory sectors, including the health sector, to have robust adaptation plans in place. The National Heatwave Plan is an important contribution to this work.

Climate change is perhaps the most significant environmental problem which mankind will face in the coming century. Efforts to reduce the extent of climate change are of course important, but it is likely that we will have to deal with at least some impacts on health. Climate Change is increasingly to be a serious threat to population health.

Climate change means that heatwaves are likely to become more common in England. By the 2080s, it is predicted that an event similar to that experienced in England in 2003 will happen every year.

In Northern France in August 2003, unprecedentedly high day and night time temperatures for a period of three weeks resulted in 15,000 excess deaths. The vast majority of these were among older people. The Office for National Statistics (ONS) reported a 4 per cent increase over baseline mortality (680 excess deaths) in England and Wales between 16th July and 28th July 2006 when compared with the average for the same period from 2001 to 2005. This may be an underestimate. This compares to an excess mortality of approximately 2000 people, representing 16 per cent of all deaths are indeed 'extra' and are the result of heat-related conditions.

Excess deaths are not just deaths of those who would have died anyway in the next few weeks or months due to illness or old age. There is strong evidence that these summer deaths are indeed 'extra' and are the result of heart-related conditions.

In the next few years, the risk of a heatwave in England as severe as that in France 2003 is very low – less than 0.1 per cent. However, with the effects of the climate change taking place, the frequency and temperatures of heatwaves are predicted to increase over time. During relatively mild heatwaves, excess death rates are significantly, but avoidably, higher in this country. Timely preventative measures can reduce these excess rates. In contrast to deaths associated with cold snaps in winter, the risk in mortality as a result of very warm weather follows very sharply – within one or two days of the temperature rising.

This means that:

- By the time a heatwave starts, the window of opportunity for effective action is very short indeed; and therefore
- Proper preparedness is of the essence.

Aim & Objectives

Aim

*To enhance resilience in the event of a heatwave
to protect health and reduce harm from extreme heat and heatwave for the
Cheshire, Halton and Warrington community.*

Objectives

- To establish a range of specific and generic actions required by agency's stated, within the plan;
- Mitigate heat or heatwave effects within Cheshire, Halton & Warrington;

This means that:

- By the time a heatwave starts, the window of opportunity for effective action is very short indeed, and therefore;
- Proper preparedness is of the essence;

Section: 2 – Planning and Preparedness**Demographic Information – Cheshire Area**

As highlighted in the table below, Cheshire has a growing older population. People are working and living for longer. There are more people of state pensionable age this year compared with latter years. The rising numbers of births and falling numbers of deaths have also played an increasing role in population growth.

Final Mid-2007 Population Estimates (based on estimated resident population)			
	All persons (thousands)	Males (thousands)	Females (thousands)
0	3.7	1.9	1.8
1-4	14.0	7.2	6.8
5-9	17.1	8.7	8.3
10-14	19.1	9.8	9.4
15-19	20.9	10.7	10.2
20-24	19.0	9.5	9.5
25-29	16.9	8.4	8.6
30-34	17.6	8.6	8.9
35-39	22.0	10.5	11.6
40-44	22.3	10.9	11.4
45-49	21.1	10.2	10.9
50-54	19.3	9.4	9.9
55-59	20.5	10.1	10.4
60-64	17.5	8.6	8.9
65-69	13.9	6.7	7.2
70-74	11.8	5.5	6.3
75-80	9.2	4.1	5.1
80-84	6.2	2.4	3.8
85+	4.9	1.5	3.5
All ages	297.0	144.5	152.5
Children 0-15	58.3		
Working age: 16-64M/59F	183.8		
Older people: 65M/60F and over	54.9		

NB: Figures may not add exactly due to rounding.

Published 17.2.09 - Office for National Statistics, Population Estimates Unit

<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106>

Projections for Future Heatwaves

The sections below outline the projected range of temperature increases in England and the implications for different sectors.

Projected Range of Temperature Increases from 2010 to 2099

Current and predicted summer temperatures for Central England; the analysis is based upon average temperatures, not extremes:

Short (now):

10th to 90th percentile of year to year variability approximately -1°C to $+1^{\circ}\text{C}$

Medium (2010–2039):

Central estimate $+1.4^{\circ}\text{C}$ (compared to 1961–1990 average);

10th to 90th percentile summer temperature rise from UKCP09 medium emissions scenario $+0.5^{\circ}\text{C}$ to $+2.6^{\circ}\text{C}$ Long (2040–2069):

Central estimate $+2.6^{\circ}\text{C}$;

10th to 90th percentile range $+1.2^{\circ}\text{C}$ to $+4.4^{\circ}\text{C}$

Longer (2070–2099):

Central estimate $+3.7^{\circ}\text{C}$; 10th to 90th percentile range $+2.0^{\circ}\text{C}$ to $+6.1^{\circ}\text{C}$

Long (2040–2069):

Central estimate $+2.6^{\circ}\text{C}$; 10th to 90th percentile range $+1.2^{\circ}\text{C}$ to $+4.4^{\circ}\text{C}$

Longer (2070–2099):

Central estimate $+3.7^{\circ}\text{C}$; 10th to 90th percentile range $+2.0^{\circ}\text{C}$ to $+6.1^{\circ}\text{C}$

UK Climate Change Projections – <http://ukclimateprojections.defra.gov.uk>

The average yearly temperature increases show the overall increasing temperature trends within England – the Southern and Central regions will be most affected. However, the extreme temperature variations are the ones that will be related to ‘heatwaves’.

Mean Temperature in the Cheshire Area

The table attached shows average daily maximum temperature for Manchester Airport on a month-by-month basis for 1971-2000. The airport is represented as the most convenient weather station for the Cheshire county.

From the table below the highest 'mean' temperature over the past approximate 30 years was reached in the month of July.

The maximum temperature reached at the airport in the last 30 years was 32C on 3 July 1976, although 31C has been reached on several days including 1995, 2003 and 2006.

Air Temperature Long Term Average for RINGWAY :

24Hr Mean Air Temperature for 1971-2000

Month	Mean value of 24Hr Mean Air Temperature	Months of original data used to produce mean
All Months	9.75	360
January	4.18	30
February	4.41	30
March	6.25	30
April	8.21	30
May	11.53	30
June	14.06	30
July	16.32	30
August	16.1	30
September	13.55	30
October	10.37	30
November	6.73	30
December	4.96	30

Produced on May 15, 2009

Further information on Heatwave Projections

The UK Climate Impacts Programme – UKCIP publishes climate change scenarios on behalf of the Government. These show how the UK’s climate might change in this century. The latest set of climate change information, UKCP09, can be found at:

http://www.ukcip.org.uk/index.php?option=com_content&task=view&id=163&Itemid=287

UKCIP works with businesses and organisations to help them assess how they might be affected by climate change, so they can prepare for its impact. We encourage organisations to use our tools and information to help them consider their climate risks and to plan to adapt.

See our website at <http://www.ukcip.org.uk/index.php> For tools to assess climate change impacts, see:

http://www.ukcip.org.uk/index.php?option=com_content&task=view&id=74&Itemid=187

The Risk of Heatwave

In the next few years, the risk of a heatwave in England as severe as that in France in 2003 is very less than 0.1 per cent. However, with the effects of climate change taking place, the frequency and temperatures of heatwaves, excess death rates are significantly, but avoidable, higher in this country. Timely preventive measures can reduce these excess rates. In contrast to deaths associated with cold snaps in winter, the rise in mortality as a result of very warm weather follows very sharply – within one or two days of the temperature rising.

Climate change means that the number of very hot days and the frequency of heatwaves will increase. High temperatures similar to those experienced in August 2003 or July 2006 are expected to be viewed as usually cool, by the end of this century (although natural variability will still bring the odd cold snaps or years). The greatest risk is in South east England and in urban centres. England has a National Heatwave Plan, which sets out responsibilities and measure for protecting health and reducing harm during heatwave conditions.

Cheshire - Community Risk Register (CRR)

Following the growing population in the Cheshire area, people working and living longer, against the risk of heatwave in England, the Cheshire LRF Community Risk Register for the risk has been confirmed as having a risk rating of ‘High’.

Likelihood	3
Impact	3
Risk Rating	High
Status	Level 2 – Work In Progress

Patterns of Heatwaves

People gradually adapt to changing temperature patterns, and therefore heatwaves are a relative experience. We adapt to temperature during each summer and gradually over long periods of time, however, there is always a level to which we become accustomed to. Therefore, thresholds vary for each region and risks to health appear to be greater earlier in the summer. In northern parts of England the temperature threshold is lower than for London and the South East. This explains the variation in regional heatwave temperature thresholds listed in Appendix:1. The temperatures given are the highest temperatures for that region. There are indications that night time temperatures may be more important for impacts upon health than maximum day time temperatures.

Excess summer deaths show regional variations, which relate largely to differences in temperature levels across the country. The excess deaths and illness related to heatwaves occur in part due to our inability to adapt and cool ourselves sufficiently. Therefore, relatively more deaths occur in the first days of a heatwave, as happened in 2006 during the first hot period in June (which did not officially reach heatwave status). This emphasizes the importance of being well prepared for the first hot period of the season and at the beginning of a heatwave.

The Effects of Heat on Health

Increasing temperatures in excess of 23°C are associated with excess summer deaths, with higher temperatures being associated with greater numbers of excess deaths; at 27°C or over, those with impaired sweating mechanisms find it especially difficult to keep their bodies cool.

Older women appear to be more vulnerable to the effects of heat than older men, possibly due to having fewer sweat glands and being more likely to live on their own.

The main causes of illness and death during a heatwave are respiratory and cardiovascular diseases. A linear relationship between temperature and weekly mortality was observed in summer 2006, with an estimated 75 extra deaths per week for each degree of increase in temperature. Part of this rise in mortality may be attributable to air pollution, which makes respiratory symptoms worse.

Cities and urban areas tend to be hotter than rural areas, creating urban heat island effects. This is due to increased absorption and reflection of the sun on concrete compared with Level 1 or brown spaces; reduced cooling from breezes due to buildings and increased energy production from houses, industry, businesses and vehicles. These factors have important implications for long term planning, in order to reduce the impact of heatwaves by targeting high risk geographical and urban areas.

High temperatures are also linked to poor air quality with high levels of ozone and small particles (PM10), also increase in concentration during hot, still air conditions. Both are associated with respiratory and cardiovascular mortality. Additionally, there may be increases in sulphur dioxide emissions from power stations due to an increase in energy use for air-conditioning. Sulphur Dioxide worsens symptoms of asthma.

Given the recent predictions of the impact of climate change, recommendations made in this plan aim to be energy neutral, except in very high-risk situations where lives may be saved.

The Effects of Heat on Health - Continued

The body normally cools itself using four mechanisms:

- **radiation** in the form of infrared rays;
- **convection** via water or air crossing the skin;
- **conduction** by a cooler object being in contact with the skin; and
- **evaporation** of sweat.

Increasing temperatures in excess of approximately 25°C are associated with excess summer deaths, with higher temperatures being associated with greater numbers of excess deaths; 27°C or over, those with impaired sweating mechanisms find it especially difficult to keep their bodies cool.

When the ambient temperature is higher than skin temperature, the only effective heat loss mechanism is sweating. Therefore, any factor that reduces the effectiveness of sweating such as dehydration, lack of breeze, tight fitting clothes or certain medications can cause the body to overheat. Additionally, thermoregulation, which is controlled by the hypothalamus, can be impaired in the elderly and the chronically ill, and potentially in those taking certain medications, rendering the body more vulnerable to overheating. Young children produce more metabolic heat, have a decreased ability to sweat and have core temperatures that rise faster during dehydration.

Older women appear to be more vulnerable to the effects of heat than older men, possibly due to having fewer sweat glands and being more likely to live on their own.

However, the main causes of illness and death during a heatwave are respiratory and cardiovascular diseases. A linear relationship between temperature and weekly mortality was observed in England in summer 2006, with an estimated 75 extra deaths per week for each degree of increase in temperature. Part of this rise in mortality may be attributable to air pollution, which makes respiratory symptoms worse. The other main contributor is the effect of heat on the cardiovascular system. In order to keep cool, large quantities of extra blood are circulated to the skin. This causes strain on the heart, which for elderly people and those with chronic health problems can be enough to precipitate a cardiac event, for example heart failure. Additionally, death rates increase in particular for those with renal disease. A peak in homicide and suicide rates during previous heatwaves in the UK has also been observed.

Sweating and dehydration affect electrolyte balance. For people on medications that control electrolyte balance or cardiac function, this can also be a risk. Medicines that affect the ability to sweat, thermoregulation or electrolyte imbalance can make a person more vulnerable to the effects of heat. Such medicines include anticholinergics, vasoconstrictors, antihistamines, drugs that reduce renal function, diuretics, psychoactive drugs and antihypertensives. Ozone and PM10s also increase the level of cardiovascular-related deaths.

Plan Summary

The arrangements outlined here spell out what needs to be done by health and social care services and other bodies to raise awareness of the risks relating to severe hot weather and what preparations both individuals and organisations should make to reduce those risks.

The plan also explains the responsibilities at national and local level for alerting people once a heatwave has been forecast, and for advising them how to respond and what to do during a heatwave.

The Core Elements of the Plan are:

- A Heat Health Watch system operating from 1 June to 15 September, based on Met Office forecasts, which will trigger levels of response from the Department of Health and other bodies.
- Advice and information issued by the Department of Health directly to the public and to health and social care professionals, particularly those working with at risk groups, both before a heatwave is forecast and when one is imminent. See Appendix: 2.
- The Strategic Health Authority (SHA) role in a heatwave is to ensure that local services have the capacity and capability to deliver their functions as laid out in this plan. The SHA will hold the local NHS to account for implementation. Specific guidance for SHAs will be outlined under each alert level.
- Hospitals and care, residential and nursing homes to provide cool areas and monitor indoor temperatures to reduce the risk of heat related illness and death in the most vulnerable populations.
- Extra help, where available, from health and social care services, the voluntary sector, families and others to care for those most at risk, mainly isolated older people and those with a serious illness or disability. This will be determined locally as part of individual care plans, and will be based on existing relationships between statutory and voluntary bodies.
- Using the media to get advice to people quickly, both before and during a heatwave.
- Long term multiagency planning to adapt to and reduce the impact of climate change, including 'greening the built environment', increasing shading around and insulation of buildings, increasing energy efficiency and reducing carbon emissions.

The Heatwave Plan

A Heat-Health Watch system will operate in England from 1 June to 15 September each year. During this period, the Met Office may forecast heat waves, as defined by forecasts of day and night time temperatures and their duration. See figure 6 for a summary of the heat wave levels.

While Heat-Health Watch is in operation, the Health Protection Agency will monitor the number of calls people make to NHS Direct and the number of visits made to a sample of GP practices. Daily NHS Direct call rates and weekly GP consultation rates will be reported to the Department of Health, to assess how people's health is affected by the weather and to give some insights into how well services are responding.

The Heat Health Watch system comprises four main levels outlined in figure 6 and described in further detail below – 1, 2, 3 and 4. It is based on threshold day and night time temperatures as defined by the Met Office. These vary from region to region, but the average threshold temperature is 30°C during the day and 15°C overnight. Details of individual regional thresholds are given in Annex 1.

The LRF Heatwave Plan

As part of its strategy to provide appropriate support and care during a heatwave, the Department of Health updated its heatwave plan for 2008 and its public health information leaflets. The plan's purpose is to enhance resilience in the event of a heatwave.

Changes have been made to this year's heatwave plan including: a move from a numerical system of alert levels to a traffic light system (see below) and changes to the alert thresholds; the inclusion of maps and graphs detailing regional patterns during the 2006 heatwave; and additional information on long term planning, including how to create cool environments – in particular for hospitals and care homes. A central part of the heatwave plan is the 'Heat-Health watch' system which will operate from 1 June to 15 September. The Heat-Health watch will monitor for heatwave threshold day and night temperatures, as well as telephone enquiries to NHS Direct and General Practitioner consultations relating to heat-related illnesses.

The Heat-Health Watch system comprises of four main levels: Level 1, Level 2, Level 3 and Level 4 Emergency. It is based on threshold day and night-time temperatures as defined by the Met Office. These vary from region to region, but the average threshold temperature is 30°C during the day and 15°C overnight. Details of individual regional thresholds are given in Appendix: 1

NATIONAL LEVEL – Summer Preparedness

Preparations at this level will be the overall responsibility of the Department of Health, in collaboration with the Met Office, the Health Protection Agency and NHS bodies, including NHS Direct.

The Met Office will develop and publicise the regional threshold temperatures in preparation for Level 2 and will ensure that forecasts are disseminated when there is as a 60 per cent chance that thresholds will be exceeded, as appropriate to the Department of Health and via national, regional and local weather forecasts.

The Health Protection Agency, in collaboration with NHS Direct, will refine mechanisms for the surveillance of increased heat-related illness with the aim of being able to provide daily real-time reports to the Department of Health. These will provide a source of intelligence on how severe the effects are and how well services are responding.

The department of health will issue general advice to the public and healthcare professionals, including details of what to do at Level 2 and Level 3.

A public information leaflet will be available through GP Practices, pharmacies, NHS walk-in centres, Citizens Advice Bureaux, NHS Direct call centres, hospitals, care homes and voluntary sector organizations such as Age Concern and Helped the Aged. The same advice will be posted on NHS Direct Online, with links to the Health Protection Agency and Department of Health websites.

A factsheet will be available for health and social care professionals, particularly those who visit people in their homes. This offers advice on practical measures to reduce health risks during a heatwave and encourages identification of at-risk individuals in advance and assessment of their additional care needs. This will be available at www.nhs.uk

A second factsheet will be specifically aimed at the managers and staff of residential and nursing care homes, where people are particularly at risk during hot weather. This will be available at www.nhs.uk.

REGIONAL LEVEL LONG TERM PLANNING - FLOWCHART

SUMMARY OF HEATWAVE PLAN LEVELS AND PLANS

LEVEL 1

Summer Preparedness and Long-Term Planning

All Year (Regional Level)

Summer Preparedness 1st June – 15th September

During the summer months, social and healthcare services need to ensure that awareness and background preparedness are maintained by the measures set out in the Heatwave Plan. Long-term planning includes year-round joint working to reduce the impact of climate change and ensure maximum adaptation to reduce harm from heatwave. This involves influencing urban planning to keep housing, workplaces, transport systems and the built environment cool and energy efficient.



LEVEL 2

Alert and Readiness

Alert and Readiness in Community for example, in care homes and hospitals

This is triggered as soon as the Met Office forecasts that there is a 60 per cent chance of temperatures being high enough on at least two consecutive days to have significant effects on health. This will normally occur 2-3 days before the event is expected. As death rates rise soon after temperature increases, with many deaths occurring in the first two days, this is an important stage to ensure readiness and swift action to reduce harm from a potential heatwave.



LEVEL 3

Heatwave Action

This is triggered as soon as the Met Office confirms that threshold temperatures have been reached in any one region or more. This stage requires specific actions targeted at high-risk groups.



Level 4

Heatwave Action: Emergency

Emergency (if severe or prolonged Heatwave)

This is reached when a heatwave is so severe and/or prolonged that its effects extend outside health and social care, such as power or water shortages, and/or where the integrity of health and social care systems is threatened. At this level, illness and death may occur among the fit and healthy, and not just in high-risk groups and will require a multi-sector response at national and regional levels.

High Risk Groups:

Community: Over 75, female, living on own and isolated, severe physical or mental illness; urban areas, south facing top flat; alcohol and over exertion.

Care home or hospital: Over 75, female, frail, severe physical or mental illness; multiple medications; babies and young children



*Because Level 2 is based upon a prediction, there may be jumps between levels. Following level 3, wait until temperature cool to Level 1 before stopping Level 3 actions.

Please see Appendix: 5 for more information regarding Department of Health Warnings (Heat Health Watch).

Levels of Activation

Level 1: Summer Preparedness and Long Term Planning

During the summer months, social and healthcare services need to ensure that awareness and background preparedness are maintained by the measures set out in the Heatwave Plan. Long term planning includes year round joint working to reduce the impact of climate change and ensure maximum adaptation to reduce harm from heatwaves. This involves influencing urban planning to keep housing, workplaces, transport systems and the built environment cool and energy efficient.

Level 2: Alert and Readiness

This is triggered as soon as the Met Office forecasts that there is a 60 per cent chance of temperatures being high enough on at least two consecutive days to have significant effects on health. This will normally occur 2–3 days before the event is expected. As death rates rise soon after temperature increases, with many deaths occurring in the first two days, this is an important stage to ensure readiness and swift action to reduce harm from a potential heatwave.

Level 3: Heatwave Action

This is triggered as soon as the Met Office confirms that threshold temperatures have been reached in any one region or more. This stage requires specific actions targeted at high-risk groups.

Level 4: Emergency

This is reached when a heatwave is so severe and/or prolonged that its effects extend outside health and social care, such as power or water shortages, and/or where the integrity of health and social care systems is threatened. At this level, illness and death may occur among the fit and healthy, and not just in high-risk groups and will require a multisector response at national and regional levels.

Section: 3 - Role & Responsibilities

North West Ambulance Service (NWAS)

The primary areas of responsibility for the NWAS in any emergency are:

- To save life;
- To provide treatment, stabilisation and care of those injured at the scene;
- To provide appropriate transport, medical staff, equipment and resources;
- To establish effective triage points and systems and determine the priority evacuation needs of those injured;
- To provide a focal point at the scene of an incident for all National Health Agencies and other medical resources.

Health Organisation's

The NHS consists of a number of different organisations. The role of the NHS organisation will be dependent upon the type of the emergency; however, it will be usual for the local Primary Care Trust to be involved in each incident where any part of the NHS is responding.

Lead Primary Care Trust

In an emergency affecting more than one Primary Care Trust, the Lead PCT (NHS Western Cheshire) will take responsibility for command and control of the NHS. This is a delegated responsibility from the Strategic Health Authority (NHS North West) which will be involved in any emergency at the regional level. The Lead PCT will co-ordinate attendance at any multi-agency strategic meetings and ensure that there is NHS representation at multi-agency tactical meetings.

In the event of an emergency which affects just one PCT area, the Lead PCT (via the NHS Gold Commander) will keep a watching brief of the situation.

Primary Care Trust

The PCT is responsible for co-ordinating the local NHS response to a major incident. This will be done via a major incident control room. The PCT will liaise with all local trusts within the PCT boundary (all NHS trusts and services involved) in responding to the incident. The local PCT will attend at either Local Authority or Health premises, to represent the local NHS organisations involved in the response.

- **Ensure all provider organisations are providing information**

Acute Trusts

- Implement the 'surge plan', if required.
- Implement other mutual aid arrangements
- Provide a clinical response including provision of general support and specific / specialist health care to all casualties, victims and responders;
- Continues to review its essential services throughout the incident;

Mental Health Trusts – (5 Borough Trust) / Cheshire and Wirral Partnership

- Co-ordinate and directly provide the psychological and mental health support to staff, patients and relatives in conjunction with Social Services;
- Advise on the long term effects of trauma on the casualties associated with the incident and recommend the appropriate level of psychological intervention where required;
- Ensure that mental health patients caught up in the incident are discharged home with appropriate support in the community from Community Mental Health Teams and Crisis Teams or their equivalent.
- Conform to the Department of Health Heatwave Plan requirements, which are detailed in the Trust Heatwave plan. This includes:
 - responding to the national Heat-Health Watch system which operates from June to September
 - circulating information to staff and clients that is consistent with that issued by the Department of Health
 - providing cool areas and monitoring indoor temperatures to reduce the risk of heat-related illness
 - participating in long-term multi-agency planning to adapt to and reduce the impact of climate change, including 'Level 1ing the built environment', increasing shading around and insulation of buildings, increasing energy efficiency and reducing carbon emissions.
- Ensure that mental health patients caught up in the incident are discharged home with appropriate support in the community from Community Mental Health Teams and Crisis Teams or their equivalent.
- Advise on the long term effects of trauma on the casualties associated with the incident and recommend the appropriate level of psychological intervention where required;

Health Protection Agency

- The Health Protection Agency (HPA) is an independent body that exists to protect the health and well-being of everyone in England and Wales, delivering local services through a team based in the Cheshire & Merseyside Unit (HPU).
- Provides health advice in emergencies to partner agencies and the general public on a 24-hour basis, through a locally based on call Consultant in Health
 - Protection/Communicable Disease Control
 - Support the Directors of Public Health within the PCT's in their role, in giving advice to their communities;
 - If the SCG is formed, HPA role in offering advice to partner agencies via the STAC
 - The HPA, in collaboration with NHS Direct, will refine mechanisms for the surveillance of increased heat-related with the aim of being able to provide daily real-time reports to the Department of Health. These will provide a source of intelligence on how severe the effects are and how well services are responding.

Cheshire Local Authorities

- Receive advice/information from 'Heat Health Watch' Alerts and cascade these to appropriate directorates for action within their area as appropriate; e.g. community services; environmental health including dog warden section; community wardens; highways and leisure services
- Activate the Cheshire, Halton & Warrington Heatwave Plan in conjunction with the local directorate plan;
- Activate Communication Strategy i.e. Website, Media, Radio, Local Magazines;
- Activate the Local Authority Emergency Centre if required.
- Raise awareness among care home managers and staff about the very significant heat-related risks;
- Community Services to support community and primary care staff in:
 - Identifying individuals who are at particular risk from extreme heat. These people are likely to be already receiving care.
 - Identifying any changes to individual care plans for those in high risk groups, including those with chronic illness or severe mental illness, which might be necessary in the event of a heatwave, including initiating daily visits by formal or informal carers to check on people living on their own.

Cheshire Local Authorities (Continued)

- Working with the families and informal carers of at-risk individuals to ensure awareness of the dangers of heat and how to keep cool and to put simple protective measures in place, such as installing proper ventilation and ensuring that fans and fridges are available and in working order.
- Reviewing surge capacity and the need for, and availability of, staff support in the event of a heatwave, especially if it lasts for more than a few days.
- Provide staff with information about the very significant heat-related health risks;
- Provide additional staff training in line with the Department of Health factsheet.
- Consider, where appropriate, implementing alternative working patterns i.e. the introduction of 'siestas' or evening working to avoid working at midday when the temperatures will be higher
- Ensure organisers of large, outdoor events are aware of the dangers of heat and encourage them to mitigate the effects by providing shade, cold water and information for individual protection.
- Where individual households are identified as being at particular risk from hot weather, a request can be made to Environmental Health to do an assessment using the Health Housing and Safety Rating System.
- In summer months especially, cycling and walking should be encouraged as a means of transport as this will help to reduce overall heat levels and poor air quality in urban areas due to car use.
- Co-ordinate any response by the voluntary sector.

Section: 4 - Heat-Health Alerts (Organisation / Agency Actions)

ALERT STATUS	ACTIONS
<p>LEVEL 1</p> <p>Summer Preparedness and Long Term Planning</p> <p>1st June -15th Sept</p>	<p>Met Office role will be to:</p> <p>Preparations at this level will be the overall responsibility of the Department of Health, in collaboration with the Met Office, the Health Protection Agency and NHS bodies, including NHS Direct.</p> <p>The Met Office will:</p> <ul style="list-style-type: none"> • develop and publicise the regional threshold temperatures in preparation for Level 2; • ensure that forecasts are disseminated when there is a 60 per cent chance that thresholds will be exceeded, as appropriate to the Department of Health and via national, regional and local weather forecasts. <p>Health</p> <p>Health Protection Agency role will be to:</p> <ul style="list-style-type: none"> • Joint working with NHS Direct refine mechanisms for surveillance. • Provide real time reports i.e. heat related illness to the department of health. • Provide intelligence on how severe the effects of the heatwave. • Provide intelligence on how well services are responding. • Preparations at this level include Strategic Health Authorities and Government Offices. • Strategic Health Authorities will ensure that healthcare providers are aware of all the guidance on minimising and coping with heat related health risks.

In particular, SHAs role is to ensure that:

- national guidance is cascaded to local services;
- all organisations engage in preparing for a heatwave;
- all NHS trusts include heatwave planning on their risk register; and
- local Primary Care Trusts identify which local healthcare organisations are most vulnerable to the effects of heatwaves

DH and Social Care in Government Offices will:

- work in partnership with the health and social care sectors at regional and local levels,
- work with other government departments at regional level, to ensure awareness and preparedness for heatwave planning and enhance long term planning, including working with and influencing:
- ensure care, nursing and residential homes are aware of the Heatwave Plan; are engaged in preparing for heatwaves; and include heatwave planning on their risk registers.

Department of Health role will be to:

- inform and ensure awareness of the Heatwave Plan with the regional resilience team and regional HPA director;
- identify which geographical areas and populations in the region are most at risk from heatwaves;
- encourage the uptake of insulating homes for populations vulnerable to the effect of heatwaves;
- encourage regional planning to increase urban green spaces to reduce the impact of urban heat islands;
- encourage regional housing to promote the provision of external shading on south/west facing windows, especially for vulnerable households and the use of reflective paint;
- ensure consistency of heatwave planning messages and actions with the children's sector;
- establish links of heatwave planning with other adaptation and mitigation measures for climate change, for example, promote carbon emission reduction from housing insulation and flood management with by increasing green space.
- Preparations at this level include NHS Trusts; Social Services; public health and local authorities, and care, residential and nursing homes.

Primary Care Trusts and local Social Services will support community and Primary Care Staff in:

- Identifying individuals who are at particular risk from extreme heat. These people are likely to be already receiving care.
- Identifying any changes to individual care plans for those in high-risk groups, including those with chronic illness or severe mental illness, which might be necessary in the event of a heatwave, including initiating daily visits by formal or informal carers to check on people living on their own.
- Work to install thermometers, identify cool areas, increase awareness in staff.
- Ensure the Social and healthcare services/staff ensure awareness/background preparedness are in place;
- What patients are 75+ and in hospital;
- Check resilience of state of equipment to ensure they can be maintained at working temperature, increase of temperature;
- Working with the families and informal carers of at risk individuals to ensure awareness of the dangers of heat and how to keep cool and to put simple protective measures in place, such as installing proper ventilation and ensuring that fans and fridges are available and in working order.
- Reviewing surge capacity and the need for, and availability of, staff support in the event of a heatwave, especially if it lasts for more than a few days.
- Where individual households are identified as being at particular risk from hot weather, making a request to Environmental Health to do an assessment using the Housing Health and Safety Rating System (HHSRS). In summer months especially, cycling and walking should be encouraged as a means of transport as this will help to reduce overall heat levels and poor air quality in urban areas due to car use.
- Primary Care Trusts can work actively with the local authority lead on the HHSRS to identify and assess those considered most vulnerable during heatwaves.
- If residents find their home uncomfortably hot and there are concerns about the heat negatively affecting their health, seek advice from the Environmental Health Department within the local authority, who can undertake a Housing Health and Safety Rating System Assessment. Please see Appendix: 3.

NHS Trusts and Care, Nursing and Residential Homes will raise awareness among staff about the very significant heat related health risks. Additionally, the following preparations should be made:

- Indoor thermometers should be installed in each room that vulnerable individuals spend substantial time in (bedrooms, living areas and eating areas) and, during a heatwave, indoor temperatures should be monitored at least four times a day.
- Cool rooms or cool areas should be created. High risk groups who are vulnerable to the effects of heat are physiologically unable to cool themselves efficiently once temperatures rise above 26°C. Therefore, every care, nursing and residential home should be able to provide a room or area that maintains a temperature of 26°C or below. Hospitals should aim to ensure that cool areas are created that do not exceed 26°C, especially in areas with high risk patients.
- If temperatures exceed 26°C, high risk individuals should be moved to a cool area that is 26°C or below.
- Cool areas can be developed with appropriate indoor and outdoor shading, ventilation, the use of indoor and outdoor plants and, if necessary, air conditioning.
- During the summer months, sufficient staff must be available so that appropriate action can be taken in the event of a heatwave.
- Due to the additional risk of psychiatric medications affecting thermoregulation and sweating, mental health trusts and teams need to ensure that hospital environments have a cool room (26°C or below) and that heatwave considerations (see the section on Protective factors on page 18) are included within an individual's Care Programme Approach.
- All care, residential and nursing homes should provide an email address to local authority/NHS emergency planning officers, to facilitate the transfer of emergency information.

Local authorities will:

- raise awareness among care home managers / staff about the very significant heat related health risks;
- encourage additional staff training in line with the Department of Health factsheet.
- will encourage the organisation of large, outdoor events taking account of the dangers of heat by ensuring the provision of shade, cold water and information for individual protection.

Generic Role & Responsibilities (Year round joint working)

- Increase awareness in staff/front line staff/departments/directorates;
- Ensure appropriate stock levels leaflets;
- Confirm channels of communication identified – website, leaflets;
- All organisation's to ensure awareness is raised of the LRF Heatwave Plan exists and location;
- Be aware of the organisation's Role & Responsibilities;
- Resilience of equipment (i.e.). Ventilation Systems and other equipment are fully operative;
- Year round joint working to reduce impact;
- All organizations to ensure risk assessments are undergone for those staff who are at high risk (front line staff, kitchen staff, landscape);
- Working patterns generated for staff.

<p>LEVEL 2</p> <p>Heatwave levels reached in one or more regions, including our region</p> <p>60 per cent risk of heatwave in 2-3 days</p>	<p>SHA, PCT and Health & Community / Social Services</p> <p>This triggered as soon as the Met Office forecasts threshold temperatures for at least two to three days ahead in any one region, or forecasts that there is a 60 percent change of temperatures being high enough on at least 2 consecutive days to have significant effects on health. As most deaths occur in the first 2 days, this is an important stage at which to ensure readiness and swift action to reduce harm from a potential heatwave.</p> <p>A warning via the met office will be broadcast to the public via television and radio weather reports. Other organisation's/agencies will be notified by heatwave alerts (once they have set them up)</p> <p>Triggered 60 percent chance of reaching 30 degrees in the day and 15 degrees in the night.</p> <p>Local level</p> <p>Primary Care Trusts and local Social Services will ensure:</p> <ul style="list-style-type: none"> • health and social care workers have identified those in their community who are at particularly high risk from a heatwave. They should arrange, where appropriate, for a daily visit/phone call by a formal or informal carer (family, neighbour, friend, voluntary and community sector workers) during the heatwave period (see the section on High-risk factors on page 18). Visits should be considered especially for those living on their own and without the contact of a daily carer; • distribution of Department of Health advice to community health and social care workers who are in contact with all those defined as at risk living at home; and • distribution of Department of Health advice to the managers of local authority funded and private care, residential and nursing care homes.
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Acute Trust, Residential and Nursing Homes will ensure:

- cool rooms are ready and consistently at 26°C or below;
- check that indoor thermometers are in place and recording sheets printed to measure temperature four times a day;
- identify naturally cooler rooms that vulnerable patients can be moved to if necessary;
- identify particularly vulnerable individuals (those with chronic/severe illness, on multiple medications, or who are bed bound) who may be prioritised for time in a cool room;
- obtain supplies of ice/cool water;
- ensure that staffing levels will be sufficient to cover the anticipated heatwave period;
- repeat messages on risk and protective measures to staff; and
- in the context of mental health trusts and community teams, ensure that visits or phone calls are made to advise high-risk individuals (those with severe mental illness, living on their own, or without regular contact with a carer).

This is triggered as soon as the Met Office confirms that threshold temperatures have been reached in any one region or more. This stage requires specific actions targeted at high-risk groups.

Health

- High risk individuals / groups have been identified within the community;
- Check high-risk people have visitor/phone call arrangements in place;
- Daily visits/phone call by a formal or informal carer to these high risk individuals are scheduled into work programmes;
- Visits may be considered for those living on their own and without the contact of a daily carer;
- DoH Advice given to community by health and social care workers who are in contact with high risk individuals;
- DoH Advice given to managers of Local Authority funded and private care, residential and nursing care homes;
- Monitor indoor temperatures four times a day in care homes and hospitals;
- Prepare cool areas in residential care homes and hospitals;
- Ensure sufficient staffing;
- Ensure sufficient cold water and ice.

Acute Trusts

- Implement Trust Heatwave Plan, bringing Control Team together;
- Identify at risk wards (Paeds , Elderly, CCU etc)
- Prepare cool areas for patients & staff
- Ensure sufficient staffing
- Ensure sufficient cold water and ice
- Ensure staff awareness of drinking water supplies, fans in each area
- Increase laundry supplies
- Identify ward patients on medications likely to exacerbate heatstroke and review medications;
- Discharge as many patients as safely as possible to community services;
- Each Division/Department to identify senior person to implement Level:3 actions;
- Shade all south facing windows particularly between 11am -3pm;
- Ensure all patients have fresh drinking water 2hrly minimum and assistance if required;
- Move identified patients to cool areas and instigate a rotation if insufficient capacity for all;
- Review staff rotas with a view to shortening shifts;
- Redirect external workers(i.e. groundsmen) to other internal work;
- Encourage patients to wear cotton night clothes or hospital gown;
- Review daily menus to include as much cold food as possible;
- Review patient medications in at risk group;
- Move visiting times to morning / evening;
- Turn off lights in daytime and any electrical appliances not immediately being used (other than emergency equipment on charge);
- Measure and record all room temperatures 4hrly – 8am, 2pm, 8pm, 2am.

Local Authority

- Using media resources to give advice to the community;
- Each Division/Department to identify senior person to implement Level 3 or Level 4 actions for the Local Authority;
- Generic – cascade the alert level within your organisation/agency;
- Monitor temperatures
- Ensure sufficient cold water and ice

Generic Role & Responsibilities

- Public Media Messages;
- Increase advice to health and social care workers;
- Ensure all actions at first stage are in place;
- Take appropriate actions required following Risk Assessments completed;
- Update websites – keeping cool advice...
- Working practices - Check officers who wear a uniform (loose fitting clothes)
- STANDY – Multi agency approach (meet to consider collaborative multi agency response).

LEVEL 3

Heatwave for four or more days in two or more regions, including our region

Local Level**Primary Care Trusts and local Social Services will:**

- continue to distribute advice to people at risk, and managers and staff of care homes;
- ensure that health and social care staff are aware of risk and protective factors, and consider, where appropriate, daily visits/phone calls for high-risk individuals living on their own who have no regular daily contacts;
- advise social care or informal carers to contact the GP if there are concerns about an individual's health; and
- ensure that Department of Health advice reaches private and local authority funded care, residential and nursing care home managers as soon as a heatwave starts.

It is recommended that Hospitals and Care, Residential and Nursing Homes:

- implement appropriate protective factors, including regular supplies and assistance with cold drinks;
- ensure that cool rooms are consistently below 26°C as this is the temperature threshold at which many vulnerable patients find it difficult to cool themselves naturally if sweating is impaired due to old age, sickness or medication;
- check that indoor temperatures are recorded four times a day for all areas with patients in;
- identify particularly vulnerable individuals (those with chronic/severe illness, on multiple medications, or who are bed bound) for prioritisation in cool rooms;
- monitor and minimise temperatures in all patient areas and take action if the temperature is a significant risk to patient safety, as high risk patients may suffer undue health effects including worsening cardiovascular or respiratory symptoms at temperatures exceeding 26°C;
- reduce internal temperatures by turning off unnecessary lights and electrical equipment;
- consider moving visiting hours to mornings and evenings to reduce afternoon heat from increased numbers of people;
- make the most of cooling the building at night with cross ventilation. Additionally, high night time temperatures in particular have been found to be associated with higher mortality rates. Due to the potential increased risk of cross infection that may be induced by cross ventilation, they should ensure increased vigilance of other routine infection control measures;
- in the context of mental health trusts and community teams, ensure that visits or phone calls are made to check on high-risk individuals (those with severe mental illness, living on their own, or without regular contact with a carer);
- seek early medical help if an individual starts to become unwell; and

It is recommended that Hospitals and Care, Residential and Nursing Homes (Continued):

- ensure that discharge planning takes into account the temperature of accommodation and level of daily care during the heatwave period.

Primary Care Trusts, Local Authorities, Strategic Health Authorities and the Care Quality Commission have a potential role in monitoring whether the above measures are implemented.

Acute Trusts

- Restrict visiting other than to seriously ill patients only;
- Invoke Major Incident Policies as required.

Generic Role & Responsibilities:

- Ensure all actions in Level 2 are in place;
- Media alerts about keeping cool;
- Visit/phone high-risk people;
- Reduce unnecessary travel
- Review public safety events
- Major incident standby;
- Warning and Informing all staff in all agency's;
- Continue to review essential services throughout the incident;
- Lead PCT action – if there is a point as a multi agency (lead);
- Heatwave action in the community - Media alerts about keeping cool;
- Visit/phone high-risk people in the community;
- Look out for neighbours in the community;
- Review safety of public events in the community;
- Care homes and hospitals – monitor indoor temperatures;
- Care homes and hospitals – maximize external shading and night time ventilation;
- Ensure cool areas do not exceed 26oC – care homes and hospitals;
- Provide regular cool drinks – care homes and hospitals;
- Implement mutual aid arrangements where appropriate;

LEVEL 4

Heatwave for four or more days in two or more regions

EMERGENCY

If severe or prolonged heatwave affecting sectors other than health.

Responsibilities at Level 4: Emergency

This is reached when a heatwave is so severe and/or prolonged that its effects extend outside health and social care, such as power or water shortages, and/or where the integrity of health and social care systems is threatened. At this level, illness and death may occur among the fit and healthy and not just in high-risk groups.

Level 4 may be declared locally, regionally or nationally, according to established operating doctrines.

In the event of a major incident being declared, all existing emergency policies and procedures will apply.

All Level 3 responsibilities will also continue.

Heatwave – Cross Government Response

- In the event of a Level 4 emergency being declared, the Cabinet Office will ensure that a lead government department is nominated to coordinate the central government response machinery as necessary.
- In practice, while the Department of Health is most likely to be the lead government department responsible for a Level 4 heatwave emergency, as a prolonged heatwave would primarily be a public health issue, this would need to be confirmed at the time in light of prevailing circumstances.
- While other issues are likely to arise as part of any heatwave emergency, such as power failures and transport disruption, these would be dealt with by the departments concerned as part of a coordinated response unless they became the overriding concern, in which case the overall central government department lead may transfer responsibility.
- Response arrangements therefore need to be flexible, in order to adapt to the nature of the challenge and other circumstances at the time while applying good practice, including lessons from previous emergencies.

Anticipated Impacts for other Sectors During a Heatwave Level: 4

Anticipated risks and responses during a heatwave Level 4, according to different sectors, are summarised below.

The previous pages have highlighted the risks to public health from a heatwave. The risks to other important areas of life from four or more days where temperatures have reached threshold values during the day and overnight are equally important. These wider risks, which have the potential to generate disruption at a national, regional and local level, include the following:

Transport infrastructure

- Road surfaces are susceptible to melting under extreme or prolonged temperatures; however, as the surface temperature may not be dependent on the air temperature, melting is more likely to be as a result of direct sunlight.
- Traffic congestion leading to delays on motorways or trunk roads has potentially serious consequences for those stranded in vehicles, particularly vulnerable people such as the elderly or young children.
- The rail network will be susceptible to rails warping or buckling under extreme or prolonged temperatures and this will vary according to specific local factors including local geography and the maintenance status of the track. As a very approximate guide, staged preventative measures begin to be applied when air temperatures reach 22°C. The most extreme precautions would only cut in at air temperatures of 36°C (which is likely to give a railhead temperature of over 50°C).
- Extreme temperatures on the London Underground network could lead to a range of health and safety challenges. London Underground network operations monitor Met Office weather forecasts, and if temperatures are forecast not to fall below 24°C for three days running they will get ready to implement plans to deploy hot weather notices and bottled water supply, as well as measures to prevent track buckling.

Power Supplies

- Rising temperatures increase demand for supply due to use of air conditioning units and reduce the power carrying capacity of the system as it is harder to cool conductors – this will restrict the ‘maintenance window’ available and could ultimately require greater redundancy on the system to permit maintenance.
- Rising temperatures cause cooling problems for power stations as they are unable to cool components. This effect has been experienced in France, but not yet to a serious extent in the UK.
- High air temperatures are more of a problem and nuclear reactors can trip out at above 40°C, although this has never yet been reached at any sites (38°C being the record).
- Rising temperatures lower power station efficiency. This effect is of lower concern than the two effects above.

Environmental pollution

- Air quality – traffic concentrations can generate pollutants such as oxides of nitrogen and lead and greatly increase ozone levels.
- Water quality – prolonged sunshine can accelerate the growth of blue green algae, which can cause problems for aquatic life, including fish.
- A prolonged heatwave may cause increased health and environmental problems including odour, dust and vermin infestation, increasing public nuisance and complaint. Additional measures would be necessary to mitigate these problems, including more frequent collections and enhanced pollution control measures at landfills and other waste treatment facilities.

The Potential for Wildfires

A wildfire is any uncontrolled fire that occurs in the countryside or a wilderness area. Wildfires occur when the necessary elements for a fire are in place: an ignition source, a combustible material such as vegetation, sufficient heat and an adequate supply of oxygen. Many wildfires are attributed to human sources such as arson, discarded cigarettes, sparks from equipment, and power line arcs. The risks during a heatwave can be greater because the vegetation will be that much drier than usual. The smoke and other risks from wildfire can cause the closure of motorways.

Animal Welfare

- Rising temperatures would require the increase of ventilation requirements for animals temporarily housed at farms, markets and slaughterhouses.
- Rising temperatures lead to changes in transport, markets and temporarily housed animal stocking densities.
- Delays on transport have the potential to lead to increased distress and suffering of animals and increase the number of deaths of animals in transit.
- Slaughterhouses' killing throughput may be affected due to reduced working hours at slaughterhouses and the transport of a lower number of animals.
- There is the potential for an increase in the number of pet fatalities due to irresponsible owners leaving them in restricted enclosures with poor ventilation. (e.g. dogs in cars).

Water Shortages

- Water companies have plans in place to deal with any disruption to the water supply or sewerage services. These plans are regularly reviewed and tested by the water companies and are independently certified every year.
- In the event of an unavoidable failure of the piped water supply, water companies must supply water by alternative means such as in static tanks in the street or bottled water. There is a requirement to provide not less than 10 litres per person per day, with special attention given to the needs of vulnerable people, hospitals and schools.
- Where an interruption to the piped water supply exceeds five days, the minimum requirement rises to 20 litres per person per day.
- Strong demand has the potential to jeopardise the availability of water supplies, particularly in southern and some other parts of the UK, and could lead to local hosepipe restrictions if high temperatures persist.

Children's Sector

- Some schools have had to close classrooms where conditions are too hot.
- Looking after schoolchildren and those in early years settings during heatwaves: Guidance for teachers and other professionals

www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb/21057761802?p=1204031509010

Crops

- Rising temperatures mean crops start to experience stress due to heat and water shortage, if prolonged they will die. Horticulture is very sensitive.
- Crops may not be harvested at appropriate times and may be lost or quality and nutritional value may be reduced.
- High temperatures may mean crops cannot be sown at appropriate times or need more water.
- Flowering and pollination may be affected, reducing fruit and grains.
- It may become difficult to store crops such as potatoes at the appropriate temperature as machinery has to work harder.

Please see Appendix: 4 – Key Trigger Temperatures.

Section: 5 - Warning, Informing and Advising the Public

Agencies will seek to give general information to the public about emergency planning through this website, leaflet and talks. During an incident the LRF will use the local radio and maybe television, and if the incident is protracted, will consider a helpline and leaflet distribution.

Informing the public provides advanced warning to those who need it, allowed the public to monitor progress and allowed the public to take action themselves to reduce the effects of a heatwave.

For example:

- The Department of Health will broadcast core messages in line with the 'Heat Health Watch'. See Appendix: 5.
- The Primary Care Trust will provide services; leaflets and district nurses to provide information and advice;
- The Acute Trust will provide aid with hospitals
- The Local Authority to provide information and advice to social care homes/workers
- It is the responsibility of each agency / organisation to ensure the leaflets are sent out and reach the community. There is information via the websites, NHS Direct.

Section: 6 - Monitoring and Surveillance

The Health Protection Agency will further explore improving surveillance of heat-related deaths, for example, monitoring a sample of mortuaries, coroners and funeral homes during a heatwave period.

Evaluation

An annual review of the Heatwave Plan will take place each autumn/winter.

Information on Alert Levels

The heatwave alert levels will be triggered by temperature thresholds (See Appendix:1) set according to regional variations. Therefore the Met Office website (www.metoffice.gov.uk) will be the first place where the alert levels will be available. The alert levels will also be subsequently displayed on the Department of Health, Health Protection Agency and NHS Direct websites.

Information on Air Quality

Regular updates on levels of particulate matter (PM10), sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide and available on Teletext (page 156) and the website www.airquality.co.uk (UK Air Quality Archive), which also offers health advice to those who may be particularly sensitive to air pollution.

Advice to those with respiratory problems is consistent with the advice to all others during a heatwave – to keep windows shaded and closed when outside temperatures are hotter during the daytime to reduce heat (and ozone) entering the home; and opening windows at night or when it is cooler outside, to aid cooling of their home.

Ozone is the main air pollutant that affects respiratory symptoms and has a diurnal variation, peaking during the hottest period of the day and dropping to very low levels at night. Other air pollutants tend to be at lower levels indoors, and therefore the other main advice to those with respiratory problems is to restrict going outside, especially during the hottest period of the day.

Additional information on air quality can be found from:

The Freephone Air Pollution Information Service

Tel: 0800 55 66 77

Sky News Air Pollution Bulletin

(which normally airs in the evening around 18:45)

APPENDIX: 1

Temperature Thresholds

Threshold day and night temperature defined by the Met Office by region.

Temperature in degrees centigrade:

Region	Day	Night
London	32	18
South East	31	16
South West	30	15
Eastern	30	15
West Midlands	30	15
East Midlands	30	15
North West	30	15
Yorkshire and Humber	29	15
North East	28	15

APPENDIX: 2

Heatwave Advice

Heatwave Advice

What to do in case of a Heatwave?

Whilst most of us enjoy sunny weather, the extreme heat of a heatwave can be seriously damaging to the health, and can sometimes be fatal. This article provides information about who is at risk during a heatwave, and advice about what to do in case of a heatwave.

Who is at risk during a Heatwave?

Whilst extreme heat is dangerous to everyone it is especially so to babies and young children, older people, those living in care homes, and those in certain at-risk groups.

When temperatures remain abnormally high over more than a couple of days, excessive heat can prove fatal. In one hot spell in London in August 2003, deaths among people aged over 75 rose by 60 per cent.

The Chief Medical Officer, Sir Liam Donaldson has said,

'Although severe heatwaves are uncommon in England, the experience across Northwest Europe in 2003 is a reminder that heat can be fatal, or at the very least can cause unnecessary discomfort.'

'The elderly are particularly vulnerable and it is important that those aged over 75, especially those who live alone or in care homes, take precautions to avoid heat exhaustion and heat stroke. If you care for people who could be at risk during a heatwave, it's important that you plan ahead - taking action in advance can help reduce the number of excess deaths from heat.'

Those at particular risk during a heatwave include:

- older people, especially those over 75 years old and living on their own, or in a care home;
- people suffering from mental ill health, those with dementia, and those who rely on help from other people to manage day-to-day activities;
- people who are bed-bound or have mobility problems;
- people taking certain types of medication;
- people with a serious chronic condition, particularly breathing or heart problems;
- people who already have a high temperature from an infection;
- people who use alcohol or illicit drugs;
- babies and young children, especially under four years old;
- people who are physically active such as manual workers, or sportsmen and women

What Symptoms should you look out for?

In a severe heatwave the body extra strain is placed on the heart as it tries to cool the body, this can lead to an increase in heart related illnesses. Additionally, air quality often gets worse during a heatwave, which can make respiratory symptoms worse. In more extreme situations, one can overheat and dehydrate, leading to heat exhaustion or heat stroke. If you have a heart or respiratory problem, this may make your symptoms worse.

Symptoms of **heat exhaustion** include:

- headaches
- dizziness
- nausea and vomiting
- muscle weakness or cramps
- pale skin
- a sudden rise in temperature

If you are suffering from worsening of heart or respiratory symptoms or heat exhaustion you should move somewhere cool and drink plenty of water or fruit juice. If possible, take a lukewarm shower, or sponge yourself with cold water. If symptoms are of concern, call NHS Direct or your Doctor.

If heat exhaustion is left untreated, heatstroke can develop, but it can also occur suddenly and without warning.

Symptoms of **heatstroke** include:

- headaches
- nausea
- an intense thirst
- sleepiness
- hot, red and dry skin
- a sudden rise in temperature
- confusion
- aggression
- convulsions and a loss of consciousness

Heatstroke can result in irreversible damage to the body, including the brain, or death.

Steps to take *during* a Heatwave

Listen to bulletins on radio and television and follow health advice.

Keep out of the heat

- If a heatwave is forecast, try to plan your day in a way that allows you to stay out of the heat.
- If possible, avoid going out in the hottest part of the day (11am - 3pm).
- If you cannot avoid strenuous activity like sport, DIY, or gardening, keep it for the cooler parts of the day such as early morning.
- If you must go out, stay in the shade. Wear a hat and light loose fitting clothes, preferably cotton. If you will be outside for some time, take plenty of water with you.

Stay cool

- If you can, stay inside, in the coolest rooms in the house.
- Reduce heat from sunlight coming through the windows. External shading, e.g. shutters, is best. Metal blinds and dark curtains may absorb heat and make the room warmer – it is best to use pale curtains or reflective material.
- Keep windows closed while the room is cooler than it is outside and open them when the temperature inside rises, and at night for ventilation. If you are worried about security, at least open the windows on the first floor and above, if possible.
- Take cool showers or baths and splash yourself several times a day with cold water, particularly your face and the back of your neck. A loose, cotton, damp cloth or scarf on the back of the neck can also help you to stay cool.
- Indoor and outdoor plants will help keep your home cool due to evaporation and the shading from trees and bushes.

Drink regularly

- Drink regularly, even if you do not feel thirsty. Water and fruit juice are best.
- Avoid alcohol, tea and coffee. They make dehydration worse.
- Eat as you normally would. Try to eat more cold food, particularly salads and fruit, which contain water.

Help Others

- Older people are much more prone to the effects of heat. You can help older relatives or neighbours by checking on them, if possible, every day, and reminding them to drink plenty and often. They should have a mixture of drinks including fruit juice and water.
- Help them to keep their house as cool as possible, drawing curtains, opening windows at night, or using a fan if necessary.
- [Heat-Health Watch \(opens new window\)](#)

When should you seek advice?

Contact your doctor, a pharmacist if you have any unusual symptoms during a heatwave, especially if you are taking medication.

You can also contact NHS Direct on 0845 4647 or visit NHS Direct website for advice.

Watch out for cramp in the arms, legs or stomach, feelings of mild confusion, weakness or problems sleeping.

If you do have these symptoms, rest for several hours, keep cool and drink plenty of water or fruit juice.

Seek medical advice if any of these symptoms get worse or do not go away.

Remember heatstroke can kill. It can develop rapidly and suddenly lead to unconsciousness. If you suspect someone has heatstroke call 999 immediately.

- [NHS Direct \(opens new window\)](#)

While waiting for an ambulance

If someone is suffering heatstroke and you do need to call an ambulance:

- Try to move the person to somewhere cooler;
- Increase ventilation by opening windows and using a fan;
- Cool them down as quickly as possible by loosening clothes, sprinkling them with cold water or wrapping them in a damp sheet;
- If they are conscious, give them water or fruit juice to drink;
- Do not give aspirin or paracetamol.

APPENDIX: 3

Housing Health and Safety System (HHSRS)

Housing Health and Safety Rating System (HHSRS)

This is the way in which local housing authorities assess homes under the Housing Act 2004. It is the basis for regulation of housing conditions. Anyone, including health professionals, can request that an assessment be made if they have concerns about how housing conditions could potentially affect someone's health.

The assessment is usually made by an Environmental Health practitioner in the local housing authority. Judgement as to the risk is made by reference to the vulnerable age group for the hazard arising from deficiencies identified on inspection regardless of who is actually living there (for excess heat this is people aged 65 years or over).

There are 29 potential hazards in the system: these include excess cold, excess *heat*, damp and mould, lead, carbon monoxide, noise, entry by intruders, falls associated with baths, falling on stairs, falling on the level, fire, electrical hazards, and crowding and space.

Depending on the severity of the hazards found, the housing authority can require that the landlord takes action to reduce the hazard; alternatively, the assessment can be used as a basis for housing renewal assistance, e.g. grants or loans. For the most serious of hazards (Category 1) there is a duty on the authority to take action. For further information on the HHSRS please visit:

www.communities.gov.uk/documents/housing/pdf/150940.pdf

APPENDIX: 4

Key Trigger Temperatures

Key Trigger Temperatures

The key trigger temperatures during a heatwave. Although excess seasonal deaths start to occur at approximately 25°C, for practical reasons the health heatwave alert system is based upon temperature thresholds where the odds ratio is above 1.15– 1.2 (a 15–20% increased risk). The different trigger temperatures are summarised in Annex 1, with regional variations due to the relative adaptation to heat. However, a significant proportion of excess summer deaths occur before the health heatwave alert is triggered, which emphasises the importance of long-term planning actions by local authorities and the health sector.

Trigger Temperatures

38.5°C Highest daytime temperature recorded in the UK.

52°C and 48°C – when train rails reach these temperatures a Temporary Speed Restriction (TSR) is introduced. Train speeds are reduced by 50% and 30% respectively.

33°C Tarmac Roads may begin to melt.

41.5°C and 36.2°C Temperatures recorded on the tube and on the platform during 2003 heatwave.

36°C Network Rail would be experiencing railhead temperatures of 50+°C when air temperatures of 36°C are reached. Extreme precautions would then be introduced.

24.5°C Temperature at which any excess deaths may first become apparent.

24°C (for 3 days running) – London Underground deploy hot weather notices and supply bottled water. Maintenance workers begin work to stop rails buckling. Network rail also begin additional precautions to their tracks.

APPENDIX: 5

Department Of Health Warnings (Heat-Health Watch)

Department of Health Warnings

These are the core messages to be broadcast as official Department of Health warnings alongside national and regional weather forecasts. They may be expanded or otherwise refined in discussion with broadcasters and weather presenters:

LEVEL 1: Summer Preparedness and Long-Term Planning

No warning required unless there is a 60 per cent probability of the situation reaching Level 2 somewhere in the UK within the next three days, then something along the lines of:

“If this does turn out to be a heatwave, we’ll try and give you as much warning as possible. But in the meantime, if you are worried about what to do, either for yourself or something you know who you think might be at risk, for advice go to NHS Direct Online at www.nhsdirect.nhs.uk. Alternatively ring NHS Direct on 0845 4547.”

LEVEL 2: Alert and Readiness

The Met Office, in conjunction with the Department of Health, is issuing the following heatwave warning for (regions identified):

“Heatwaves can be dangerous, especially for the very young or very old or those with chronic disease. Advice on how to reduce the risk either for yourself or somebody you know can be obtained from NHS Direct online at www.nhsdirect.nhs.uk or on 0845 4547, or from your local chemist”.

LEVEL 3: Heatwave Action / Emergency

The Met Office, in conjunction with the Department of Health, is issuing the following heatwave advice for (regions identified):

“Stay out of the sun. Keep your home as cool as possible – shutting windows during the day may help. Open them when it is cooler at night. Keep drinking fluids. If there’s anybody you know, for example an older person living on their own, who might be at special risk, make sure they know what to do.”

APPENDIX: 6

Publications and Websites

Publications and Websites

Air Quality

More information regarding air quality can be sourced at the following:

The Freephone Air Pollution Information Service

Tel: 0800 55 66 77

Sky News Air Pollution Bulletin

(which normally airs in the evening around 18:45)

Climate Change

Climate change is increasingly acknowledged to be a serious threat to population health. These impacts are highlighted in the updated report

Health Effects if Climate Change in the UK 2008

www.dh.gov.uk/en/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/DH_080702

Department of Health

Copies of heatwave information – copies of the public information leaflet and factsheets for health and social care professionals and residential and nursing care home managers can be downloaded from:

The Health Impact of Climate Change: Promoting Sustainable Communities, available at:

www.dh.gov.uk/en/publicationsandstatistics/DH_082690

MET Office

www.metoffice.gov.uk

NHS Direct

www.nhsdirect.nhs.uk

Primary Care Trust

www.nhs.uk

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