

# **The National Heatwave Plan (England)**

## **Equalities Analysis**

# The National Heatwave Plan

## Equality Analysis April 2011

### Summary

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#### 1. Issue and Context

The recent commencement of the Equality Act 2010 changed anti-discrimination law in England. The general equality duty that is set out in the Equality Act 2010 requires public authorities, in the exercise of their functions, to have due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act.
- Advance equality of opportunity between people who share a protected characteristic and those who do not.
- Foster good relations between people who share a protected characteristic and those who do not.

#### **Title: The National Heatwave Plan**

#### **Relevant Line in DH Business Plan 2011- 2015:**

The Plan outlines a 'Heat-Health Watch' system, which operates in England during the summer months. This was first launched in 2004 and is updated yearly based upon the latest available evidence. The Plan contains guidance for the health and social care sector on protecting people in vulnerable circumstances from the effects of heat and on how local authorities can keep urban areas cool.

The Heatwave Plan is consistent with and would be an important element of a suite of plans which would help achieve the Coalition Government's key priorities.

Sections from 'Freedom, Fairness, Responsibility' - The Coalition: our programme for government that relate to the aims of the Heatwave Plan for England, 2011:  
[http://www.cabinetoffice.gov.uk/sites/default/files/resources/coalition\\_programme\\_for\\_government.pdf](http://www.cabinetoffice.gov.uk/sites/default/files/resources/coalition_programme_for_government.pdf)

**Section 25: Public Health – Overall aims of the plan and actions to prevent ill-health from heat, and then to prevent hospital admission and mortality from the progression of the acute effects of heat on health.**

The Government believes that we need action to promote public health, and encourage behaviour change to help people live healthier lives. We need an ambitious strategy to prevent ill-health which harnesses innovative techniques to help people take responsibility for their own health.

**Section 10: Energy and Climate Change – Action Level 1. Preparing for heatwave: mitigating the health effects of climate change**

Through our ‘Green Deal’, we will encourage home energy efficiency improvements paid for by savings from energy bills. We will also take measures to improve energy efficiency in businesses and public sector buildings.

**Section 28: Social care and Disability – Action levels 2-4: responding to the needs of vulnerable people in the community during hot weather, with a focus on older people, those with mental illness and disability. These actions seek the integrated approach to health and social care to offset the life-threatening effects of heat on the most vulnerable including those in nursing homes.**

We will break down barriers between health and social care funding to incentivise preventative action.

**Section 22: NHS – Action levels 2-3: preventing vulnerable older people from hospital admission due to the acute effects of heat on health.**

We will help elderly people live at home for longer through solutions such as home adaptations and community support programmes.

The publication of the Heatwave Plan would also support implementation of the Business Plan 2011-2015 which sets out the vision and priorities for the Department. Department of Health published in November 2010, which identifies:

**B. Coalition Priorities - Other major responsibilities: Help prepare for emergencies**

- Work with other departments and public services to ensure that we are prepared for emergencies and other critical events

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_121393](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_121393)

There are two particular domains in the proposed Public Health Outcomes Framework (consultation ended 31 Mar 2011) which are related to development of a robust Heatwave Plan (**DH. *Healthy Lives, Healthy People: Transparency in Outcomes. Proposals for a Public Health Outcomes Framework. A Consultation Document.* DH. Dec 2010.**

[http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH\\_122962](http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH_122962)

**Domain 1: Health Protection and Resilience: Protect the population’s health from major emergencies and remain resilient to harm.** The activities to deliver this

domain can most appropriately be co-ordinated nationally by Public Health England, which will have oversight of population health protection and resilience across the country. Local authorities will want to contribute to these outcomes particularly in their role in leading local resilience arrangements, and in providing surveillance information.

### **Proposed Indicators**

Comprehensive, agreed inter-agency plans for a proportionate response to public health incidents are in place and assured to an agreed standard. These are audited and assured and are tested regularly to ensure effectiveness on a regular cycle.

**Domain 5: Healthy life expectancy and preventable mortality: *Preventing people from dying prematurely.*** At the local level, improvements in these indicators will be driven by local health and wellbeing partnerships with shared responsibility across the NHS, public health and care services. Healthy life expectancy is considered as an over-arching outcome under vision and not repeated in this domain. Therefore, the indicators below focus on the causes of premature mortality. Some delivery will be for other local partners to prevent seasonal mortality for example, or Public Health England locally (currently Health Protection Units) on communicable disease. National contribution across Government, the NHS Commissioning Board and other national bodies in setting policy or to avoid mortality as a result of major emergencies for example.

### **Proposed Indicators**

Excess seasonal mortality

**Figure 1 Summary of the National Heatwave Plan**

**LEVEL 1**

**Long-term planning**

– All year

**Summer preparedness**

– 1 June – 15 Sept

**Long-term planning**

- Increase trees and green spaces
- External shading
- Reflective paint
- Loft and wall insulation
- Water features
- Reduce internal energy and heat

**Summer preparedness**

- Identify high-risk individuals
- Include risk in Common Assessment Framework and Care Programme Approach
- Install thermometers
- Identify cool areas
- Increase awareness in staff



**LEVEL 2**

60 per cent risk of heatwave in 2-3 days\*

**Alert and readiness in community**

- Public media messages
- Increase advice to health and social care workers
- Check high-risk people  
Have visitor/phone call arrangements in place

**Alert and readiness in care homes and hospitals**

- Monitor indoor temperatures four times a day
- Prepare cool areas
- Ensure sufficient staffing
- Identify high-risk people
- Sufficient cold water and ice



**LEVEL 3**

Heatwave temperature reached in one or more regions

**Heatwave Action in community**

- Media alerts about keeping cool
- Visit/phone high-risk people
- Look out for neighbours
- Reduce unnecessary travel
- Review safety of public events

**Heatwave Action in care homes and hospitals**

- Monitor indoor temperatures four times a day
- Maximise external shading and night-time ventilation
- Ensure cool areas do not exceed 26°C
- Provide regular cool drinks

**LEVEL 4**

Heatwave for four or more days in two or more regions

**EMERGENCY**

If severe or prolonged heatwave affecting sectors other than health

**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 on a prediction, there may be jumps between levels. Following Level 3, wait until temperatures cool to Level 1 before stopping Level 3 actions.

For further information, see the National Heatwave Plan and supportive guidance for health and social care, and public information leaflets, at [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_126666](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_126666)

**The National Heatwave Plan** forms part of the Department of Health's Adaptation Plan to Climate Change as a statutory requirement of the Climate Change Act.

**The Climate Change Act 2008** - makes the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. It also creates a legal framework for all statutory agencies to adapt to climate change.

<http://www.statutelaw.gov.uk/legResults.aspx?LegType=All+Legislation&title=climate+change&Year=2008&searchEnacted=0&extentMatchOnly=0&confersPower=0&blanketAmendment=0&TYPE=QS&NavFrom=0&activeTextDocId=3539938&PageNumber=1&SortAlpha=0>

As the impacts of climate change increase, heatwave planning becomes increasingly more relevant, however, it is a relatively new area with little evidence of effective practice or high risk populations. Therefore, since the establishment of the national heatwave plan in England in 2004, a national seminar is hosted by the Health Protection Agency to improve upon the evidence base for updating the subsequent years' heatwave plan. Below summarises the evidence presented at the seminar held in february2011; this is followed by key changes made to this years heatwave plan, (2010).

### **Heatwave Seminar 2011**

This was the 5<sup>th</sup> annual heatwave seminar run by the Health Protection Agency (HPA) and the Department of Health (DH). The 2011 seminar was smaller than previous years. It focussed on cross governmental working, reviewed the similarities and differences between the Heatwave Plan and the draft Cold Weather Plan, the use of on-line death registrations to provide rapid mortality data and the 2010 summer heatwave.

The seminar began with representatives from the HPA, DH and the Cabinet Office, describing progress on Heatwave planning, the aims of the days and what the future might look like.

Graham Bickler (HPA) discussed how the Heatwave Plan for England is now regarded as an example for heatwave planning throughout Europe. The plan has changed and been improved over the previous years and the focus now is how information is communicated to the public and the health and social care sectors, and how this could be evaluated.

Damian Basher (DH) talked about how the Heatwave Plan will have to adapt to the new organisational landscapes of the health sector. There is also a need for Heatwave scenarios to be tested within Olympic planning and for overall resilience.

Stephen Barnes (Cabinet Office) welcomed the fact that this was the second year the Heatwave Plan had gone beyond DH and had included other government organisations. This was important at all levels of the Heatwave Plan

but was essential for an effective response at level 4 and above. He also noted the importance of a draft Cold weather plan, in respect to understanding and improving on the tens of thousands of excess winter deaths estimated to occur in England each winter.

### **2010 summer**

The Met Office described the 2010 summer. There was a warm period from mid to the end of June where the heat-health warning system was activated to level 2 (60% chance of temperature reaching threshold levels on two consecutive days). Level 3 was not activated. When level 2 was activated, the HPA requested the General Registrar's Office (GRO) for daily data on death registrations in order to determine if there was any increase in deaths over the period of warmer weather. Although not conclusive there appeared to have been an increase in mortality over the period, however this occurred prior to the days where level 2 was activated. Overall the GRO system, taking into account the delay of approximately 2 weeks to have robust data, was felt to be extremely useful in the context of monitoring during a heatwave. Although this is unlikely to result in any immediate change to public health action it will provide intelligence for potential operational issues and provide information to the Government and Health organisation on the health impacts observed.

It is known that there can be excesses in morbidity and mortality associated with warmer temperatures which have not resulted in an activation of the heat health warning system to level 2 or above. NHS Direct and GP consultation data also showed this over the 2005 summer, and wider heat epidemiology supports this finding. This raised the question as to whether the thresholds are set too high and if there is a need to increase communication on potential risks to the vulnerable and possibly the general population.

The important differences between the risks of heat and the risks of heatwaves were discussed. As the heatwave plan describes, during times of a heatwave the vulnerable populations become more at risk of serious health effects. The entire summer period is already Level 1: "Increased summer awareness" of the heatwave plan. Including more communication to the public during level 1 during this time, for example through weather forecasts, would be low cost, have no opportunity costs and high coverage. This may result in health benefits during times of warmer weather that don't reach level 2 or above and also during heatwaves.

## **2. Evidence – Health impact of heatwaves and risk factors**

Below outlines the main effects of heat upon health and a summary of what is known of risk factors.

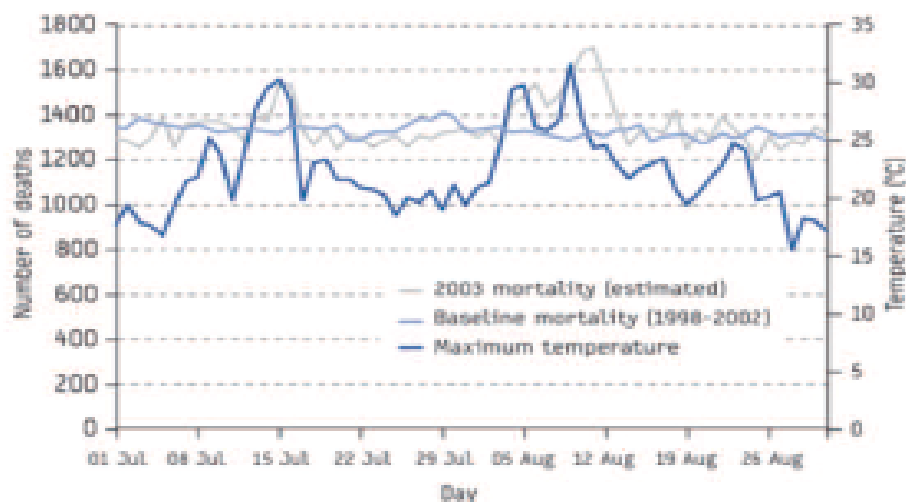
## The effects of heat on health

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 23°C are associated with excess summer deaths, with higher temperatures being associated with greater numbers of excess deaths (see figure 3); at 27°C or over, those with impaired sweating mechanisms find it especially difficult to keep their bodies cool.

Figure 3. Maximum Central England Temperature (CET) and daily mortality, England and Wales, July and August 2003.



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 the 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 cardiovascular system. In order to keep cool, large quantities of extra blood are circulated to the skin. This causes strain on a 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 antihypertensive. Ozone and PM10s also increase the level of cardiovascular-related death.

### **High risk factors**

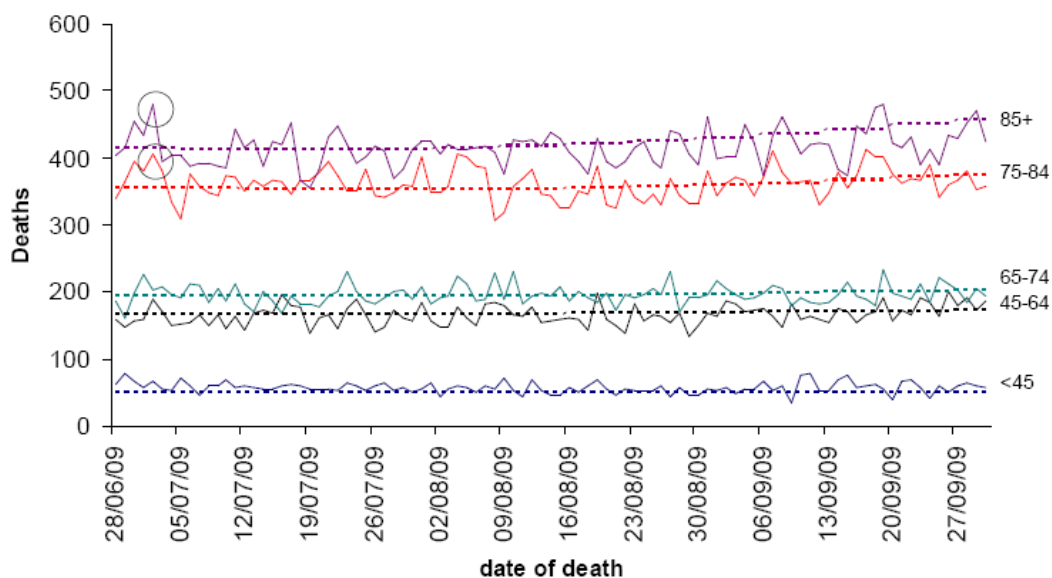
There are certain factors that increase an individual's risk during heatwave.

These include:

- Older age: especially women over 75 years old, or those living on their own who are socially isolated, or in care home.
- Chronic and severe illness: including heart conditions, diabetes, respiratory or renal insufficiency, Parkinson's disease or severe mental illness. Medications that potentially affect renal function, the body's ability to sweat, thermoregulation or electrolyte balance can make this group more vulnerable to the effects of heat.
- Inability to adapt behaviour to keep cool: having Alzheimer's, a disability, being bed bound, too much alcohol, babies and the very young.
- Environmental factors and overexposure: living in urban areas and south facing top-floor flats, being homeless, activities or jobs that are in hot places or outdoors and include high levels of physical exertion.

In a moderate heatwave, it is mainly the high-risk groups mentioned above who are affected. However, during an extreme heatwave such as the one affecting France in 2003, normally fit and healthy people can also be affected.

## Age Breakdown of deaths in England and Wales – Summer 2009



### 3. Delivery and implementation of preventive measures

Below outlines the key elements of delivery of the national heatwave plan:

#### 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.
- 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 local NHS to account for the 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 plan, 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 multi-agency planning to adapt to and reduce the impact of climate change, including 'greening the built environment', increasing shading a round and insulation of buildings, increasing energy efficiency and reducing carbon emissions.

This plan sets out what needs to happen before and during a severe heatwave in England. It includes specific measures to protect at-risk groups.

### **Summary of actions at the 4 levels of the heatwave plan:**

#### **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 on 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 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.

### **Responsibilities of different sectors:**

The national heatwave plan outlines specific responsibilities for local authorities, social care and the health sector at each of the four levels. Additionally, further guidance is available on the web for the health sector and for care homes.

## **4. Improving understanding and responses to heatwaves**

Public facing information is made available just before and during a heatwave, in the form of media announcements, information on NHS choices and leaflets are available at community venues like pharmacists and GPs. Communications materials have undergone marketing analysis to ensure messages are tailored appropriately for the higher risk groups.

The annual evaluation of the heatwave plan aims to improve the evidence base for responding to heatwaves – evaluating both process and outcome factors, as well as issues raised by stakeholders that needed greater clarity. For example, previous years seminars have focused on the following areas:

- Clarity of risk factors and high risk groups
- Patterns of heatwaves and their impact upon health
- How to keep buildings and urban areas cool
- The interaction and implications of poor air quality during heat

Key learning points have been incorporated into the updated annual heatwave plan.

**Assessment of the needs of groups and communities as well as those who may use services.** Those involved in needs assessment, as well as planning and implementation, of prevention should be culturally competent and aware of the different needs and concerns of those affected by heatwaves.

Designing and developing approaches also needs an awareness of the cultural differences which can inform and reinforce community approaches that support our response to heatwaves.

This may be especially important for children and people from LGBT groups, or certain ethnic groups who might feel unaccepted and/or unable to receive support from mainstream agencies, if they are in a violent or abusive environment or relationship and have limited options for escaping it.

### **Mechanisms to promote the prevention of the impact of heatwaves and ensure equitable access and delivery**

- There is a range of statutory and legal mechanisms that directly support equality and human rights, especially the rights and recognition of minority groups, as well as inequalities to tackle gender and race and address socio-economic inequalities.
- Use existing mechanisms to improve the identification of the scope and impact of heatwaves amongst groups with higher risk (e.g. people with disability, children,

women and girls in certain BME communities) and those in marginalised and discriminated populations( e.g. people in LGBT communities/groups). This can include Joint Strategic Needs Assessment.

- Use statutory mechanisms that promote adaptation plans and equality as well as commissioning and needs assessment to ensure equity of access and delivery for all groups in all services and approaches.
- Involve people from marginalised groups, service users and a range of community sources to plan and evaluate interventions and approaches.
- Further research on risk factors and cost effective measures for reducing risk is needed. Additionally, further research needs to take into account the different levels and impacts of heatwaves on people from discriminated and minority groups and vulnerable populations. For example, assessing the effectiveness of targeted interventions on known high-risk groups, including older women, those with chronic illnesses, serious mental illness and young children. Additional research is needed on whether heatwaves differentially affect people with different ethnicity, sexual orientation and gender identity as well as people with a range of different disabilities, including physical, psychological and learning disabilities.

## **5. A Human Rights based approach to Heatwave Planning**

### **Human Rights**

'Human rights' are the basic rights and freedoms that belong to everyone, including from all sectors of society. Ideas about human rights achieved strong international support following World War II and in 1948, the United Nations adopted the Universal Declaration of Human Rights to protect future generations

The Universal Declaration sets out fundamental rights and freedoms based on core principles like dignity, equality and respect and inspired a range of international human rights treaties. They formed the basis for the European Convention on Human Rights in 1950 which protects the human rights of people in countries that belong to the Council of Europe, including England

**The Human Rights Act 1998**The Human Rights Act 1998 made these rights part of our domestic law. It applies to all public authorities (such as central government departments, local authorities and NHS Trusts) and other bodies performing public functions (such as private companies operating prisons).

### **Can human rights ever be restricted?**

Some human rights – like the right not to be tortured – are absolute. However, most human rights are not absolute. Some of these rights can be limited in certain circumstances, as set out in the specified Article of the European Convention on Human Rights. For example, your right to liberty can be limited only in specified circumstances such as if you are convicted and sentenced to a prison term. Other rights can only be

restricted when certain general conditions are met, for example where this restriction is necessary to protect the rights of others or in the interests of the wider community

## **The Department of Health**

The Department of Health is committed to applying the following six principles of Human Rights

- the human Rights Act is a corner-stone of our constitutional settlement
- the values of fairness, respect, equality, autonomy and dignity underpin the Act
- these human rights principles complement existing value systems such as the public service ethos and equality of opportunity
- human rights principles can contribute to improving public services
- the human rights framework is useful in addressing the challenges of public service provision and
- a human rights approach to public service delivery will constitute best practice at the same time as amounting to compliance with the law
- The Department of Health is committed to implementing the Equality Act 2010 which changed anti-discrimination law in England in a manner consistent with human rights legislation. .

## **The Equality and Human Rights Commission**

The Equality and Human Rights Commission (EHRC), which has UN accreditation as Britain's first human rights institution, carried out a Human Rights Inquiry, which amongst other issues, looked at the value of applying human rights in public services. Several healthcare service providers gave written and oral evidence.

The Inquiry concluded: *"In the first major study into how far public sector authorities have adopted a rights based approach to delivering services, the Inquiry found that where human rights were put at the heart of the delivery of public services, they delivered successful results"* (EHRC 2009).

## **How do human rights work?**

Human Rights and equalities are inextricably linked. They derive from the same fundamental principles, equal respect for the inherent dignity of every person. A Human Rights approach treats individuals as a whole person and seeks to address their requirements holistically. At the heart of human rights is the belief that everybody should be treated equally and with dignity – no matter what their circumstances.

The Equalities and Human Rights Commission identify 15 rights protected by the HRA 1998, however separate areas of interest more generally into

- being treated fairly and with dignity,
- taking part in the community,
- living the life you choose
- and being safe and protected from harm.

All in all, this legislation places a requirement on public bodies to assess their current provision, identify the needs of their 'customer' base and then work with those people to develop the right services, anticipating needs and differentiating the interventions in order to achieve equity of access, experience and outcome.

### **Implications for heatwave planning – Information sharing between relevant agencies and communities**

As with assessing need, this includes statutory and voluntary agencies, employers as well as specific groups other community sources. Third Sector agencies may have greater contact with groups who are particularly vulnerable or who are not accessing support. These groups can include those from Lesbian Gay and Bisexual groups, people with disabilities and those from different ethnic groups including refugees and asylum seekers. The annual heatwave seminar brings together key stakeholder partners with an interest in heatwave planning, including:

- The Health Protection Agency
- The DH and Other Government Departments
- Academic Institutions
- Emergency planners in the NHS
- Local Authority representatives regarding social care and urban planning
- The Met Office
- The Environment Agency
- Non- Governmental Organisations

The 2010 heatwave seminar aimed to address a small number of technical issues on heatwave epidemiology and monitoring. Future broader seminars will include vulnerable and disadvantaged groups particularly in relation to communications.

However, the Heatwave Plan broadly reflects known population groups that are known to be more at risk from heat. This includes age, chronic and severe illness, those vulnerable individuals that have a reduced capacity to adapt and those exposed to specific environmental factors and over exposure. The Plan's approach to communication is twofold; the first is a whole population approach based on weather forecasts, the second a more targeted approach to vulnerable groups. The targeted approach is aimed at those that have a greater risk and can be reasonably easily targeted. Specific demographic groups, such as ethnic minority populations, are not in themselves targeted but members of these groups with specific vulnerabilities will be targeted within the plan because of their known risk factors (above). At this stage there

is no evidence to suggest that a more targeted approach based on demographics such as ethnicity is required.

The below section outlines the known negative and positive impacts of heatwave planning on the key vulnerable groups.

## **6. Assessment of impacts and responses of heatwaves upon discriminated and minority groups**

The below section outlines what is currently known from the evidence base of the negative impacts of heatwaves upon different minority and discriminated groups. Additionally, where known risks are understood, responses in the heatwave plan and supportive documents are outlined.

<p><b>Age:</b> Those over the age of 75 are especially at risk of the impacts of heatwaves – the older age groups being at increasing risk. Additionally, babies and young children are at increased risk. The heatwave plan highlights this risk and targets communications materials and guidance for health and social care workers to address this increased risk.</p>
<p><b>Disability:</b> Those with serious physical and mental illness are identified as high risk groups from previous heatwave evaluations (mainly from France and the USA). The main mechanism is likely to be the increased exertion placed upon cardio-vascular and respiratory systems (the main causes of excess death); and also from increased amounts of medication use that negatively affects thermo-regulation. A proportion of increased risk is thought to be related to the inability to move from harm and protect oneself from over-heating. Information in the heatwave plan and supportive guidance outlines what is known regarding risk factors and underlying processes to inform professional practice and communications materials.</p>
<p><b>Race:</b> There is no current evidence to indicate whether or not people from different ethnic backgrounds are more or less affected by increased temperatures. However, it is known that there is a disproportionate number of people from Asian communities who have diabetes and cardiac conditions which are factors in heat related deaths. Further research may be able to indicate numbers affected and then further action can be identified if required.</p>
<p><b>Gender (including transgender):</b> older women are especially at higher risk, compared to older men. This is thought to be due to differences in the decline of thermo-regulation mechanisms, and possibly due to variations in behaviour. Nothing is known on the impact on the transgender community.</p>
<p><b>Religion or belief:</b> Different clothing and the need to cover the body more fully in different religions could impact on babies, children and older people. Advice and information should be given in a culturally sensitive way.</p>



**Sexual orientation:** There is no research to indicate that this group is affected differently from the general population. However, it is known that older lesbian, gay and bisexual people do not access services as readily as other groups and therefore consideration should be taken as to how these groups will be informed.

**Socio-economic disadvantage:** Urban areas are more affected by heat than rural areas (due to the urban heat-island effect – creating higher temperatures in urban areas). Most areas of socio-economic disadvantage occur in urban areas, especially in areas with less access to green space, which has a cooling effect. Details are provided in the heatwave plan of the urban heat island effect and approaches to reduce this impact.

**Pregnancy and Maternity:** Most women will be pregnant for some or all of the summer and exposure to heat during the summer months is a normal process for most pregnancies. General advice to all pregnant women to drink plenty of water, get adequate rest and avoid unnecessary exertion become even more important in the hotter months. Pregnant women should generally avoid spending too much time in the heat and sun.

**Carers:** as many carers will be older people themselves, often over 75, they too will be at especial at risk of the impacts of heatwaves. A key element of the Heatwave Plan includes raising awareness and working with carers to ensure that they understand the risks of excessive heat for themselves and the person they are caring for and support simple steps to reduce risks of excessive heat exposure and for informal carers to contact the GP if there are concerns about an individual's health.

## 7. Examples of the potential wider positive impacts of interventions for reducing the impact of heatwaves

### **Create safe, green spaces.**

Contact with natural environments, for example by increasing access to parks, allotments or environmental volunteering can **improve physical and mental health**, for example, by increasing physical activity, social interaction and reducing stress and aggression, (Bird, 2007). Additionally, increasing urban green space and trees has the following effects:

**Reduces flooding** each year 1.3 million trees would catch 7 billion tons of rainwater reducing the load on storm water drainage, flooding and mental health of flood victims (McPherson et al 2005)

**Reduces noise** a belt of trees can reduce noise levels by as much as 6-8 decibels for every 30 metres width of woodland (Leonard 1970).

**Reduces Pollution** each year 1.3 million trees remove 2535 tonnes of pollutants from the air (McPherson et al 2005).

**Reduces urban heat islands** – predictions for urban temperatures over the next 70 years show that if there is less than 10% urban green cover, urban temperatures will increase by about 8.2°C, whilst more than 10% of green cover will keep temperatures to only 1°C above current temperatures; (Gill et al 2007).

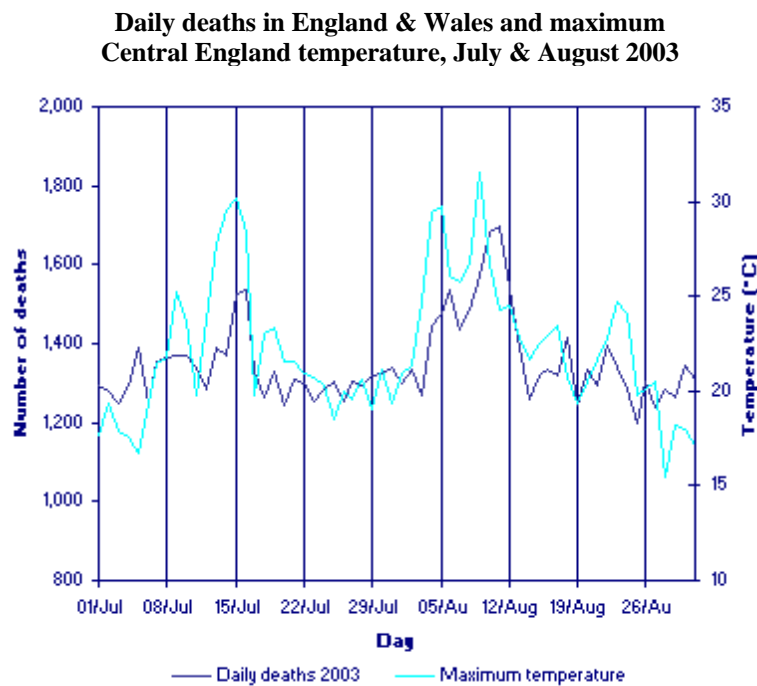
A study including the whole population in England, (Mitchell, 2008) showed populations that are exposed to the greenest environments also have the lowest levels of health inequality related to income deprivation compared to areas with low levels, for example:

For every 10% increase in green space there was a reduction in health complaints equivalent to a reduction of five years of age (De Vries 2001) Increased five-year survival of senior citizens was linked with increased space for walking, nearby parks and tree-lined streets. These effects were independent of socio-economic status (Tanaka A et al 1996).

**Keep warm, keep cool, keep well.**

Insulation keeps warmth indoor in winter and heat out in summer so reducing the risk of cold and heat-related illness and death. Additionally, an average of 1.2 tonnes of carbon is saved per household/ year for every **Warmfront intervention** – see below for more information.

Currently, there are approximately 25,000 excess deaths each winter. Warmer winters, due to climate change, are likely to gradually reduce this number, however excess summer deaths due to heatwaves are forecast to increase. It has been estimated that by 2050, every second summer will be similar to the conditions experienced during the 2003 heatwave, where over 2,000 extra deaths occurred.



The impact was greatest in the southern half of England, particularly in London, where deaths for all ages were 42 per cent (616) above the average. In all regions, deaths for the 75 and over age group were above average levels. In the London region, deaths in the 75 and over age group were 59 per cent (522) above the average. The graph to the left shows how the variation in daily deaths closely followed the peaks in maximum temperature. This also shows that deaths from excess heat occur more quickly following a peak than excess winter deaths, which often lag by 3-5 days

behind a particular cold snap.

There are two factors relating to climate change that are affected by installing appropriate insulation in households:

- **Mitigation** – the improved insulation will improve the energy efficiency of the house and will reduce the CO<sub>2</sub> and help towards reducing the levels of greenhouse gas emissions
- **Adaptation** – helping future-proof existing houses to reduce the health impact of excessive thermal gain in the warmer summers forecast due to climate change (see below).

Protecting from excess cold also protects against excess heat and is cost effective. It helps improve health due to reducing fuel poverty, maintaining warmer indoor temperatures in the winter and cooler temperatures in the summer.

A range of measures were recommended\* to retrofit homes to ensure that excessive solar gain in the summer was avoided. The report specifically highlighted that some of these measures, including cavity wall and loft insulation, were also of direct benefit now and in 2050 to retain warmth in the home during the cold winter months.

### Cost of Measures for Adapting Houses for Climate Change

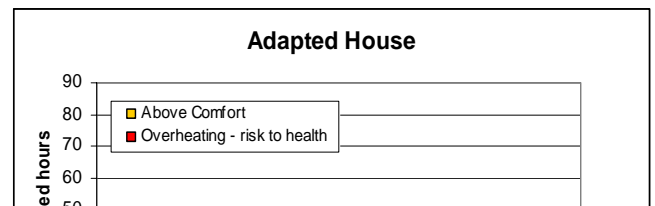
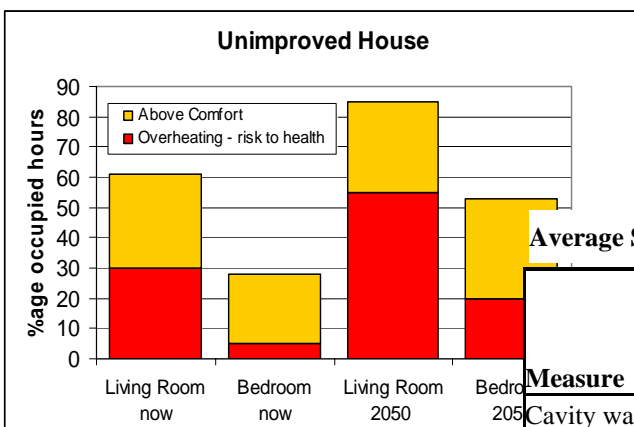
<b>Measures which aid overheating only</b>	
• Natural ventilation through windows	£ 0
• Awnings on all south/west windows	£1,700
• Ceiling fans (DIY)	£ 545
• Wood or tiles not carpets on ground floor	£2,100
• Paint façade to increase reflectivity	£3,750
<b>Measures which also benefit winter warmth</b>	
• Improve roof insulation	£ 199
• Cavity wall insulation where cavities are present	£ 199
• Replace single-glazing with double-glazing, low-e coatings	£5,000

Costs based on figures from "Your Home in a Changing Climate, except roof and cavity wall insulation which are based on current averages for costs through able to pay insulation schemes.

\* See Your Home in A Changing Climate – Retrofitting Existing Homes for Climate Change Impacts

### Adaptation

The two graphs below identify conditions within an average (1930s semi-detached) house in the month of July, both for now and in 2050, looking at the percentage of the month where internal temperatures would exceed specific thresholds (Living room being above comfort at 25°C and overheating at 28°C, Bedroom 23°C and 26°C), comparing where the measures recommended above had, or had not been, installed.



### Average Saving of CO<sub>2</sub> per installed measure

Measure	Lifetime of measure (years)	Annual CO <sub>2</sub> savings (tonnes)	Lifetime CO <sub>2</sub> savings (tonnes)
Cavity wall insulation	40	1.74	69.60
Loft insulation – Full	40	1.00	40.00
Loft insulation – top up	40	0.25	10.00
Replacement boiler and controls	12	2.83*	33.96
Gas Central Heating	12	2.58*	30.96
Low energy light bulbs	17.7	0.04	0.71
Hot water cylinder insulation	10	0.156	1.60
Draught-proofing	20	0.16	3.20

## Mitigation

The measures installed in fuel poor homes are designed to increase the energy efficiency of the property and reduce the cost of providing affordable heat. However, because of this, many energy efficiency measures also have an estimated saving of CO<sub>2</sub>. The table of the right shows how long each type of installed measure is expected to last, the annual estimated saving, and the total CO<sub>2</sub> saving brought about by the measure. Efficient modern central heating can save more CO<sub>2</sub> per year, but will not last as long as insulation measures, which have a higher overall saving.

**Estimated Savings in CO<sub>2</sub> due to Warm Front work brought about by health related referrals in 2007-8**

Region	CO <sub>2</sub> Savings (tonnes)	
	Annual	Lifetime
East Midlands	741	15,404
East Anglia	1,104	27,851
London	1,269	25,124
North East	425	7,814
North West	5,055	113,768
South East	1,218	30,737
South West	2,176	54,165
West Midlands	2,240	46,073
Yorkshire	2,136	44,469
<b>Total</b>	<b>16,365</b>	<b>365,404</b>

These savings will reduce CO<sub>2</sub> build-up in the atmosphere and helps mitigate against the effects of climate change. The graph to the left shows the estimated CO<sub>2</sub> savings brought about in each government region due to the health related referrals to Warm Front in 2007-8. On average, there is a reduction in carbon emissions in the households assisted by Warm Front, from 7.1 tonnes per year to 5.9 tonnes per year, equalling total annual savings of 1.2 tonnes of CO<sub>2</sub> per year for those homes improved.

## Actions Taken

**1. The national Heatwave Plan 2011 with its amendments, will be re-launched spring 2011. It is proposed that the full package of publications to be placed on the DH website will include:**

- **Heatwave Plan for England: 2011**
- CMO and DH Directors cover letter- **HEATWAVE PLAN**

In addition there are three 'factsheets' which give advice and guidance for both professionals and the general public which will be placed on the DH Website at the launch. We have reviewed these documents and they are not being amended, as the information is still valid:

- SUPPORTING VULNERABLE PEOPLE BEFORE AND DURING A HEATWAVE: Advice for health and social care professionals
- SUPPORTING VULNERABLE PEOPLE BEFORE AND DURING A HEATWAVE: Advice for care home managers and staff
- LOOKING AFTER YOURSELF AND OTHERS DURING HOT WEATHER – THE LATEST ADVICE

## 2. Summary of key changes to the National Heatwave Plan 2011

There are only a few changes to this year's Heatwave Plan, to reflect changes to some structures and organisations since 2010.

- Information has been changed to reflect the closure of the Regional Government Offices as at 31<sup>st</sup> March 2011 and other changes to some structures and organisations since 2010.
- There are some detailed changes to Box 7 on p30 of the Heatwave Plan as to the wider benefits of Green Spaces.
- As in previous years, information leaflets both for the public and professionals have been made available to be downloaded from the DH website. The information content and advice given in these leaflets remains the same as for 2010. The main change this year is one taken in line with general policy which is that all publications should be online only, except in exceptional circumstances when, there might be accessibility or inclusion issues. In 2010, we printed copies of the public information leaflet, “Looking After Yourself and Others During Hot Weather” and sent these, without request, to a range of NHS institutions. Additional leaflets were available on request from either professionals or the public. For 2011, we believe that as the Plan is now mature, it is reasonable to offer electronic access as the norm and make access to the leaflets ‘on request’ for both professionals and the public. However, we recognise that some of the vulnerable groups who might be most affected by a heatwave, eg older people, might also be those with least access to computer resources to download the advice. Hence, we are proposing to print another 100,000 leaflets to add to the nearly 50,000 unused leaflets we have from 2010, to ensure that we can meet such demand from GPs, pharmacists, other institutions and the public if they would like them. Our dissemination and communication strategy already noted will seek to ensure that Heatwave Plan is widely communicated using a variety of channels to ensure maximum publicity to health and social care professionals as well as the general public, and to publicise the availability of the hardcopy leaflets for those who want them.

### **3. Dissemination / Communication Plan**

Our dissemination and communication strategy will seek to ensure that Heatwave Plan is widely communicated using a variety of channels to ensure maximum publicity to health and social care professionals as well as the general public, and to publicise the availability of the hardcopy leaflets for those who want them.

Our absolute priority in terms of raising awareness with professional is to fund the Met Office Heat Health Watch. Without this, the Plan has little impact. Evaluations have stressed the importance of this alerting system for professionals which triggers a series of actions based on the Alert Level as described earlier.

Raising awareness of the Plan for both professionals and the public is based on a number of other actions we will be taking:

- **Awareness raising of the Plan and information leaflets:** we will actively disseminate the publication of the plan using the full variety of publication channels available to us: eg DH website; NHS Choices; emergency planning routes; and the full range of DH publications which it sends to various staff groups, including social care and public health colleagues. We will advise them of the key amendments and weblinks to materials and ensure that they know how to get the public information leaflets if they do require them for their clients. The Plan will be accompanied as previously by a letter signed jointly by the CMO, CNO, NHS Chief Executive. However, for the first time this year, to emphasise the joint nature of the advice, the Director General for Social Care, Local Government and Care Partnerships will also co-sign the letter.
- **Greater Communication to the General Public over the entire Summer:** one of the recommendations arising from this year's workshop was that the Heatwave plan should include greater communication to the general public over the entire summer (not just during level 2 or above). We are will be working closely with the MET office over the summer to further raise awareness in a number of ways:
  - **Plan Launch:** to organise joint press activity around the Press launch to help raise awareness that the Plan is in place with a focus on what people can do all of the time to protect themselves, in addition to what people can do when the weather is very hot. It could point people to the online guides and provide some basic signposting to where to go for further advice;
  - **Hot Weather PR activity:** Often the Met Office will run press releases when a period of warm / hot summer weather, is expected. These are usually only weather based, but from time to time they could include some messaging about the risks of hot weather, or a complimentary press release could be issued from the DH;
  - **During Long periods of warm / hot weather:** Similar PR activity could be initiated during long periods of warm, or hot weather, when Heatwave thresholds are not likely to be met, such as those encountered during June 2010. If the DH is concerned that this weather could cause health impacts, such as in response to mortality surveillance, then appropriate press release could be issued.

We will liaise with major voluntary agencies, such as AgeUK and other groups working with vulnerable groups to ensure that they are aware of the material which is available and that the public information leaflets can be provided if requested. The Plan and associated leaflets will be made available in large print format and can, if requested be translated into a variety of other language formats in line with Dept of Health policy.

## 8. Action plan

<b>Category</b>	<b>Actions</b>	<b>Target date</b>	<b>Person responsible and their Directorate</b>
<b>Involvement and consultation</b>	The 2010 heatwave seminar aimed to address a small number of technical issues on heatwave epidemiology and monitoring. Future broader seminars will include vulnerable and disadvantaged groups particularly in relation to communications.	March 2012	Carl Petrokofsky
<b>Data collection and evidence</b>	Further research is needed to provide more understanding of risk factors and risk groups. Further work will be undertaken as data becomes available.	March 2012	Carl Petrokofsky
<b>Analysis of Evidence and Assessment</b>	Ongoing review of the evidence will be undertaken by DH with key agency and academic partners and review at the annual seminar next year	March 2012	Carl Petrokofsky
<b>Monitoring Evaluating and Reviewing</b>	Ongoing review of the evidence will be undertaken by DH with key agency and academic partners and review at the annual seminar next year	March 2012	Carl Petrokofsky
<b>Transparency (including publication)</b>	It is proposed to adopt a web-based publication strategy for the Heat Wave Plan 2011	May 2011	Carl Petrokofsky

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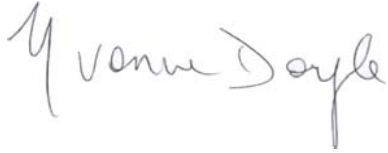
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<b>For the record</b>
<b>Name of person who carried out the EqIA: Carl Petrokofsky</b>
<b>Date EqIA completed: May 2011</b>
<b>Name of Director//Director General who signed the EqIA: Dr Yvonne Doyle</b> 
<b>Date EqIA was signed: May 2011</b>
<b>GN:</b> These details are for the record only, and <b>not</b> for publication. All EqIAs must be signed off at Director level before they are published.