

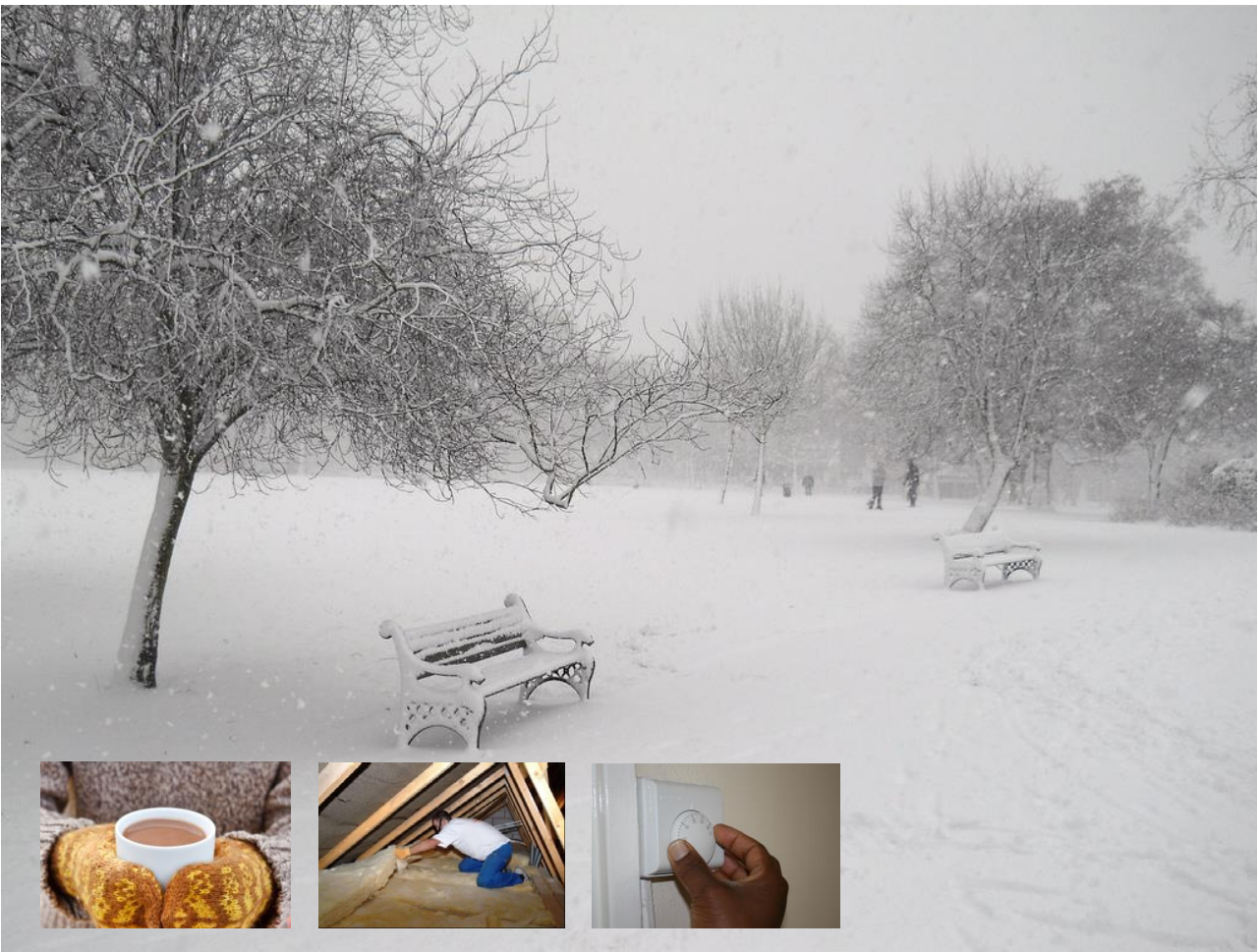


Public Health
England

NHS
England

The Cold Weather Plan for England

Protecting health and reducing harm from cold weather



Local
Government
Association


Met Office

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Foreword

Since the publication of the first Cold Weather Plan for England in 2011, the impact of cold weather on health has been recognised. There are too many avoidable deaths each winter in England primarily due to heart and lung conditions from cold temperatures rather than hypothermia. The reasons more people die in winter are complex and interlinked with inadequate heating and poorly insulated housing and health inequalities as well as circulating infectious diseases, particularly flu and norovirus, and the extent of snow and ice.

The winter period not only sees a significant rise in deaths but also a substantial increase in illnesses. The Cold Weather Plan for England therefore helps to raise awareness of the harm to health from cold, and provides guidance on how to prepare for and respond to cold weather. It is now clear that in an average winter, most of the health burden attributable to cold occurs at relatively moderate mean outdoor temperatures (from 4-8°C depending on region). This is why we must ensure our responses include year round and winter through actions, as well as emergency responses to extreme winter weather, to protect the vulnerable in our society, as described in this plan.

The Cold Weather Plan is complemented by new NICE Guidance on Excess winter deaths and morbidity and the health risks associated with cold homes. Both documents offer strategic and practical recommendations for the NHS, public health, social care and other community organisations, to support vulnerable people who have health, housing or economic circumstances that increase their risk of harm. Communities and civil society can also help their neighbours, friends and relatives to protect against avoidable harm to health in winter.

To inform and encourage action, the Public Health Outcomes Framework, first published in January 2012, includes indicators to reduce excess winter deaths and address fuel poverty. Strong local leadership and partnership working at all levels across sectors is therefore vital to tackle the range of causes and reduce the number of 'excess' deaths that are observed each winter.

Cold related deaths represent the biggest weather-related source of mortality. Although temperatures are gradually rising with climate change, cold weather deaths are still expected to be high by 2050, due to the ageing and increasing population. So we are going to need the guidance in these pages to protect the public from the effects of cold for many years to come.



Chief Medical Officer
Department of Health

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List of abbreviations

A&E	Accident and emergency
CCGs	Clinical commissioning groups
CCS	Civil Contingencies Secretariat
CO	Cabinet Office
VCS	Voluntary and community sector
CWP	Cold weather plan
DCLG	Department for Communities and Local Government
DECC	Department of Energy & Climate Change
DH	Department of Health
EPRR	Emergency preparedness, resilience and response
EWD	Excess winter deaths
GP	General practitioner
HHSRS	Housing Health and Safety Rating System
HIV	Human immunodeficiency virus
HWB	Health and wellbeing board
JHWS	Joint health and wellbeing strategy
JSNA	Joint strategic needs assessment
LHRP	Local health resilience partnership
LPG	Liquid petroleum gas
LRF	Local resilience forum
LSHTM	London School of Hygiene and Tropical Medicine
MECC	Making Every Contact Count
NAP	National Adaptation Programme
NEA	National Energy Action
NICE	National Institute for Health and Care Excellence
NSWWS	National Severe Weather Warning Service
ONS	Office for National Statistics
PHOF	Public Health Outcomes Framework
PIRU	Policy Innovation Research Unit
PWS	Public Weather Service
RED	Resilience and Emergencies Division (DCLG)
SCG	Strategic co-ordination group
TIA	Transient ischaemic attack
WHHP	Warm Homes Healthy People

Executive summary

The Cold Weather Plan for England is a framework intended to protect the population from harm to health from cold weather. It aims to prevent the major avoidable effects on health during periods of cold weather in England by alerting people to the negative health effects of cold weather, and enabling them to prepare and respond appropriately.

It recommends a series of steps to reduce the risks to health from cold weather for:

- the NHS, local authorities, social care, and other public agencies
- professionals working with people at risk
- individuals, local communities and voluntary groups

The Cold Weather Plan has been published annually since 2011. This year's plan continues to build on the experience of developing and improving the ability of the health and social care sector and its partners to deal with significant periods of cold weather.

Background

The cold weather alert service comprises five levels (Levels 0-4), from year-round planning for cold weather, through winter and severe cold weather action, to a major national emergency. Each alert level aims to trigger a series of appropriate actions which are detailed in this plan. Detailed tables are available in the main body of the plan, but a high-level summary is given in the table below. This is followed by key public health messages to protect health in cold weather.

The plan is a good practice guide and the actions denoted within it are illustrative. It is a collaborative plan supported by PHE, NHS England, the Local Government Association, the Met Office and the Department of Health to protect and promote the health of the population of England.

There are five key messages that are recommended to all local areas, especially in light of any recent structural changes:

1. All local organisations should consider this document and satisfy themselves that the suggested actions and Cold Weather Alerts are understood across the system, and that **local plans are adapted as appropriate** to the local context.
2. NHS and local authority commissioners should satisfy themselves that the distribution of **Cold Weather Alerts will reach those that need to take action**.

3. NHS and local authority commissioners should satisfy themselves that **providers and stakeholders will take appropriate action** according to the Cold Weather Alert level in place and their professional judgements.

4. Opportunities should be taken for closer partnership working with the **voluntary and community sector** to help reduce vulnerability and to support the planning and response to cold weather.

5. Long-term planning and commissioning to reduce cold-related harm both within and outside the home is considered **core business by health and wellbeing boards** and should be included in joint strategic needs assessments and joint health and wellbeing strategies.

Summary cold weather actions for health and social care organisations and professionals, communities and individuals

	Level 0	Level 1	Level 2	Level 3	Level 4
	Year-round planning <i>All Year</i>	Winter preparedness and action <i>1 November to 31 March</i>	Severe winter weather forecast – Alert and readiness <i>Mean temperatures of 2°C and/or widespread ice and heavy snow predicted with 60% confidence</i>	Severe weather action <i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i>	Major incident – Emergency response
Commissioners of health and social care	<ol style="list-style-type: none"> 1) Take strategic approach to reduction of EWDs and fuel poverty. 2) Ensure winter plans reduce health inequalities. 3) Work with partners and staff on risk reduction awareness (eg flu vaccinations, signposting for winter warmth initiatives). 	<ol style="list-style-type: none"> 1) Communicate alerts and messages to staff/public/media. 2) Ensure partners are aware of alert system and actions. 3) Identify which organisations are most vulnerable to cold weather and agree winter surge plans. 	<ol style="list-style-type: none"> 1) Continue level 1 actions. 2) Ensure partners can access advice and make best use of available capacity. 3) Activate business continuity arrangements as required. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) Ensure key partners are taking appropriate action. 3) Work with partners to ensure access to critical services. 	Level 4 alert issued at national level in light of cross-government assessment of the weather conditions, coordinated by the Civil Contingencies Secretariat (CCS) based in the Cabinet Office. All level 3 responsibilities to be maintained unless advised to the contrary.
Provider organisations	<ol style="list-style-type: none"> 1) Ensure organisation can identify and support most vulnerable. 2) Plan for joined up support with partner organisations. 3) Work with partners and staff on risk reduction awareness (eg flu vaccinations, signposting for winter warmth initiatives). 	<ol style="list-style-type: none"> 1) Ensure cold weather alerts are going to right staff and actions agreed and implemented. 2) Ensure staff in all settings are considering room temperature. 3) Ensure data sharing and referral arrangements in place. 	<ol style="list-style-type: none"> 1) Continue level 1 actions. 2) Ensure carers receiving support and advice. 3) Activate business continuity arrangements as required; plan for surge in demand. 	<ol style="list-style-type: none"> 1) Continue level 2. 2) Implement emergency and business continuity plans; expect surge in demand in near future. 3) Implement local plans to ensure vulnerable people contacted. 	
Frontline staff – care facilities and community	<ol style="list-style-type: none"> 1) Use patient contact to identify vulnerable people and advise of cold weather actions; be aware of referral mechanisms for winter warmth and data sharing procedures. 2) Ensure awareness of health effects of cold and how to spot symptoms. 3) Encourage colleagues/clients to have flu vaccinations. 	<ol style="list-style-type: none"> 1) Identify vulnerable clients on caseload; ensure care plans incorporate cold risk reduction. 2) Check room temperatures and ensure referral as appropriate. 3) Signpost clients to other services using 'Keep Warm Keep Well' booklet. 	<ol style="list-style-type: none"> 1) Continue level 1 actions. 2) Consider prioritising those most vulnerable and provide advice as appropriate. 3) Check room temperatures and ensure urgent referral as appropriate. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) Implement emergency and business continuity plans; expect surge in demand in near future. 3) Prioritise those most vulnerable. 	
GPs and their staff	<ol style="list-style-type: none"> 1) Be aware of emergency planning measures relevant to general practice. 2) Ensure staff aware of local services to improve warmth in the home including the identification of vulnerable individuals. 3) Signpost appropriate patients to other services when they present for other reasons. 	<ol style="list-style-type: none"> 1) Consider using a cold weather scenario as a table top exercise to test business continuity arrangements. 2) Be aware of systems to refer patients to appropriate services from other agencies. 3) When making home visits, be aware of the room temperature. 	<ol style="list-style-type: none"> 1) Continue level 1 actions. 2) Take advantage of clinical contacts to reinforce public health messages about cold weather and cold homes on health. 3) When prioritising visits, consider vulnerability to cold as a factor in decision making. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) Expect surge in demand near future. 3) Ensure staff aware of cold weather risks and can advise appropriately. 	

The Cold Weather Plan for England: Protecting health and reducing harm from cold weather

	Level 0	Level 1	Level 2	Level 3	Level 4
Community and voluntary sector	<ol style="list-style-type: none"> 1) Engage with local statutory partners to agree how VCS can contribute to local community resilience arrangements. 2) Develop a community emergency plan to identify and support vulnerable neighbours. 3) Agree arrangements with other community groups to maximise service for and contact with vulnerable people. 	<ol style="list-style-type: none"> 1) Test community emergency plans to ensure that roles, responsibilities and actions are clear. 2) Set up rotas of volunteers to keep the community safe in cold weather and check on vulnerable people. 3) Actively engage with vulnerable people and support them to seek help. 	<ol style="list-style-type: none"> 1) Activate the community emergency plan. 2) Activate the business continuity plan. 3) Continue to actively engage vulnerable people known to be at risk and check on welfare regularly. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) Ensure volunteers are appropriately supported. 3) Contact vulnerable people to ensure they are safe and well and support them to seek help if necessary. 	<p>Level 4 alert issued at national level in light of cross-government assessment of the weather conditions, coordinated by the Civil Contingencies Secretariat (CCS) based in the Cabinet Office.</p> <p>All level 3 responsibilities to be maintained unless advised to the contrary</p>
National level	<ol style="list-style-type: none"> 1) CO will lead on co-ordinating cross-government work; individual government departments will work with partners on winter preparations. 2) DH, PHE and NHS England will look to improve the CWP and the monitoring and analysis of winter-related illness and deaths. 3) PHE and NHS England will issue general advice to the public and professionals and work closely with other government departments and other national organisations that produce winter warmth advice. 	<ol style="list-style-type: none"> 1) Cold Weather Alerts will be sent by the Met Office to the agreed list of organisations and Category 1 responders. 2) PHE and NHS England will make advice available to the public and professionals. 3) NHS England will continue to hold health services to account for action and PHE will routinely monitor syndromic, influenza, norovirus and mortality surveillance data. 	<ol style="list-style-type: none"> 1) Continue level 1 actions. 2) DH will ensure that other government departments, particularly DCLG RED, are aware of the change in alert level and brief ministers as appropriate. 3) Government departments should cascade the information through their own partner networks and frontline communication systems. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) NHS England will muster mutual aid when requested by local services. 3) Met Office will continue to monitor and forecast temperatures in each area, including the probability of other regions exceeding the level 3 threshold. 	
Individuals	<ol style="list-style-type: none"> 1) Seek good advice about improving the energy efficiency of your home and staying warm in winter; have all gas, solid fuel and oil burning appliances serviced by an appropriately registered engineer. 2) Check your entitlements and benefits; seek income maximisation advice and other services. 3) Get a flu jab if you are in a risk group (September/October). 	<ol style="list-style-type: none"> 1) If you are receiving social care or health services ask your GP, key worker or other contact about staying healthy in winter and services available to you. 2) Check room temperatures – especially those rooms where disabled or vulnerable people spend most of their time 3) Look out for vulnerable neighbours and help them prepare for winter. 	<ol style="list-style-type: none"> 1) Continue to have regular contact with vulnerable people and neighbours you know to be at risk in cold weather. 2) Stay tuned into the weather forecast ensure you are stocked with food and medications in advance. 3) Take the weather into account when planning your activity over the following days. 	<ol style="list-style-type: none"> 1) Continue level 2 actions. 2) Dress warmly; take warm food drinks regularly; keep active. If you have to go out, take appropriate precautions. 3) Check on those you know are at risk. 	

Key public health messages

Contact your GP or pharmacist if you think you, or someone you care for, might qualify for a free flu jab. There are four flu leaflets: one **general**, one for **pregnancy** and, one for people with **learning disability**, and one about **children**.

Free flu vaccinations are available for those who are at risk. For a full list see the annual flu plan, available at:

<https://www.gov.uk/government/collections/annual-flu-programme>:

Keep your home warm, efficiently and safely:

- heating your home to at least 18°C in winter poses minimal risk to your health when you are wearing suitable clothing (see page 40 for full advice).
- get your heating system and cooking appliances checked and keep your home well ventilated
- use your electric blanket as instructed and get it tested every three years. Never use a hot water bottle with an electric blanket
- do not use a gas cooker or oven to heat your home; it is inefficient and there is a risk of carbon monoxide poisoning and this can kill
- make sure you have a supply of heating oil or LPG or solid fuel if you are not on mains gas or electricity – to make sure you do not run out in winter

Key public health messages

Keep in the warmth by:

- fitting draught proofing to seal any gaps around windows and doors
- making sure you have loft insulation. And if you have cavity walls, make sure they are insulated too
- insulate your hot water cylinder and pipes
- draw your curtains at dusk to help keep heat generated inside your rooms
- make sure your radiators are not obstructed by furniture or curtains

Look after yourself:

- food is a vital source of energy and helps to keep your body warm so have plenty of hot food and drinks
- aim to include five daily portions of fruit and vegetables. Tinned and frozen vegetables count toward your five a day
- stock up on tinned and frozen foods so you don't have to go out too much when it's cold or icy
- exercise is good for you all year round and it can keep you warm in winter
- if possible, try to move around at least once an hour. But remember to speak to your GP before starting any exercise plans
- wear lots of thin layers – clothes made from cotton, wool or fleecy fibres are particularly good and maintain body heat
- wear good-fitting slippers with a good grip indoors and shoes with a good grip outside to prevent trips, slips and falls
- make sure you have spare medication in case you are unable to go out
- Check if you are eligible for inclusion on the [priority services register](#) operated by your water and power supplier.

Look after others:

- check on older neighbours or relatives, especially those living alone or who have serious illnesses to make sure they are safe, warm and well

Get financial support:

- there are grants, benefits and sources of advice to make your home more energy efficient, improve your heating or help with bills. It's worthwhile claiming all the benefits you are entitled to before winter sets in

1. Why this plan is needed

Although winter weather and snow can be fun for some, these weather conditions are also associated with an increase in illness and injuries. Cold weather increases the risk of heart attacks, strokes, lung illnesses, flu and other diseases. People slip and fall in the snow or ice, sometimes suffering serious injuries. Some groups, such as older people, very young children, and people with serious medical conditions are particularly vulnerable to the effects of cold weather.

On average, there are around 25,000 excess winter deaths each year in England.¹ Excess winter deaths are the observed total number of deaths in winter (December to March) compared to the average of the number of deaths over the rest of the year. 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 some of these winter deaths are indeed 'extra' and are related to cold temperatures² and living in cold homes³ as well as infectious diseases such as influenza.⁴ In the recent past, the rate of winter deaths in England was twice the rate observed in some northern European countries, such as Finland.⁵ Even with climate change, cold related deaths will continue to represent the biggest weather-related cause of mortality.⁶

Although there are several factors contributing to winter illness and death, in many cases simple preventative action could avoid many of the deaths, illnesses and injuries associated with the cold. Many of these measures need to be planned and undertaken in advance of cold weather.

The Cold Weather Plan for England (CWP) aims to prevent avoidable harm to health, by alerting people to the negative health effects of cold weather, and enabling them to prepare and respond appropriately. The CWP also aims to reduce pressure on the health and social care system during winter through improved anticipatory actions with vulnerable people.

The plan sets out a series of actions to be taken by the NHS, social care and other agencies throughout the year, to prepare for and respond to winter, so as to protect the vulnerable. It also encourages local communities to support the most vulnerable in their area, such as checking on them during severe weather and offering other support.

The Department of Health (DH) commissioned an **independent evaluation of the CWP** from the Policy Innovation Research Unit, (PIRU). The aim of the evaluation was to examine the effect of cold weather on health and health services; assess the extent to which the CWP is implemented at the local level and whether it is reaching its target groups; assess whether it is cost-effective; and recommend how it may be improved in future years. The evaluation was undertaken from September 2012 to September 2013

and is to be published soon; the findings have been incorporated in CWP since winter 2013-14.

In 2015, new **NICE Guidance on Excess winter deaths and morbidity** was published. It highlights the health risks associated with cold homes. NICE also included pregnant women as a vulnerable group so the CWP has been updated to include this. The CWP is entirely consistent with the NICE recommendations, including the need for strategic approaches, single point of contact services offering tailored solutions to which all who come into contact with vulnerable people can refer. More information is included in the CWP companion document 'Making the Case'.

The Department for Energy and Climate Change also published a new strategy - Cutting the cost of keeping warm: A fuel poverty strategy for England.⁷ It emphasises the role the health and social care sector can play in tackling fuel poverty. The strategy is underpinned by the fuel poverty target for as many fuel poor homes as reasonably practicable to achieve an energy efficiency standard of Band C by 2030 - which became law in December 2014.

1.1 The Cold Weather Plan

DH published the first CWP for England in November 2011 along with a companion document '*Making the Case: Why Cold Weather Planning is essential to Health and Wellbeing*'. The documents have been updated on an annual basis to date.

The CWP is composed of:

- the CWP (focus on cold weather actions)
- a series of action cards (taken from the plan and intended as aide memoires)
- Making the Case: why long-term strategic planning for cold weather is essential to health and wellbeing, which has combined elements of both previous supporting documents to create one new document

The **Keep Warm Keep Well booklet** and a new **Top Tips for Keeping Well leaflet** are aligned with the Cold Weather Plan and are specifically for the public.

In line with PHE communications policy, the CWP documents will be available in electronic format only. PHE makes every effort to ensure materials published online are available in accessible formats. Local partners may wish to print copies of the public-facing material for clients they feel may benefit.

The CWP aims to support local areas prepare for, respond to and recover from periods of cold weather through evidence based guidance and actions. Local areas are

encouraged to promote and implement the CWP and raise awareness of the potential impacts of cold weather and the actions that can be taken to protect health.

The plan is a good practice guide and the actions within it illustrative. Most of the actions identified in the last edition have been carried forward into this one. Key changes include:

- confirmation of the preliminary findings of the 2012-2013 evaluation of the Cold Weather Plan, indicating that the **majority of the burden of cold-related ill-health occurs at moderate outdoor winter temperatures (from 4-8°C)**. These findings require an **increased emphasis on level 0 (year-round planning) and level 1 (winter preparedness and action)** to protect 'at-risk' population groups, which has already been incorporated in recent versions
- consistency checking with the new **NICE Guidance on Excess winter deaths and morbidity and the health risks associated with cold homes** leading to the inclusion of **pregnant women as an 'vulnerable' group**. The Cold Weather Plan is entirely consistent with the NICE recommendations, including the need for strategic approaches, **single point of contact services offering tailored solutions to which all who come into contact with vulnerable people can refer**.
- reference to the Department for Energy and Climate Change's new strategy - **Cutting the cost of keeping warm: A fuel poverty strategy for England** which emphasises the **role the health and social care sector can play in tackling fuel poverty**
- updated advice on **flu vaccination** consistent with this year's recommendations
- publication of a **new leaflet** entitled '**Top Tips for Keeping Well leaflet**, in collaboration with the Department for Work and Pensions. The leaflet is targeted at pensioners in receipt of pension credit in England, Scotland and Wales. It will sit alongside an updated **Keep Warm Keep Well** booklet.

As previously, the emphasis should be on:

a) increasing action at level 0 (year round planning) and level 1 (winter preparedness and action).

This reflects findings from the evaluation of the CWP by the PIRU, which indicate that most of the health burden from cold weather occurs before the current 2°C threshold for alert level 2 or 3 is reached. This is because the negative health effects of cold weather start to occur at relatively moderate mean outdoor temperatures (4-8°C depending on region), and days at these temperatures occur much more frequently than days where the temperature is 2°C or less.

Furthermore, it is clear that while actions taken by health and social care sector during cold weather may relieve part of the health burden⁶, multi-agency action is required to

address wider determinants of health, such as socioeconomic inequalities, fuel poverty and housing energy efficiency.

b) the importance of a long-term strategic approach and aligning with the Public Health Outcomes Framework

The CWP is only part of a wider response required to tackle excess winter deaths (EWDs) and there is a strong argument for a multi-agency approach to reducing the wider determinants of winter deaths and disease. This is not something that can be tackled in the winter alone and requires a year-round strategic approach by HWBs, directors of public health and commissioners to assess needs and to commission, plan and implement interventions.

The **Public Health Outcomes Framework (PHOF)**⁸ sets out desired outcomes and indicators to help local authorities and their partners understand how well public health is being improved and protected. There are two indicators within the framework that are directly related to this plan: fuel poverty and EWDs. However, action to reduce the harm from cold can be linked to many more outcome framework indicators connected to the wider determinants of health, such as poverty, educational achievement and social isolation (see section 4 of *Making the Case*).

c) distinguishing between the health effects and interventions for cold temperatures, and those for snow and ice

Cold temperatures predominantly affect older age groups, children and those with chronic illnesses; the actions in this plan are primarily targeted at these groups. Health effects are mostly “medical”; it is thought that about 40% of cold-related mortality is due to cardiovascular disease and 33% to respiratory disease.

Heavy snow and ice have a smaller, but still important direct effect on health; predominantly resulting in falls and injuries.⁹ The findings of the PIRU evaluation indicate that most injuries relating to snow and ice occur in working age adults (ie those who are out and about in these conditions). However, snow and ice may cause significant disruption to the delivery of healthcare and other services, which will have an indirect impact on health and wellbeing.

The plan endeavours to clarify these differences and to include information about the National Severe Weather Warning Service (NSWWS) which provides warning with regard to snow and ice, based on an assessment of likelihood and impact, and can be defined at a more specific regional level, than the Cold Weather Alert system.

1.2 Who is the plan for?

The plan is for health and social care services and other public agencies and professionals who interact with those most at risk from the health effects of cold weather.

Local health resilience partnerships (LHRPs) and local resilience forums (LRFs) will have a critical role in preparing for, responding to, and recovering from, severe winter weather at a local level, working closely with HWBs on longer-term strategic planning.

The plan aims to cover the spectrum of action from commissioning and planning to emergency response. Both the main plan and the companion document will be of interest to all professional groups. In general terms:

Level 0 “Year round planning” and the *Making the Case* companion document may be more of relevance to public health professionals, HWBs, local authority chief executives and elected members.

Level 1 “Winter preparedness and action” and the *Making the Case* companion document will be of relevance to all professional groups, particularly front line health and social care professionals.

Levels 2-4 “Severe winter weather is forecast through to national emergency” are more reactive in nature and include snow and ice as well as severe cold weather and may be particularly relevant to emergency planners and responders.

The plan is also intended to mobilise individuals and communities to help to protect their neighbours, friends, relatives, and themselves against avoidable health problems in cold weather. Broadcast media and alerting agencies may also find this plan useful.

At-risk groups include older people, the very young and people with pre-existing medical conditions as well as those whose health, housing or economic circumstances put them at greater risk of harm from cold weather.

Appendix 1 of this document and section 2 in *Making the Case* provide more information on which groups may be at particular risk from cold weather. However, paraphrasing the concept of proportionate universalism identified in the Marmot review *Fair Society Healthy Lives*¹⁰, it is important not to focus only on those most at risk; actions should be universal, but with a scale and intensity proportionate to the level of risk.

Appendix 2 provides some information on methods for identifying people who might benefit from extra targeted support. It is recognised that identifying and supporting people who may fall into these groups remains challenging, particularly if they are not

already in receipt of services that might help identify them. Community and voluntary groups, perhaps particularly those that may not consider themselves as 'health' or 'social care' organisations, can play a valuable role in reaching those not otherwise supported (for more information see section 1.4.6).

1.3 The Cold Weather Plan and the health and social care system

The CWP builds on existing measures taken by DH, the NHS and local authorities to protect individuals and communities from the effects of cold weather and encourage community resilience. It outlines the key areas where public, independent and voluntary and community sector health and social care organisations should work together to maintain and improve integrated arrangements for planning and response in order to deliver the best outcomes possible during cold weather. It is the responsibility of each local area to ensure that preparedness and response plans are drawn up and tested.

The implementation of the Health and Social Care Act 2012 saw the abolition of primary care trusts and strategic health authorities and the creation of a number of new bodies including PHE, NHS England and clinical commissioning groups (CCGs). At a local level, responsibility for public health transferred to local authorities.

DH is responsible for strategic leadership of both health and adult social care systems, but no longer has direct management of most NHS systems. It is responsible for policy decisions regarding excess winter morbidity and mortality.

NHS England provides national leadership for improving health care outcomes, directly commissions primary care (specifically general practice services, dentistry, optometry and pharmacy), some specialist services, and oversees CCGs. It is responsible for assuring that the NHS is prepared for cold weather.

CCGs commission planned hospital care, rehabilitative care, urgent and emergency care, most community health services, mental health and learning disability services.

NHS funded organisations, including commissioners and providers of NHS funded care, must show they can deal with a significant incident or emergency. This programme of work is referred to in the health community as **emergency preparedness, resilience and response (EPRR)**

NHS Choices continues to provide reliable advice and guidance throughout the year on how to keep fit and well. It includes information on **winter health**.

PHE provides national leadership and expert services to support public health, including health surveillance. Preparing and publishing the CWP for England has been the responsibility of PHE since 2013. PHE will prepare and publish the CWP and seek to

ensure that is widely communicated using a variety of channels to ensure maximum publicity.

PHE will make advice available to the public and health and social care professionals across England in preparation for winter, and to regions, where severe cold weather (including snow and ice) is forecast, via NHS Choices, and the websites of the Met Office and PHE.

Local authorities ('upper tier' and unitary) are responsible for population health outcomes, led by directors of public health and supported by PHE. They have a duty to ensure that plans are in place to protect the health of their population as part of their public health leadership role. Chief executives of local authorities and councillors, especially those with portfolio responsibility for health, have important strategic overview and scrutiny functions, as well as community engagement and decision-making roles.

These organisations are brought together to provide strategic co-ordination of commissioning, planning and response at local level as per the Civil Contingencies Act 2004 and guidance issued by the Cabinet Office, DH and the Department for Communities and Local Government (DCLG).

The local resilience forum (LRF) and strategic co-ordinating group (SCG) bring together emergency planning and response arrangements run by local government and the NHS.

LHRPs have been established to bring together local health organisations to support strategic planning. This will help to ensure that the health sector plays an effective, co-ordinated role in multi-agency planning and response, based around the various agencies' and providers' responsibilities at a local level.

HWBs act as forums for commissioners across the NHS, social care and public health systems and are responsible for JSNAs and health and wellbeing strategies to inform commissioning. Engagement of these boards in the long-term strategic preparation for cold weather and aspects related to climate change mitigation and adaptation is critical, in order to reduce the risks and harness opportunities to improve health, including tackling poor quality housing.

1.4 The core elements of the plan

The CWP depends on having well co-ordinated arrangements for dealing with cold weather in place before winter starts. The essential elements of effective cold-weather planning include:

1.4.1 Strategic planning and commissioning

Co-ordinated multi-agency long-term planning and commissioning for cold weather is essential:

- to protect people and infrastructure from the effects of cold weather and thus reduce excess winter illness and death and the burden on health and social care
- to support improved building design and increased energy efficiency which can improve and protect health (thereby potentially reducing pressure on health provision), reduce carbon emissions, and generate jobs in the local community
- to tackle fuel poverty; including energy efficiency interventions in the home, income maximisation and minimising energy costs

The **Care Act 2014** requires that the suitability of accommodation is considered in assessing wellbeing.¹¹ Statutory guidance accompanying the Act describes suitable accommodation as all places where people live, and that this will be safe, healthy and suitable for the needs of a person. A healthy home would be dry, warm and insulated. Housing is also identified as a crucial health-related service which is to be integrated with care and support and health services to promote the wellbeing of adults and carers and improve the quality of services offered.

The Act states that the best way to promote someone's wellbeing will be through preventative measures that allow people to live as independently as possible for as long as possible. In light of the evidence of the impact on health and wellbeing of living in cold and damp homes, the Act suggests local authorities may wish to consider the opportunities to prevent the escalation of health and care and support needs through the delivery or facilitation of affordable warmth measures to help achieve health and wellbeing outcomes.

For all of these reasons, it is recommended that long-term, year-round planning and commissioning to reduce cold-related harm both within and outside the home is considered core business by HWBs and included in JSNAs and JHWSs.

1.4.2 Alert system (advance warning and advice over the winter)

A Cold Weather Alert service operates from 1 November to 31 March, based on Met Office forecasts and data. This will trigger levels of response from the NHS, local government and public health system, and communication of risks to the public.

Advice and information for the public and for health and social care professionals should be available, particularly those working with at-risk groups. This includes both general preparation and actions for cold weather and more specific advice when severe cold weather (including snow and ice) is forecast.

1.4.3 Winter preparedness and action, including severe cold weather

Local authorities, PHE and NHS England have a duty to plan and co-operate with partner organisations to ensure that both in planning and response they work together around risks, including preparation for cold weather, snow and ice. Organisations plan and collaborate at local, regional and national levels as required.

Elements which local NHS, public health and social care organisations will oversee include, but are not limited to:

For cold weather:

- action to reduce exposure to low indoor temperatures
- particular care for vulnerable population groups including partnership with voluntary and community sector organisations
- preparedness of the health and social care system – staff training and planning, appropriate healthcare and the physical environment

For severe cold and snow and ice:

- action to ensure that business continuity plans are in place and exercised in partnership with provider organisations
- work with partner agencies to ensure road and pavement gritting arrangements are in effect to allow access to critical services
- support for local voluntary and community sector organisations to activate community emergency plans

1.4.4 Communicating with the public

Working with the media to get advice to people, both before the start of cold weather and during a spell of severe cold weather is vital:

- the Civil Contingencies Act 2004 provides a duty on category 1 responders to warn and inform the public before, during and after an emergency
- there should be a local cold weather-related health information plan – specifying what is communicated, to whom, when, how and why
- this should raise awareness of how exposure to severe cold and living in low indoor temperatures affects health and what preventive action people can take, both throughout the year and during cold weather to keep warm
- attention should especially be given to ensuring that key public health messages (Box 3.1 section 3) reach vulnerable groups and those who care for them (eg caregivers of the chronically ill, parents of young children) in a suitable and timely

way. Public health messages and advice on financial support and benefits can be found in the [Keep Warm Keep Well booklet](#) on the www.gov.uk website

- the Met Office is using hashtags #winterready for winter preparedness and #weatheraware for levels 2-4, which will be supported by PHE, DH and other government departments when appropriate in social media communications

1.4.5 Working with service providers

Service providers should be supported to reduce cold-related harm by, for example:

- advising hospitals and care, residential and nursing homes to monitor indoor temperatures and heat rooms appropriately to reduce the risk of cold-related illness and death in the most vulnerable populations
- supporting GPs, district nurses and social workers to identify vulnerable patients and clients on their practice lists, by providing them with toolkits and sharing examples of good practice
- ensuring that health and social care organisations and voluntary and community sector groups implement measures to protect people in their care and reduce cold-related illness and death in those most at risk
- exploring how other services that may have contact with vulnerable groups (eg fire services undertaking home safety checks) should refer people to winter warmth initiatives
- ensuring midwives, health visitors, community health practitioners and school nurses provide advice to parents with young or disabled children about the risk of exposure to low indoor temperatures and heating homes appropriately and affordably
- working with registered providers of housing to encourage wardens/caretakers to keep an eye out for vulnerable tenants during cold weather, and to consider measures to increase energy efficiency such as insulation, foil heat reflectors for radiators and draught-proofing
- considering the impact of cold weather on homeless people (in temporary accommodation or sleeping on the streets) and planning in advance with providers the point at which alternative daytime and night-time shelter or emergency housing would be provided or access hours extended.
- supporting staff to remain fit and well during winter, for example [staff flu immunisation programmes](#)

1.4.6 Engaging the community

Community engagement is fundamental and may offer significant assistance in identifying and supporting particularly vulnerable or marginalised individuals for example by providing extra help where possible, to care for those most at risk, including isolated older people and those with a serious illness or disability or helping ensure people are claiming their entitlement to benefits (see [Keep Warm Keep Well booklet](#)).

This support could come from the voluntary and community sector, faith groups, families and others. It should be noted that:

- the voluntary and community sector (VCS) covers a wide variety of organisations from organisations with a very specialist focus on a specific condition or type of provision, organisations who focus on a specific client group or community, broader-based providers, emergency response organisations, campaigning organisations, representative groups, community centres
- this broad range of support different groups can provide should be considered at all levels of planning and response, and it is important that they are involved at the earliest opportunity, as trusted links take time to build
- VCS providers that specialise in health and social care are vital and many of these will already be well linked into the health and care system. However, the wider voluntary and community sector (eg community centres, recreational groups, social groups, parish councils in rural areas and neighbourhood forums in urban areas) can also have an important role to play, particularly for example in reaching vulnerable people not already engaged with statutory services. These organisations are much less likely to be linked in with statutory bodies or providers and may need information to understand their role and why cold weather planning and response is relevant to them
- the wider VCS can also be involved as a provider of resources. This could be equipment (blankets, sleeping bags, stoves), facilities (emergency accommodation) or people (volunteers, signposting)¹²
- older people within communities can help identify those most vulnerable and should be involved in the planning for cold weather. Strong links with local older people's forums are essential, providing them with information to help identify and support those most at risk. Local infrastructure organisations and local umbrella bodies are a good initial route into the local voluntary and community sector. They can communicate messages, identify organisations that represent particular communities and co-ordinate partnerships of sector bodies

1.4.7 Monitoring/evaluation

Near real-time surveillance will be undertaken by PHE, and ongoing evaluation undertaken by PHE and other partners (see section 4).

2. Cold Weather meteorological services

The Met Office is the UK’s national weather service. Its Public Weather Service (PWS) provides forecasts for the public to help them make informed decisions about their day-to-day activities. The National Severe Weather Warning Service is part of this, providing advance notice of weather which could affect public safety.

Figure 2.1 Met Office service and notifications

Service	Purpose	Distribution	Timing
General weather forecast	To enable the UK public to make informed decisions about their day-to-day activities	Web, TV, radio	Every day
National Severe Weather Warning Service (NSWWS)	Provision of weather warnings to: a) the public to alert in advance of high impact weather and to prompt consideration of actions they may need to take b) Civil emergency authorities and the MoD to trigger their plans to protect the public from impacts in advance of an event, and to help them recover from any impacts after the event.	Email, web, TV, radio, print media, Twitter, SMS, Facebook	When required
Cold Weather Alerts	To provide early warning of low temperature and or widespread ice/heavy snow to health and social care organisations and professionals registered with the service	Email, Twitter, Web	Alert issued as soon as agreed threshold has been reached and when there is a change in alert level. Issued between 1 November and 31 March.
Cold Weather Planning Advice	To provide planning advice throughout the winter period relating to low temperatures or widespread ice/heavy snow to health and social care organisations and professionals registered with the service	Email	Twice a week (9am each Monday and Friday from 1 November to 31 March.

2.1 The National Severe Weather Warning Service

The Met Office’s **National Severe Weather Warning Service** (NSWWS) warns organisations and the public about a range of high-impact weather events, including rain, snow, wind, fog and ice. This service operates year round across the UK, and can be found on the Met Office website.

A warning will be issued when snow and ice is forecast to cause an impact across a number of sectors, including health. It is issued based on a combination of the impact of the weather, and the likelihood of the weather happening. A NSWWS warning can be issued up to five days in advance of the expected event.

Warning level

Warnings are based on a combination of:

- **likelihood** – how likely the event is to occur
- **impact** – the potential impact the expected conditions may have

Colour of warnings (impact matrix)

Warnings are given a colour depending on a combination of both the likelihood of the event happening and the impact the conditions may have:

- red
- amber
- yellow

An example of the matrix used to decide the warning colour is shown below. In this case, an event with a high impact and medium likelihood would result in an amber warning.

Likelihood	High				
	Med				
	Low				
	Very low				
		Very low	Low	Med	High
Impact					

Figure 2.2 Met Office NSWWS: Impact table for snow and ice

	Very Low	Low	Medium	High
Impact and advice associated with SNOW	<p>Small amounts of snow lying on roads and pavements so some slippery road surfaces possible. Traffic may move generally slower than normal. Take extra care when walking, cycling or driving in affected areas.</p>	<p>More widespread snow lying on roads and pavements but road networks generally open. Care needed with only localised travel disruption. Problems mostly confined to usual prone areas. Take extra care when walking, cycling or driving in affected areas. Journeys through affected areas may take longer than usual.</p>	<p>Widespread snow with a number of road closures, others passable only with care. BE PREPARED for some disruption to road, rail and air transport with difficult driving conditions likely and longer journey times.</p>	<p>Widespread deep snow with many roads closed or impassable. Roads likely to become impassable with high risk of drivers becoming stranded. Significant disruption to road, rail and air transport. Risk to personal safety. Expect significant disruption to normal day to day life as a result of transport issues, school closures etc. Avoid making unnecessary journeys.</p>
Impact and advice associated with ICE	<p>Localised icy stretches on some untreated roads and pavements are possible. Take extra care when walking, cycling or driving in affected areas.</p>	<p>More widespread icy stretches on untreated roads and pavements but road networks generally open. Take extra care when walking, cycling or driving in affected areas. Journeys through affected areas may take longer than usual.</p>	<p>Widespread black ice, some roads passable only with care. Possibility of road collisions and significant increase in slips & falls.</p>	<p>N/A It is extremely unlikely that widespread ice, on its own in the UK, would be sufficient to be considered “high impact” by NSWWS.</p>

NSWWS does not consider cold temperatures explicitly, but can provide information at a more specific geographical level about snow or ice forecasts that the public and emergency planners may find useful.

To receive NSWWS warnings directly, [register with hazard manager](#).

2.2 The Cold Weather Alert Service

A Cold Weather Alert Service was established in 2011 in collaboration with DH and the Met Office. It operates in England from 1 November to 31 March. During this period, the Met Office may forecast severe cold weather, as defined by forecasts of mean temperatures of 2°C or less for at least 48 hours, and/or snow and ice.

The Cold Weather Alert service comprises five main levels (levels 0-4) outlined in Figure 2.3 and described in further detail below.

Figure 2.3: Cold Weather Alert levels

Level 0	Year-round planning <i>All year</i>
Level 1	Winter preparedness and action programme <i>1 November to 31 March</i>
Level 2	Severe winter weather is forecast – Alert and readiness <i>mean temperature of 2°C or less for a period of at least 48 hours and/or widespread ice and heavy snow are predicted, with 60% confidence</i>
Level 3	Response to severe winter weather – Severe weather action <i>Severe winter weather is now occurring: mean temperature of 2°C or less and/or widespread ice and heavy snow.</i>
Level 4	Major incident – Emergency response <i>Central Government will declare a Level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health</i>

Cold Weather Alerts – definitions

Cold Weather Alert

An alert will be issued for ‘cold’ temperatures if there is a high likelihood (60% or more) that the mean temperature is expected to be at or below 2C for a period of 48 hours in one or more regions in the next five days. A level 2 will be issued when these conditions are forecast and a level 3 when they are occurring.

An alert for snow and ice will be issued when there is a high likelihood (60% or more) that there will be snow or widespread ice affecting one or more regions in the next five days, A level 2 will be issued when this weather is forecast and a level 3 when the snow and ice is occurring. A NSWWS warning is highly likely to have been issued as well (see section 2.1 above).

Heavy snow – Snow that is expected to fall for at least two hours. Geographic extent is not considered, and sometimes the event can be quite localised, but the Met Office will always try to indicate which area will be affected in the alert.

Widespread ice – Ice forms when rain falls on surfaces at or below zero; or already wet surfaces fall to or below zero. The ice is usually clear and difficult to distinguish from a wet surface. It usually forms in sheets. Warnings are issued when any depth of ice is expected over a widespread area. Warnings will also be issued after a snowfall when compacted snow is expected to cause an ice risk.

The term “widespread” indicates that icy surfaces will be found extensively over the area defined by the Met Office in the alert.

The Met Office issues these alerts down to a county level, so either of the warnings above could be issued even if only one county is likely to be affected.

Appendix 3 shows the core messages to be broadcast as official PHE warnings alongside national and regional weather forecasts at different cold weather alert levels. They may be expanded or otherwise refined in discussion with broadcasters and weather presenters.

Level 0: Year-round planning to reduce harm from cold weather

This emphasises that year-round planning is required to build resilience and reduce the impact of cold weather. This level of alert relates to those longer-term actions that reduce the harm to health of cold weather when it occurs (eg housing and energy efficiency measures, and long-term sustainable approaches to influence behaviour change across health and social care professionals, communities and individuals).

These measures can also address other important health, sustainability and inequalities issues, such as addressing fuel poverty, building community resilience, providing employment opportunities, reducing carbon emissions, and the burden on health and social care services (see *Making the Case* section 3.1).

Level 1: Winter preparedness and action

Level 1 is in force throughout the winter from 1 November to 31 March and covers the moderate temperatures where the greatest total burden of excess winter death and disease occur. This is because the negative health effects of cold weather start to occur at relatively moderate mean temperatures (4-8°C depending on region) and there are normally many more days at these temperatures each winter.

Actions described at this level should be being taken throughout the winter to protect and improve health. Preparations should also be in place to protect health and ensure service continuity in the event of severe cold, and for episodes of heavy snow and/or widespread ice (see *Making the Case* section 3.2).

Level 2: Alert and readiness

Level 2 is triggered when the Met Office forecasts a 60% chance of severe winter weather, in one or more defined geographical areas for a period of at least 48 hours. Severe winter weather is defined as a mean temperature of 2°C or less and/or heavy snow and widespread ice.

Although there are usually fewer days at these low temperatures, the risk of negative health impacts increases as the temperature falls. Reactive action to prevent harm to health and manage business continuity by services would be proportionately more important were we to experience an extremely cold spell for a prolonged period. Aside from cold temperatures, snow and ice are associated with an increase in injuries and severe disruption to services.

Level 3: Severe weather action

This is triggered as soon as the weather described in level 2 actually happens. It indicates that severe winter weather is now happening and an impact on health services is expected.

Level 4: National emergency

This is reached when cold weather is so severe and/or prolonged that its effects extend outside health and social care, and may include for example power or transport problems, or water shortages, and/or where the integrity of health and social care systems is threatened. At this level, multi-sector response at national and regional levels will be required.

The decision to go to a level 4 is made at national level and will be taken in light of a cross-government assessment of the weather conditions, co-ordinated by the Civil Contingencies Secretariat (Cabinet Office).

A dummy alert for illustration purposes is given in Figure 2.4, and Figure 2.5 illustrates how cold weather alert messages may be cascaded by e-mail throughout the local community and nationally as appropriate. LRFs, LHRPs, and health and social care organisations will want to develop this into a specific cascade system that is appropriate for their local area.

Figure 2.4 Example of a Cold Weather Alert

Cold Weather Alert

Tel: 0370 900 0100 www.metoffice.gov.uk



NHS (Ref: MO43)

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Forecast Issued on Monday, 26 January 2015 at 08:18

Cold Weather Alert

Level 3 - Cold Weather Action

<http://www.metoffice.gov.uk/public/weather/cold-weather-alert/#?tab=coldWeatherAlert>

There is a 90% probability of severe cold weather/icy conditions/heavy snow between 1200 on Wednesday and 1200 on Tuesday in parts of England. This weather could increase the health risks to vulnerable patients and disrupt the delivery of services.

Please refer to the national Cold Weather Plan and your Trust's emergency plan for appropriate preventive action.

An update will be issued when the alert level changes in any region. Alerts are issued once a day by 0900 if required and are not subject to amendment in between standard issue times. Note that the details of the forecast weather are valid at the time of issue but may change over the period that an alert remains in force. These details will not be updated here unless the alert level also changes, the latest forecast details can be obtained at the following link:

<http://www.metoffice.gov.uk/public/weather/forecast/#?tab=map>

Regional Risk Assessments for occurrence of Cold Weather conditions between 1200 Local Time on Wednesday and 1200 Local Time on Tuesday.

The areas that are likely to be affected are:

Region	Risk	Comments
North East England	90 %	Low temperatures expected from Wednesday onwards. The cold will be accentuated by very strong winds. Snow showers are expected with accumulations in places, particularly over hilly areas..
North West England	90 %	Low temperatures expected from Wednesday onwards. The cold will be accentuated by very strong winds. Snow showers will be frequent at times with accumulations in places, particularly over hilly areas.
Yorkshire and the Humber	90 %	Low temperatures expected from Wednesday onwards. The cold will be accentuated by very strong winds. Snow showers are expected with accumulations in places, particularly over hilly areas.
West Midlands	80 %	Low temperatures expected from Wednesday onwards. The cold will be accentuated by very strong winds. Snow showers are expected and may be frequent at times with accumulations.
East Midlands	70 %	Becoming colder from late Wednesday onwards. Snow showers expected with accumulations in places, particularly over hills. Increased risk that the temperature threshold will be met by early next week.
East of England	70 %	Becoming colder from late Wednesday onwards. Snow showers at times with a risk of slight accumulations in places. Increased risk that the

Southeast England	60 %	temperature threshold will be met by early next week. Becoming colder from late Wednesday onwards. Risk of snow showers with any accumulations most likely over hills. Increased risk that the temperature threshold will be met by early next week.
London	40 %	Becoming colder from late Wednesday onwards. Risk of snow showers. Alert criteria not expected to be met at this stage.
Southwest England	60 %	Becoming colder from late Wednesday onwards. Risk of snow showers, particularly over the Moors. Alert criteria for temperatures most likely to be met in the northeast of the region.

General Comments:- A cold front will clear southeastwards during Wednesday introducing cold conditions across England for the next few days. Snow showers will affect most areas at times through the rest of this week and over the weekend with locally significant accumulations in places, particularly for hilly areas in the north. Showers and overnight frosts also bring the risk of icy stretches forming on untreated surfaces. Strong winds will accentuate the cold feel at times although it is likely to prevent any extremely low overnight minimum temperatures. At this stage the cold weather looks like it will persist until at least the early part of next week.

For updated seasonal flu and syndromic surveillance bulletins from Public Health England, please follow the links below:

PHE Weekly National Influenza Report-

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/EpidemiologicalData/03influsweeklyreportpdfonly/>

PHE Real-time Syndromic Surveillance Bulletins -

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/RealtimeSyndromicSurveillance/>

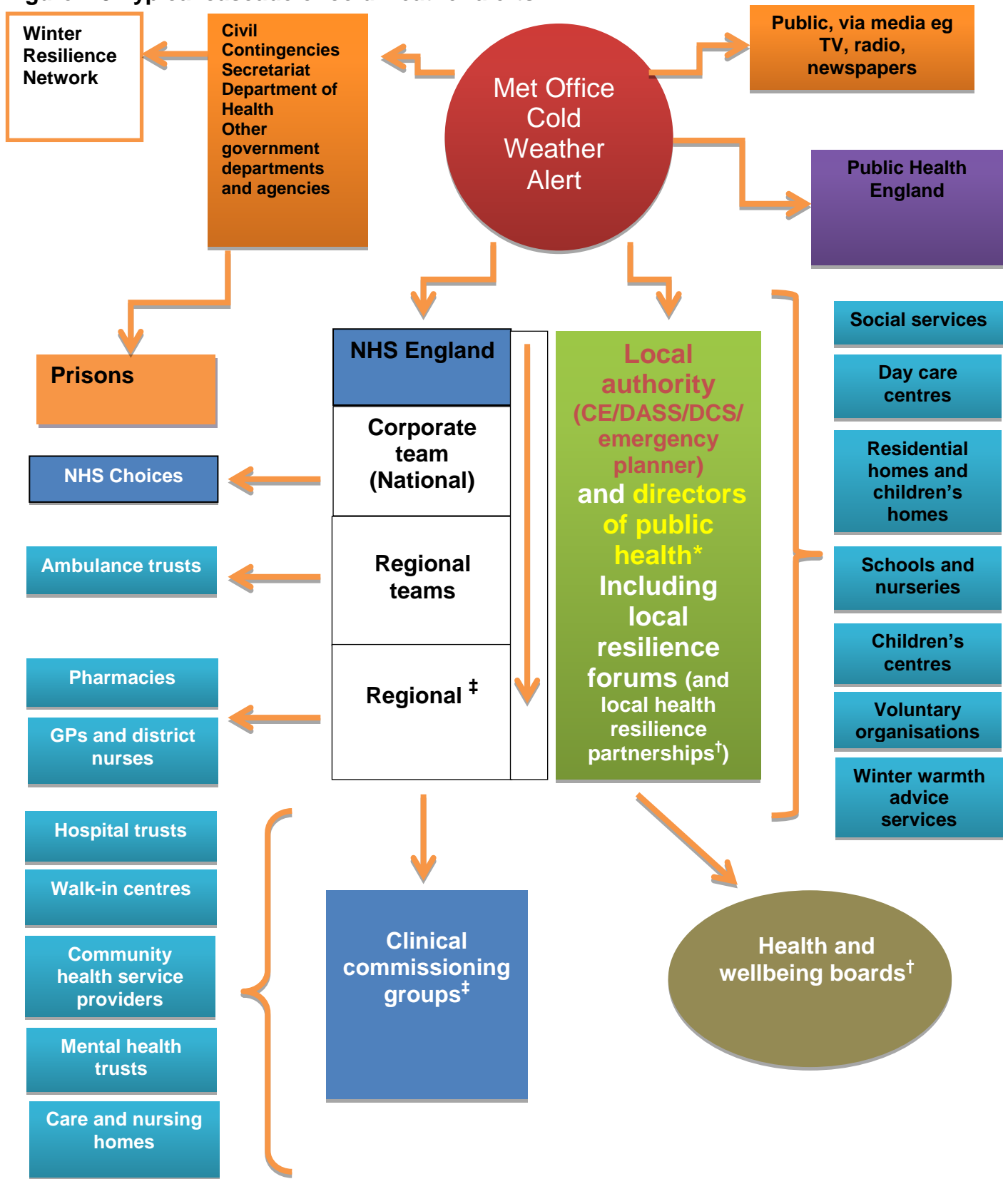
The PHE Cold Weather Plan can be accessed at the following link:

<http://www.gov.uk/phe>

To aid local planning, listed below are the Local resilience Forum (LRFs) matched against their regions.

NHS Region	NSWW Region	Local Resilience Forum
North	North East England	Durham and Darlington Northumbria Cleveland
	Yorkshire and the Humber	Humber North Yorkshire West Yorkshire South Yorkshire
	North West England	Cheshire Cumbria Greater Manchester Lancashire Merseyside
Midlands	West Midlands	Staffordshire Warwickshire West Mercia West Midlands
	East Midlands	Derbyshire Leicestershire Lincolnshire Northamptonshire Nottinghamshire
	East of England	Bedfordshire Cambridgeshire Essex Hertfordshire Norfolk Suffolk
South	South East England	Sussex Kent Surrey Thames Valley Hampshire and Isle of Wight
	South West England	Avon & Somerset Devon, Cornwall & Isle of Scilly Dorset Gloucestershire Wiltshire and Swindon
London	London	London

Figure 2.5 Typical cascade of cold weather alerts



Notes:

†LHRPs and HWBs are strategic and planning bodies, but may wish to be included in local alert cascades.
 ‡NHS England Regional and CCGs should work collaboratively to ensure that between them they have a cascade mechanism for cold weather alerts to all providers of NHS commissioned care both in business as usual hours and the out of hours period in their area.
 *PHE Centres would be expected to liaise with Directors of Public Health to offer support, but formal alerting would be expected through usual Local Authority channels.

3. Summary of Cold Weather Plan levels and actions

The issue of a Cold Weather Alert should trigger a series of actions by different organisations and professionals as well as the general public. The tables that follow summarise the actions to be taken by different organisations and groups from the previous section in order to respond to the alert level, be it preparing for, or responding to, an actual episode of severe cold weather.

3.1 Using the action tables

The actions outlined in the tables are illustrative. Local areas should consider these as guides when developing local cold weather preparedness arrangements. The CWP for England is a broad framework and local areas need to tailor the suggested actions to their local situation and ensure that they have the best fit with wider local arrangements.

The tables emphasise the importance of joint working across agencies including the voluntary and community sector, and highlight one of the aims of the plan, which is to ensure that there is an integrated response to cold weather across sectors. Local areas will need to consider those actions indicated in the tables which will need to be taken jointly across organisations and sectors.

Local organisations are asked to consider the action tables and to recast the suggested actions in ways that are most appropriate for them. NHS, local authorities, LHRPs and LRFs should assure themselves that cold weather response plans are in place for the coming winter as part of wider preparedness and response plans to extreme climate events. Section 5 highlights the overarching next steps which NHS and local authorities should take to ensure that the Cold Weather Alerts are being disseminated and acted upon locally.

It is also worth reiterating:

- the actions for each alert level are not intended to be an 'all or none' situation. Staff and organisations are expected to develop action plans which make sense to them using these as a broad template. Staff would be expected to exercise professional judgement in a clinical setting with a patient or client and respond appropriately to that patient's needs
- staff are requested to be much more aware of the effects of cold weather on health and when they notice a service user at risk from for example, a cold home, that they know what actions to take to ensure safety and that there are clear guidelines for

them to refer onwards to appropriate organisations who are able advise on energy efficiency, heating and financial benefits

- a system-wide approach is needed to assessing the nature of the problem and addressing these across organisations locally that makes most effective and efficient use of resources. Local areas may also wish to refer to an earlier DH toolkit **How to reduce the risk of seasonal excess deaths systematically in vulnerable older people at population level**.¹³ This is designed to help local communities to take a systematic approach to reduce the risk of seasonal excess deaths in older people.

Please refer to the glossary of abbreviations and note that both NHS England and PHE have sub-national arrangements for liaison, communication, co-ordination and response during emergency events and how they in turn work with local providers of NHS commissioned care and local authorities.

Figure 3.1: Commissioners of health and social care (all settings) and local authorities

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast – Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Work with partner agencies to ensure that cold weather planning features within wider winter resilience planning.</p> <p>Work with partners to ensure a strategic approach to the reduction of EWDs and fuel poverty is taken across the local health and social care economy.</p> <p>Work with partner agencies to:</p> <ul style="list-style-type: none"> develop a shared understanding of EWDs and what partners can do to reduce them identify those most at risk from seasonal variations improve winter resilience of those at risk ensure a local, joined-up programme is in place to support improved housing, heating and insulation, including uptake of energy efficient, low carbon solutions achieve a reduction in carbon emissions and assess the implications of climate change <p>Consider how your winter plans can help to reduce health inequalities, target high risk groups and address the wider determinants of health.</p> <p>Ensure that organisations and staff are prompted to signpost vulnerable clients onwards (eg for energy efficiency measures, benefits or related advice).</p> <p>Work with partners and staff on risk reduction awareness (eg flu vaccination for staff in September/October), information and education.</p> <p>Engage with local VCS organisations for planning and implementation of all stages of the plan.</p>	<p>Communicate public health media messages (see executive summary).</p> <p>Consider the revisions to the CWP and ensure that the changes are understood across the system. Work with partner agencies to co-ordinate locally appropriate cold weather plans.</p> <p>Ensure key partners, including all managers of care, residential and nursing homes are aware of the alert system and can access advice.</p> <p>Review the distribution of the alerts across the system and ensure staff are aware of winter plans and advice.</p> <p>Ensure that local organisations and professionals are taking appropriate actions in light of the cold weather alerts in accordance with local and national CWP.</p> <p>Ensure that organisations and staff are prompted to signpost vulnerable clients onwards (eg for energy efficiency measures, benefits or related advice).</p> <p>Liaise with providers of emergency shelter for homeless people to agree plans for severe weather and ensure capacity to scale up provision.</p> <p>Support communities to help those at risk. Support the development of community emergency plans.</p> <p>Identify which local health, social care and voluntary and community sector organisations are most vulnerable to the effects of winter weather. Agree plans for winter surge in demand for services. Make sure emergency contacts are up to date.</p>	<p>Continue to communicate public health messages.</p> <p>Communicate alerts to staff and make sure that they can take appropriate actions.</p> <p>Ensure partners, including all managers of care, residential & nursing homes are aware of the alerts and can access advice.</p> <p>Support local VCS organisations to activate community emergency plans.</p> <p>Activate business continuity arrangements and emergency plans as required.</p> <p>Consider how to make best use of available capacity, for example by using community beds for at risk patients who do not need an acute bed and enabling access to step-down care and reablement.</p> <p>Work with partner agencies (eg transport) to ensure road/pavement gritting preparations are in place to allow access to critical services and pedestrian hotspots.</p>	<p>Continue to communicate public health messages.</p> <p>Communicate alerts to staff and make sure that winter plans are in operation.</p> <p>Ensure key partners are undertaking action in response to alerts.</p> <p>Support local voluntary and community sector organisations to mobilise community emergency plans.</p> <p>Ensure continuity arrangements are working with provider organisations.</p> <p>Work with partner agencies (eg transport) to ensure road/pavement gritting arrangements are in effect to allow access to critical services and pedestrian hotspots.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>Response likely to involve:</p> <ul style="list-style-type: none"> national government departments executive agencies public sector, including health sector voluntary and community sector <p>All level 3 responsibilities must be maintained during a level 4 incident</p> <p>Implementation of national emergency response arrangements by central government</p>

Figure 3.2: Provider organisations – health and social care (community services, hospitals, care homes, prisons)

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Ensure that you are engaged with local EPRR and other strategic arrangements.</p> <p>Ensure that your organisation can identify those most vulnerable to cold weather and draw up plans for joined-up support with partner organisations. Agree data-sharing arrangements within information governance principles.</p> <p>Assess the longer-term implications of climate change; reduction in carbon emissions; and sustainability for longer-term business continuity.</p> <p>Consider how to best mobilise and engage voluntary and community sector organisations and support the development and implementation of community emergency plans.</p> <p>Make sure that staff have identified all those vulnerable to cold weather and that arrangements are in place to support and protect them appropriately.</p> <p>Work with staff on risk reduction awareness, information and education. Encourage staff to be vaccinated against flu before winter starts.</p> <p>Ensure that the business continuity plan includes severe winter weather. Plan for a winter surge in demand for services.</p> <p>Consider carers needs and support they can continue to give.</p> <p>Work with environmental health officers on HHSRS hazard identification.</p>	<p>Ensure that CW alerts are going to the right staff and appropriate actions are agreed and able to be implemented, especially to protect vulnerable clients. Make sure that staff have identified all those vulnerable to cold weather and that arrangements are in place to support them appropriately.</p> <p>Ensure staff are undertaking appropriate home checks when visiting clients, eg room temperature; medications and food supplies.</p> <p>Hospitals and care, residential and nursing homes: ensure that rooms, particularly living rooms and bedrooms are kept warm (Figure 3.2) and that staff are taking appropriate action to protect residents from cold weather.</p> <p>Work with partner agencies to co-ordinate cold weather plans; ensure data sharing and referral arrangements are in place.</p> <p>Continue to work with staff on risk reduction awareness, information and education. Encourage staff to be vaccinated against flu, if not already.</p> <p>Work with local authority teams to identify accident hotspots on pavements or roads, advise on gritting priorities to prevent accidents, and ensure access by utilities and other essential services.</p> <p>Ensure staff aware of the business continuity plan for winter weather; plan for a winter surge in demand.</p> <p>Ensure carers are receiving advice and support.</p>	<p>Communicate alerts to staff and ensure that locally agreed CWP actions take place, especially those to protect vulnerable patients/ clients.</p> <p>Continue to ensure local actions for the vulnerable such as:</p> <ul style="list-style-type: none"> • arranging daily contacts/visits • ensuring staff are undertaking appropriate home checks when visiting clients, eg room temperature; medications and food supplies • ensure carers are receiving appropriate advice and support. <p>Hospitals and care, residential and nursing homes: continue to ensure that rooms, particularly living rooms and bedrooms are kept warm (Section 4.1 and Section 4.2).</p> <p>Activate business continuity arrangements and emergency plans as required. Activate plans to deal with a surge in demand for services.</p>	<p>Communicate alerts to staff and ensure that locally agreed actions take place, esp those to protect vulnerable patients/clients.</p> <p>Implement local plans for contacting the vulnerable. Consider daily visits/ phone calls for high-risk individuals living on their own who have no regular contacts.</p> <p>Ensure carers are receiving appropriate advice and support.</p> <p>Implement plans to deal with surge in demand.</p> <p>Implement business continuity arrangements.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>All level 3 responsibilities must be maintained during a level 4 incident.</p> <p>Implementation of national emergency response arrangements by central government.</p> <p>Continue to implement business continuity arrangements.</p>

Figure 3.3: Frontline staff – health and social care, voluntary and community sector (including care homes)

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Work within your organisation and with partner organisations to ensure that systems are developed to support the identification and sharing of information between agencies of people who may be vulnerable to cold weather.</p> <p>Systematically work to improve the resilience of vulnerable people to severe cold.</p> <p>Ensure that all staff have been made aware of the cold weather plan and the dangers of cold weather to health and know how to spot signs and symptoms.</p> <p>Use clinic attendances and home visits as opportunities to identify vulnerable people and discuss winter preparedness.</p> <p>Work with at-risk individuals, their families and carers to ensure that they are aware of the dangers of cold weather and cold housing and how access support; ensure that there are clear arrangements for 'signposting' to other services (eg home insulation schemes; benefits entitlements) when identified in "clinical" situations.</p> <p>Work with partners to ensure that vulnerable patients/clients have access to fuel supplies. Link to energy supplier priority service registers as required.</p> <p>Ensure that clients and colleagues are aware of, and taken advantage of flu and other vaccination programmes.</p>	<p>Identify those at risk on your caseload and make necessary changes to care plans for high-risk groups.</p> <p>For those with multiple agency inputs, ensure that the key worker is clearly identified and care plans consider measures to reduce risk from cold weather.</p> <p>Check client's room temperature if visiting. Ensure that they have at least one room which meets recommended room temperatures.</p> <p>Remind clients of the actions they can take to protect themselves from the effects of severe cold; including warm clothing, warm food and drinks; keeping active as much as they are able within the context of their care plan.</p> <p>Continue to "signpost" those at risk clients/ patients to other services (eg home insulation schemes; benefits entitlements) when identified in "clinical" situations; use the Keep Warm Keep Well booklet for up-to-date patient information and advice.</p> <p>Use resources available to you for raising awareness of the health risks associated with winter weather and cold housing (for example, pharmacists have a key role in reminding people to have sufficient medicine and help with preventive medicines managements).</p> <p>Encourage clients and colleagues to be vaccinated against flu, if not already.</p>	<p>As appropriate, contact those most at risk and implement care plans.</p> <p>Continue to check client's room temperature if visiting to ensure that clients are warm. Ensure that they have at least one room which meets recommended room temperatures.</p> <p>Ensure urgent signposting for those at risk (eg in cold housing) to appropriate services.</p> <p>Continue to remind clients of the actions they can take to protect themselves from the effects of severe cold.</p> <p>Consider how forecast weather conditions may impact on your work – and make appropriate arrangements.</p> <p>Make sure you and your teams are prepared for an influx of weather-related injuries and illnesses.</p>	<p>As appropriate, contact those at risk (visit, phone call) daily.</p> <p>Ensure staff can help and advise clients.</p> <p>Other actions as per level 2.</p> <p>Maintain business continuity.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>Continue actions as per level 3 unless advised to the contrary.</p>

Figure 3.4: GPs and practice staffⁱ

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Be aware of emergency planning measures relevant to general practice. www.england.nhs.uk/ourwork/gov/epr</p> <p>Promote flu immunisation to both staff and patients.</p> <p>Ensure GPs and staff are aware of local services to improve warmth in the home.</p> <p>Consider training on seasonal weather and the identification of vulnerable individuals to help staff be more aware of the effects of cold weather on health; those groups of patients likely to be most vulnerable; and how they can signpost patients on to other services.</p> <p>Consider utilisation of tools to aid systematic identification of vulnerable individuals.</p> <p>Consider using opportunistic approaches to signpost appropriate patients to other services when they present for other reasons. For example, flu jab clinics can be an opportunity to promote core public health messages with vulnerable individuals.</p>	<p>Staff training should include a specific session on the CWP and cold weather resilience where required, relevant and appropriate to local conditions.</p> <p>Consider how you can promote key public health messages in the surgery. For example, take advantage of clinical contacts to reinforce public health messages about cold weather and cold homes on health.</p> <p>Get a flu jab to help protect you and your patients</p> <p>Consider using a cold weather scenario as a table-top exercise to test your business continuity arrangements.</p> <p>Be aware of systems to refer patients to appropriate services from other agencies.</p> <p>When making home visits, be aware of the room temperature in the household, and if required, know how to advise on levels that are of concern and as necessary, to signpost to other services.</p> <p>Consider using Keep Warm, Keep Well booklet for up-to-date information and advice for patients.</p>	<p>Take advantage of clinical contacts to reinforce public health messages about cold weather and cold homes on health.</p> <p>When prioritising visits, consider vulnerability to cold as a factor in decision making.</p>	<p>Be aware of a possible surge in demand in the days following a cold spell.</p> <p>Ensure that staff are aware of cold weather risks and are able to advise patients appropriately.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>Continue actions as per level 3 unless advised to the contrary</p>

ⁱ Note: Individual practices will wish to consider the activities noted above; however these should ideally occur throughout a locality. As such they may be organised by practices collectively, organised by NHS England primary care commissioners, or they could be based within an individual practice.

Figure 3.5: Voluntary and community sector

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Engage with local statutory partners to agree how the community and voluntary sector can contribute to the local community resilience arrangements</p> <p>Develop a community emergency plan to:</p> <ul style="list-style-type: none"> • identify and support vulnerable neighbours in the winter • assess the impact severe weather might have on the provision and use of usual community venues • ensure that pavements and public walkways are cleared of snow and ice in the local community • agree support, resources and training to maximise effective use of volunteers • support recruitment of volunteers • agree mechanisms for distributing food, fuel, emergency heating, health, social care and other provision to vulnerable people • review emergency housing and hostel provision • agree arrangements with other community groups to maximise contact with vulnerable people. • identify available services for vulnerable people and agree signposting arrangements with providers 	<p>Test the community emergency plan to ensure that roles and responsibilities and actions are clear.</p> <p>Set up rotas of willing volunteers to keep the community safe during inclement weather and to check on vulnerable people and neighbours.</p> <p>Support the provision of appropriate advice about the health risks of cold weather/cold housing especially with vulnerable people.</p> <p>Ensure that there is a business continuity plan for severe winter weather to ensure support can continue to be given to vulnerable people.</p> <p>Actively engage vulnerable people known to be at risk and check on welfare regularly and support them to seek help if necessary.</p>	<p>Activate the community emergency plan.</p> <p>Activate the business continuity plan.</p> <p>Continue to actively engage vulnerable people known to be at risk and check on welfare regularly and support them to seek help if necessary.</p> <p>Stay tuned to the weather forecast.</p>	<p>Implement community emergency plan.</p> <p>Contact vulnerable people to ensure they are safe and well and support them to seek help if necessary.</p> <p>Ensure volunteers are appropriately supported.</p> <p>Implement the business continuity plan.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>Continue actions as per level 3 unless advised to the contrary.</p> <p>Ensure volunteers are appropriately supported.</p>

Figure 3.6: National level: NHS England, PHE, DH, Met Office, other government departments

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All Year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November to 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>The Cabinet Office will take the lead on coordinating and working across government to prepare for winter weather. Individual government departments will work with their partners on winter preparations.</p> <p>National implementation of the National Adaptation Programme report¹⁰ actions will continue, improving protection from severe weather events.</p> <p>DH, PHE and NHS England will look to improve monitoring and analysis of winter-related illness and deaths and evaluate the CWP.</p> <p>PHE and NHS England will issue general advice to the public and professionals and work closely with the NHS, other government departments and other national organisations that produce winter warmth advice and support to ensure maximum reach.</p>	<p>Preparations will be the overall responsibility of PHE in collaboration with the Met Office, NHS England, DH and local bodies.</p> <p>PHE and NHS England will make advice available to the public and professionals as appropriate via NHS Choices, NHS England, DH (GovNet), and Met Office websites.</p> <p>NHS England will ensure national guidance is cascaded to local services, and identify organisations most vulnerable to cold weather.</p> <p>NHS England will continue to hold health services to account for taking appropriate actions to prepare for cold weather.</p> <p>Cold Weather Alerts will be sent by the Met Office to the agreed list of organisations as illustrated in figure 2.5. PHE and NHS England will cascade the alerts to sub-national units within their organisations.</p> <p>DH will liaise with Cabinet Office and other government departments to ensure agreed responses are mobilised as required. DCLG will share information with LRFs.</p> <p>PHE will routinely monitor syndromic, influenza, norovirus and mortality surveillance data.</p>	<p>A level 2 alert will be sent by the Met Office to the agreed list of organisations and Category 1 responders as noted in Figure 2.4.</p> <p>Central government departments, which should then cascade the information through their own stakeholder networks and frontline communication systems.</p> <p>DH will ensure other government departments, particularly DCLG RED, are aware of the change in alert level and brief ministers as appropriate.</p> <p>PHE will make advice available to the public and professionals in affected regions via NHS Choices, NHS England, DH (GovNet), and Met Office websites.</p> <p>NHS England will continue to hold health services to account for taking appropriate actions to prepare for cold weather.</p> <p>PHE will continue to monitor syndromic, influenza, norovirus and mortality surveillance data.</p>	<p>As per level 2 arrangements.</p> <p>Met Office will continue to monitor and forecast temperatures in each area, including the likely duration of the period of severe winter weather, the likely temperatures to be expected and the probability of other regions exceeding the level 3 threshold.</p> <p>NHS England will muster mutual aid when requested by local services.</p> <p>PHE will continue to monitor syndromic, influenza, norovirus and mortality surveillance data.</p>	<p>Level 4 alert issued at national level in light of cross-government assessment of the weather conditions, coordinated by the Civil Contingencies Secretariat (CCS) based in the Cabinet Office.</p> <p>Response likely to involve:</p> <ul style="list-style-type: none"> • national government departments • executive agencies • public sector, including health sector • voluntary and community sector <p>Implementation of national emergency response arrangements by central government.</p>

Figure 3.7: Individuals

Level 0	Level 1	Level 2	Level 3	Level 4
<p>Year-round planning</p> <p><i>All Year</i></p>	<p>Winter preparedness and action</p> <p><i>1 November - 31 March</i></p>	<p>Severe winter weather is forecast - Alert and readiness</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow is predicted with 60% confidence</i></p>	<p>Severe weather action</p> <p><i>Mean temperatures of 2°C and/or widespread ice and heavy snow</i></p>	<p>Major incident – Emergency response</p>
<p>Seek good advice about improving the energy efficiency of your home and staying warm in winter; undertake energy efficiency improvements to your home or encourage your landlord to do so.</p> <p>If you are a tenant and your heating is defective, contact your housing provider/landlord</p> <p>Check your entitlements and benefits; seek income maximisation advice to get benefits and other services; seek advice from your fuel supplier or local advice provider if you have fuel debt or difficulties paying for or affording sufficient fuel.</p> <p>Ask your fuel and water supplier about their Priority Service Register for vulnerable customers, what this provides and if you are eligible.</p> <p>Check that your heating is working properly; make sure that you have access to sufficient fuel supplies for the winter period especially if you rely on oil, LPG or wood deliveries. Consider alternative heating measures if required.</p> <p>Have all gas, solid fuel and oil burning appliances (ie boilers, heaters, cookers) serviced by an appropriately registered engineer. Malfunctioning appliances can release carbon monoxide – a gas that can kill. Have flues and chimneys checked for blockages and swept if needed. Fit an audible carbon monoxide alarm (EN50291 compliant).</p> <p>Get a flu jab if you are in a risk group (Sept/Oct).</p>	<p>Find good information about health risks. Try NHS choices at www.nhs.uk.</p> <p>If you are receiving social care or health services ask your GP, key worker or other contact about staying healthy in winter and services available to you. Make sure you have a list of emergency numbers if you need to call for assistance or advice during cold weather.</p> <p>Check room temperatures – especially those rooms where disabled or vulnerable people spend most of their time (see box 3.1)</p> <p>If you or someone else is likely to be restricted to one room during the winter period or during a cold spell make sure that it can be kept at or above recommended temperatures and that you plan what resources you/they need to keep them safe and warm – seek energy advice as necessary.</p> <p>Protect water pipes from freezing by insulating them.</p> <p>Look out for vulnerable neighbours and help them prepare for winter (eg with key contact numbers for emergency situations). Ensure they have access to warm food and drinks and are managing to heat their home adequately.</p> <p>Consider other preventive action you can take (eg perhaps volunteering to help implement the community emergency plan).</p>	<p>Continue to have regular contact with vulnerable people and neighbours you know to be at risk in cold weather – ensure they have access to warm food and drinks and are managing to heat their home adequately.</p> <p>Stay tuned into the weather forecast and ensure you are stocked with food and medications in advance (have deliveries or ask a friend to help).</p> <p>Take the weather into account when planning your activity over the following days. Avoid exposing yourself to cold or icy outdoor conditions if you are at a higher risk of cold-related illness or falls.</p> <p>Discuss with friends and neighbours about clearing snow and ice from in front of your house and public walkways nearby, if you are unable to do this yourself.</p>	<p>Stay tuned into the weather forecast .</p> <p>Heating your home to at least 18°C poses minimal risk to your health when you are wearing suitable clothing.If you have to go out, dress warmly and wear non-slip shoes. Tell someone where you are going and when you will get back. Keep your mobile phone (if you have one) on you and charged.</p> <p>Dress warmly, eat warm food and take warm drinks regularly; keep active.</p> <p>Check on those you know are at risk.</p> <p>If you are concerned about your own health or that of others, alert emergency services.</p> <p>Clear pavements of ice or snow if you are able and if it is essential.</p>	<p><i>Central government will declare a level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health.</i></p> <p>Follow key public health and weather alerts messages as broadcast on the media.</p>

Box 3.1: Recommended minimum indoor temperatures for homes in winter¹⁴

Recommended indoor temperatures for homes in winter

Heating homes to at least 18°C (65F) in winter poses minimal risk to the health of a sedentary person, wearing suitable clothing.

Daytime recommendations:

- the 18°C (65F) threshold is particularly important for people **65 years and over or with pre-existing medical conditions**; having temperatures slightly above this threshold may be beneficial for health
- the 18°C (65F) threshold also applies to **healthy people (1 –to 64 years)***; if they are wearing appropriate clothing and are active, they may wish to heat their homes to slightly less than 18°C (65F)

Overnight recommendations

- maintaining the 18°C (65F) threshold overnight may be beneficial to protect the health of those **65 years and over or with pre-existing medical conditions**; they should continue to use sufficient bedding, clothing and thermal blankets, or heating aids as appropriate
- overnight, the 18°C (65F) threshold may be less important for **healthy people (1 to 64)*** if they have sufficient bedding, clothing and use thermal blankets or heating aids as appropriate

*There is an **existing recommendation** to reduce sudden infant death syndrome (SIDS). Advice is that rooms in which infants sleep should be heated to between 16 to 20°C (61 to 68F)

4. Monitoring and surveillance

4.1 Near real time monitoring and surveillance

PHE, in collaboration with other agencies, provides information on excess mortality and morbidity due to cold weather. Much of this is recorded in as near real-time as possible to provide agencies with a source of intelligence on how health is affected by cold weather and to guide urgent public health action.

Information on cold weather-related illnesses and mortality will be included in routine weekly surveillance bulletins, links to which will be posted on the [PHE winter health watch webpage](#) each week. A summary of the findings of the surveillance suitable for a non-technical audience will be presented; further detail can be obtained by clicking through to the relevant bulletins:

- **syndromic surveillance:** PHE will routinely monitor outputs from real-time syndromic surveillance systems including calls to NHS 111, GP in hours and out of hours consultations, and sentinel emergency department attendances for the impact of seasonal infections and cold weather-related morbidity using a range of syndromic health indicators. A routine [weekly syndromic surveillance bulletin](#) and summary report is produced throughout the year
- **seasonal influenza surveillance:** PHE routinely analyses and collates influenza data from a variety of sources producing a [national flu report](#) once a week during the winter season
- **mortality surveillance:** PHE continues to carry out [weekly surveillance to detect](#) acute increases in mortality over and above what is expected for a given time of the year. This is done through statistical modelling of weekly death registration data provided by the Office for National Statistics (ONS) and is available by age-group and region
- **norovirus surveillance:** PHE will continue to monitor outbreak reports from hospitals and laboratory reports of cases of norovirus throughout the winter and will publish a [weekly norovirus bulletin](#)

4.2 NHS activity monitoring

[NHS winter situation reports](#) will be available on the NHS England website and will be published weekly.

NHS England will continue to monitor and publish [A&E activity reports](#) monthly, as it does routinely throughout the year.

4.3 The Public Health Outcomes Framework

The Public Health Outcomes Framework sets out desired outcomes and indicators to help us understand how well public health is being improved and protected. PHE publishes data in an online tool that allows local authorities to compare themselves with other authorities in the region and benchmark themselves against the England average.

Two PHOF outcome indicators are directly linked to efforts to reduce harm from cold: excess winter deaths (4.15) and fuel poverty (1.17), although up to 17 others can be linked to long-term planning for cold weather (see section 4 of the companion document *Making the Case*).

The PHOF EWD indicator is produced by age-group and sex at 'lower tier' local authority level, allowing comparison between local authorities and examination of trends over time. It is based on ONS estimates of EWDs published annually in November of each year, which compares the number of winter deaths (deaths occurring in December to March) with the average of non-winter deaths. This data is not timely enough to guide urgent public health action, but is important for longer-term monitoring, commissioning and advocacy.

4.4 Evaluation

PHE, DH, NHS England and the LGA alongside their partners will annually review the CWP. They will work to review the plan to ensure it is supported by the latest available evidence and continues to meet its strategic objectives.

5. Recommended next steps for the NHS and local authorities

The Cold Weather Plan for England is a good-practice document and the actions denoted are illustrative. It is up to each local authority and its NHS partners to consider the actions in this plan; adapt them and incorporate them as appropriate to the local situation, as a component of wider winter planning arrangements. Local teams from NHS England and PHE are there to support, advise and co-ordinate these arrangements as required.

In light of the guidance and good practice recommendations made in the CWP for England, there are five key messages for all local areas, especially in light of any recent structural changes:

1. All local authorities, NHS commissioners and their partner organisations should consider the CWP for England and satisfy themselves that the suggested actions and the Cold Weather Alert service are understood across their locality. **Local cold weather and winter plans should be reviewed in light of this plan.**
2. NHS and local authority commissioners should review or audit the distribution of the Cold Weather Alerts across the local health and social care systems to satisfy themselves that the **alerts reach those that need to take appropriate actions**, immediately after issue. Figure 2.5 is an illustrative diagram showing a cascade of a Cold Weather Alert message. Local areas need to adapt these to their particular situations and ensure that the cascades are working appropriately.
3. NHS and local authority commissioners should assure themselves that **organisations and key stakeholders are taking appropriate actions** in light of the Cold Weather Alert messages. The actions identified in section 3 are based on the best evidence and practice available, but are illustrative. It is for local areas to amend and adapt this guidance and to clarify procedures for staff and organisations in a way which is appropriate for the local situation. As ever, it is for professionals to use their judgement in any individual situation to ensure that they are doing the best they can for their patient or client.
4. The **voluntary and community sector** can help reduce vulnerability and support the planning and response to cold weather, particularly through identifying and engaging vulnerable people. NHS and local authority commissioners and providers, should take opportunities for closer partnership working with these groups.

5. Reducing excess winter illness and death is not something that can be tackled in the winter alone. It requires a long-term strategic approach by HWBs, directors of public health and commissioners to assess needs and then commission, plan and implement interventions. Action to reduce cold-related harm both within and outside the home should be considered **core business by HWBs** and included in JSNAs and JHWSs.

Appendix 1: The impact of cold weather on health

The impact of cold weather on health is predictable and mostly preventable. Direct effects of winter weather include an increase in incidence of:

- heart attack
- stroke
- respiratory disease
- influenza
- falls and injuries
- hypothermia

Indirect effects of cold include mental health illnesses such as depression, and carbon monoxide poisoning from poorly maintained or poorly ventilated boilers, cooking and heating appliances and heating.

For the purposes of this plan, key groups considered to be particularly at-risk in the event of severe cold weather are summarised in Figure A.1. Further information on the effects of cold on health can be found in *Making the Case*.

Figure A.1: Groups at greater risk of harm from cold weather

- older people (in particular those over 75 years old, otherwise frail, and or socially isolated)
- people with pre-existing chronic medical conditions such as heart disease, stroke or TIA, asthma, chronic obstructive pulmonary disease or diabetes
- people with mental ill-health that reduces individual's ability to self-care (including dementia)
- pregnant women (in view of potential impact of cold on fetus)
- children under the age of five
- people with learning difficulties
- people assessed as being at risk of, or having had, recurrent falls
- people who are housebound or otherwise low mobility
- people living in deprived circumstances
- people living in houses with mould
- people who are fuel poor
- homeless or people sleeping rough
- other marginalised or socially isolated individuals or groups

* Persons, usually older, who have impairment of their activities of daily living. The frailty phenotype or a frailty index can be used to quantify frailty. Frailty in primary care: a review of its conceptualization and implications for practice Alethea Lacas and Kenneth Rockwood BMC Medicine 2012, 10:4 doi:10.1186/1741-7015-10-4

Appendix 2: Identifying vulnerable people

The action tables in section 3 suggest that health and social care teams consider how they might identify vulnerable individuals. This appendix details a number of ongoing initiatives to improve the identification of vulnerable people by these services, although it is acknowledged that vulnerable people not already in receipt of health and social care services can be difficult to identify and support. Involvement of the voluntary and community sector, particularly those that engage with these groups, is crucial.

Opportunistic approaches

Teams may wish to consider opportunistic approaches to signpost potentially vulnerable patients to appropriate services when they present for other reasons eg the **Making Every Contact Count Programme** (MECC), developed in the Yorkshire and the Humber region. It provides frontline staff with behavioural change interventions training. It focuses on providing an informed choice for individuals but with the understanding of the wider determinants of health approach and that behaviour change is not easy for anyone. The MECC programme understands that affordable warmth fits within the context of healthy lifestyles. Partnership referral schemes are strengthened by using this approach. Hence the entire NHS workforce (frontline staff) across the region is being skilled to have 'healthy chats' which include affordable warmth alongside alcohol, diet, exercise and smoking, etc but bespoke to the individual. The NHS is investing in e-learning resources and a mobile app for staff that will include affordable warmth.

The research pilot undertaken for MECC illustrated that empowering staff with the confidence and competence to have these conversations is especially important as personalising the information and understanding an individual's motivation is critical to bringing about behaviour change. Another approach is to train frontline staff on locally available multi-partnership referral schemes where the frontline worker completes a simple referral card on behalf of the client, posts it into a central 'hub' from where the client is then approached by the required agency to offer advice and/or support.

The affordable warmth charity, National Energy Action (NEA), has previously worked with other partnership referral schemes across the country with frontline staff. NEA advocates asking three key questions at contact assessment stages to identify those who are at risk of living in fuel poverty and in cold homes.

The following questions are currently being asked by a wide number of agencies:

1. Is your whole house warm in winter? (This question helps to identify how people are heating their home and whether they are limiting heating to certain rooms).

2. Can you afford to heat your home to a comfortable level? (This question helps to identify whether occupants are meeting 'minimum' recommended temperatures all the time).
3. Can you afford to pay your fuel bills? (This question will flag whether someone has sufficient income to spend on the fuel they need for warmth and comfort).

Toolkits

The **Excess Seasonal Deaths Toolkit**¹² was produced by DH to help local communities to take a systematic approach to reduce the risk of seasonal excess deaths in older people.

The **Keeping Warm in Later Life project (KWILLT)** has recently demonstrated that knowledge and awareness of safe temperatures, and the health impact of cold were low across study population participants. Moreover, older people's values and beliefs can interact in such a way that they often end up being cold at home. The segmentation model which was developed by the team can illustrate the diversity of older people at risk of living in a cold home. It can be used as a reflective tool at a clinical and strategic level to identify and refer vulnerable older people. KWILLT pen portraits and e-learning materials and are available at kwillt.org.

Winter Warmth England – Preparation for Winter. This website provides a suite of resources for the public and professionals. It contains pre-tested messages, images and materials to support interventions that are reaching the right people at the right time; whether this is managers, frontline and community health and social care staff (including voluntary and community sector) the media and crucially, the vulnerable. Key tools include a prompt sheet for community staff visiting homes to pick up on visual and behavioural clues as to whether a person is living in a cold home.

The UK Health Forum Fuel Poverty and Health toolkit: A guide for public health professionals, health and wellbeing boards, and local authorities in England. The guide is intended to be a tool for directors of public health and their teams, health and wellbeing boards, and colleagues across local authorities who want to start, extend or improve their work on fuel poverty.

Public Health England commissioned UCL Institute of Health Equity to produce a **series of evidence reviews** and supporting briefings for local action on health inequalities. Published in September 2014, the documents demonstrate practical local actions that can be taken on a range of social determinants of health. **Review 7** and its **summary briefing note** examines the evidence relating to the impact of fuel poverty on health and health inequalities and sets out some areas for action.

The Healthcare Public Health team at PHE is working in partnership with Muir Gray's Better Value Healthcare. Following piloting with 14 Local Authority public health teams, the Healthcare Public Health team at PHE is revising its **falls and fragility fractures (FFF) system reporting tool**. The tool will collate routinely collected data relating to falls and fragility fractures to support the production of local authority profiles and will also contain information on local information necessary for the effective commissioning of services that needs to be collected.

Shared practice

The **Warm Homes Healthy People Evaluation (WHHP) 2012-13**¹⁵ has shown that the identification of vulnerable people continues to be a challenge – specifically people who are socially isolated or do not engage with services – but several innovative methods were used to improve identification and engagement. Further detail is available in the *Making the Case* document (section 5).

Data sharing between partner organisations is seen as key to identifying vulnerable people, but can be a challenge to targeting interventions. Some approaches that seem to have worked well is where there is an agreement about the value of a single point of referral, when identifying vulnerable residents using multiple agencies (eg Islington's **SHINE project**).

People in receipt of benefits, assisted bin collection lists (where people are unable to move their waste bins from home to the street), mapping, local knowledge from parish councils and village agent schemes, priority users registers (energy companies) and other data sources were used as additional means of identifying potential recipients of WHHP funded interventions.

Healthy Homes on Prescription is a scheme set up in partnership with GPs and Liverpool City Council using a software system alert to identify patients vulnerable to cold weather. GPs have access to co-ordinated hub systems where vulnerable patients can be referred – with their consent – to the Liverpool City Council Healthy Homes scheme and other partners for help and advice on energy efficiency, debt assistance, benefits checks, home safety checks and other interventions.

Key national documents of interest

The **NICE Guidance on Excess winter deaths and morbidity and the health risks associated with cold homes**¹⁵ was published in 2015. It includes an assessment of the evidence surrounding systems and strategies to identify vulnerable and at-risk populations, and the impact these approaches can have. It is aimed at commissioners, managers and practitioners with public health as part of their remit working within the

NHS, local authorities and the wider public, private, voluntary and community sectors. It may also be of interest to members of the public.

The guidance provides recommendations for good practice, based on the best available evidence of effectiveness, including cost effectiveness. The recommendations include the need for strategic approaches, single point of contact services offering tailored solutions to which all who come into contact with vulnerable people can refer.

DECC published a new [Fuel Poverty Strategy for England](#) in 2015 following a public consultation one year earlier. The strategy is underpinned by the fuel poverty target for as many fuel poor homes as reasonably practicable to achieve an energy efficiency standard of Band C by 2030 - which became law in December 2014.

This Strategy builds on a three-year period of detailed work on fuel poverty, which has changed our understanding of the problem and how we need to tackle it. This has included the independent [Hills Poverty Review](#) published in March 2012, a [Framework for Future Action on Fuel Poverty](#) published in July 2013 and the introduction of an ambitious new fuel poverty target.

Alongside the strategy, DECC has also published [Understanding the Behaviour of Households in Fuel Poverty](#) - a literature review aimed to deepen our understanding of the behaviour of fuel poor household. In addition to this DECC is carrying out ongoing research on the behaviours of households in fuel poverty, the findings of which should be available in late Spring 2016. [Fuel Poverty \(England\) Regulations 2014](#), a [Fuel Poverty Energy Efficiency Rating Methodology](#) and the first [Triennial Review of the Fuel Poverty Advisory Group](#) (FPAG) have also been published.

The Department of Energy and Climate Change (DECC) commissioned National Energy Action (NEA) to carry out an online survey to catalogue local schemes that are targeting individuals with health problems for energy efficiency measures and other fuel poverty interventions. The result was a [Catalogue of health-related fuel poverty schemes](#) which presents information collected from survey responses and interviews about 75 unique schemes.

[The National Adaptation Programme \(NAP\)](#) sets out what government, businesses and society are doing to become more climate ready. It contains a register of actions and aligns risks identified in the Climate Change Risk Assessment to actions being undertaken or to be undertaken and the timescales according to each theme. In response to these actions, the CWP aims to support local areas' preparation for, response to and recovery from periods of cold weather through evidence based guidance and actions. Local areas are encouraged to promote and implement the CWP and raise awareness of the potential impacts of cold weather and actions that can be taken to protect health.

Appendix 3: Public health core messages

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

Level 1: Winter preparedness and action

This is in force from 1 November to 31 March and indicates that actions should be taking place to protect health from cold weather, and that preparations should be in place to ensure service continuity in the event of severe winter weather. No warning is required, unless the situation worsens to warrant a level 2 alert. A spell of chilly weather might warrant a message along the lines of:

“If this does turn out to be a spell of severe cold weather, we’ll try to give you as much warning as possible. But in the meantime, if you want advice about protecting your health from the cold go to the winter health pages at NHS Choices (www.nhs.uk). If you are worried about your health or that of somebody you know, ring NHS 111.”

Level 2: Alert and readiness

The Met Office, in conjunction with PHE, is issuing the following cold weather warning for [regions identified]:

“Severe cold weather 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 the winter health pages at NHS Choices (www.nhs.uk) or from your local chemist. If you are worried about your health or that of somebody you know, ring NHS 111.”

Level 3 and 4: Severe cold weather action/emergency

The Met Office, in conjunction with PHE, is issuing the following severe cold weather advice for [regions identified]:

“Make sure that you stay warm. If going outside make sure you dress appropriately. If indoors, make sure that you keep your heating to the right temperature; heating your home to at least 18°C in winter poses minimal risk to your health when you are wearing suitable clothing . If there is anyone you know who might be at special risk, for example, an older person living on their own, make sure they know what to do to stay warm and are well stocked with food and medications. If you are worried about your health or that of somebody you know, ring NHS 111”

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References

1. ONS (2012): Excess Winter Mortality in England and Wales, 2012/13 (Provisional) and 2011/12 (Final).
<http://www.ons.gov.uk/ons/search/index.html?newquery=excess+winter+deaths>
2. Department of Health (2010) 'Winter Kills' in 2009 Annual Report of the Chief Medical Officer. http://www.sthc.co.uk/Documents/CMO_Report_2009.pdf
3. Marmot Review Team (2011): The Health Impacts of Cold Homes and Fuel Poverty. <http://www.instituteoftheequity.org/projects/the-health-impacts-of-cold-homes-and-fuel-poverty/the-health-impacts-of-cold-homes-and-fuel-poverty-full-report.pdf>
4. Public Health England (2013): Excess winter mortality 2012-13.
<https://www.gov.uk/government/publications/excess-winter-mortality-2012-to-2013>
5. Healy, J. (2003) Excess winter mortality in Europe: a cross country analysis identifying key risk factors in British Medical Journal
<http://jech.bmj.com/content/57/10/784.full>
6. Hajat, S., Vardoulakis, S., Heaviside, C. & Eggen, B., 2014: Climate change effects on human health: projections of temperature-related mortality for the UK during the 2020s, 2050s and 2080s. In: J Epidemiol Community Health. Available at:
<http://jech.bmj.com/content/early/2014/01/08/jech-2013-202449.full>
7. Department for Energy and Climate Change (2015): Cutting the cost of keeping warm: a fuel poverty strategy for England.
<https://www.gov.uk/government/publications/cutting-the-cost-of-keeping-warm>
8. Department of Health (2012) Improving outcomes and supporting transparency. Part 1A: A public health outcomes framework for England, 2013-2016.
<https://www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency>
9. Benyon C, Wyke, S., Jarman, I et al. (2011) The cost of emergency hospital admissions for falls on snow and ice in England during winter 2009/10: a cross sectional analysis Environmental Health 10:60.
<http://www.ehjournal.net/content/10/1/60>
10. The Marmot Review Team (2010) Fair Society, Healthy Lives. Strategic Review of Health Inequalities in England post 2010 <http://tinyurl.com/Fair-Society-Healthy-Lives>

11. The Care Act (2014). <http://www.legislation.gov.uk/ukpga/2014/23/contents/enacted>
12. Effective Action (2013) SWEP and Extended Winter Provision Engaging Rough Sleepers In Winter. www.homeless.org.uk/sites/default/files/site-attachments/2014-2015%20Severe%20Weather%20Guidance.pdf
13. Department of Health (2010) How to Reduce the Risk of Seasonal Excess Deaths Systematically in Vulnerable Older People to Impact at Population Level. <http://tinyurl.com/Seasonal-Excess-Death-Toolkit>
14. PHE (2014) Minimum home temperature thresholds for health in winter - A systematic literature review. <https://www.gov.uk/government/publications/cold-weather-plan-for-england>
15. Public Health England (2013) Evaluation Report: Warm Homes Healthy People Fund 2012-13 <http://tinyurl.com/Warm-Homes-2012-13>
16. NICE (2013) Excess winter deaths and illnesses <https://www.nice.org.uk/guidance/ng6>