

# PUBLIC HEALTH GUIDANCE

## FINAL SCOPE

### 1 Guidance title

Excess winter deaths and morbidity and the health risks associated with cold homes

#### 1.1 *Short title*

Excess winter deaths

### 2 Background

- a) The National Institute for Health and Care Excellence (NICE) has been asked by the Department of Health (DH) to develop guidance aimed at preventing extra winter deaths and ill health arising from cold homes. In England, December to March is defined as winter. So the number of 'excess winter deaths' is calculated by comparing the numbers between December and March with the average during the preceding August to November and the following April to July (Office for National Statistics 2012).
- b) Although more deaths overall occur in the winter, some summer conditions are also associated with an increase in death rates, in particular heatwaves. In the summer of 2006, a linear relationship between temperature and weekly mortality was observed in England. An estimated 75 extra deaths a week occurred for each degree increase in temperature (DH 2012a). While this is a significant issue (and may become more so if predictions of more extreme weather events are correct) this guidance will not address it directly.

- c) This guidance will support a number of related policy documents including:
- ‘A new approach to child poverty’ (Department for Work and Pensions and Department for Education 2011)
  - ‘Caring for our future’ (DH 2012b)
  - ‘Cold weather plan’ (DH 2012c)
  - ‘Green deal’ (Department of Energy and Climate Change 2012a)
  - ‘Guidance to English energy conservation authorities issued pursuant to the Energy Conservation Act 1995’ (Department of Energy and Climate Change 2012b)
  - ‘Healthy lives, healthy people’ (DH 2010)
  - ‘Public health outcomes framework’ (DH 2012d)
  - ‘The carbon plan’ (Department of Energy and Climate Change 2011)
  - Warm Homes and Energy Conservation Act 2000 (HM Government 2000).
- d) This guidance will provide recommendations for good practice, based on the best available evidence of effectiveness, including cost effectiveness. 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.

This guidance will be developed using the NICE [public health guidance process and methods guides](#).

### 3 The need for guidance

- a) Cold weather and cold housing is linked to an increase in deaths and illness. In 2011/12 there were 22,700 excess winter deaths in England. A 5-year moving average shows a sharp decrease between 1960/61 and 1973/74, followed by a more gradual decrease up to 1998/99. Since then, there have been an average 26,700 excess winter deaths a year in England and Wales (Office for National Statistics 2012). In 2009, it cost the NHS an estimated £859 million annually to treat winter-related disease due to cold housing in the private sector (DH 2009). Using 2011/12 prices, Age Concern estimated that this figure had risen to £1.36b (Age Concern, undated). Liddell (undated) estimates that for every £1 spent on energy efficiency measures, the NHS makes a saving of 42p. There are also likely to be significant social care costs.
- b) Circulatory (37%) and respiratory diseases (32%) are the 2 major conditions linked to excess winter deaths. Respiratory diseases have the largest seasonal effect, partly due to influenza. Deaths from dementia and Alzheimer's disease are also more frequent in the winter, possibly partly because people with these conditions are vulnerable to respiratory diseases. Only a small proportion of excess winter deaths are caused by accidents (Office for National Statistics 2011). Studies that aimed to improve heating and energy-efficiency in the home also identified potential improvements in health. (This included improvements in general and respiratory health, as well as mental health and wellbeing.) Other impacts included reduced fuel bills, less time off work or school and increased social contact in the home (Thompson et al. 2009).
- c) It is important to ensure housing is energy-efficient because heating a house that is not energy-efficient adds to carbon dioxide emissions. This, in turn, impacts on health through global climate change. Furthermore, measures to address ill health through

heating and energy efficiencies have the potential to increase local economic activity (by increasing jobs insulating and upgrading houses) and so increase wellbeing.

- d) In many countries, more people die in the winter than in the summer. However, in some countries where extreme winter weather is common, the rates of excess winter deaths are lower. This is probably because they are more prepared for the cold than warmer countries. (For example, the housing stock in warmer countries is more likely to be poorly insulated.) Evidence also shows that the number of deaths could be more closely related to the number of cold days experienced, rather than the average temperature (Wilkinson et al. 2004). Some evidence suggests that internal and external temperatures each account for around half of temperature-related excess winter deaths (Hills 2011). Behaviour outside the home (wearing suitable clothing, undertaking outdoor exercise) is also related to mortality risk (DH 2009).
- e) Living in fuel poverty or cold housing can adversely affect the health and development of children, the mental health of adolescents and the physical health and wellbeing of adults. (A household is currently defined as being 'fuel poor' if it needs to spend more than 10% of its income on fuel for adequate heating<sup>1</sup>.) It also increases the risk of death and physical or mental ill health among older people (Marmot review team 2011). For infants, after taking other factors into account, living in fuel poor homes is associated with a 30% greater risk of admission to hospital or attendance at primary care facilities. For children, it is associated with a significantly greater risk of health problems, especially respiratory problems. Poorer weight gain and lower levels of

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<sup>1</sup> The Hills review suggests moving to a 'low income high cost' indicator. This would mean a household is considered 'fuel poor' when its fuel costs are above average and its income is below the poverty line (once housing and fuel costs have been taken into account). It also proposed a new indicator, the 'fuel poverty gap'. This would be calculated by working out how much the assessed energy needs of fuel-poor households exceed the threshold for reasonable costs.

adequate nutritional intake have also been found. Adolescents living in fuel poor homes are at significantly greater risk of multiple mental health problems (Liddell 2008).

- f) Over 90% of excess winter deaths occur among the over-65s and, in particular, among the over-85s. In 2011/12, 10,700 males and 13,300 females in England and Wales were affected. (There was a larger proportion of women in the over-75s group, where the majority of these deaths occurred.) Much of this concentration of deaths in older age groups is due to seasonal distribution of causes of death, rather than greater sensitivity to seasonal change with age (Dinsdale et al. 2006). Cold housing and weather may also disproportionately effect people with disabilities and some long-term illnesses (Power et al. 2009).
- g) Excess winter death rates are not necessarily linked to deprivation. This might be because a higher percentage of those in lower socioeconomic groups are living in social housing. This tends to be more energy efficient than housing in other sectors. The average standard assessment procedure (SAP) rating is a measure of a property's energy efficiency (a higher rating indicating a more energy-efficient property). In 2009, it was 51.3 for owner-occupied properties, 51.9 for private rented, 59.6 for local authority and 62.4 for housing association properties (Department for Communities and Local Government 2011). Links to deprivation may be more likely in rural areas, depending on the measure used (Davie et al. 2007; Hajat et al. 2007; Lawlor et al. 2000; Shah and Peacock 1999).

## **4 The guidance**

Public health guidance will be developed according to NICE processes and methods. For details see section 5.

This document defines exactly what this guidance will (and will not) examine, and what the guidance developers will consider. The scope is based on a referral from the DH (see appendix A).

## **4.1      *Who is the focus?***

### **4.1.1      **Groups that will be covered****

Everyone. But there will be a particular focus on those aged 25 and under, adults aged 60 and over and people with a disability or a long-term health condition.

### **4.1.2      **Groups that will not be covered****

None.

## **4.2      *Activities***

### **4.2.1      **Activities/measures that will be covered****

Interventions delivered during cold weather periods or as part of a longer-term strategy. They may focus on:

- individuals (for instance, by encouraging someone to take up a grant)
- groups (for example, by identifying at-risk groups, such as older people with pre-existing conditions or people living in hard-to-heat homes)
- an area-based approach.

They include:

- a) Measures to increase the internal temperature in the home (or to expand the area of the home that is warm enough to live in). For example, energy efficiency and heating measures, including insulation.
- b) Activities to make it affordable to maintain a warm enough temperature in the home. For example, activities to encourage uptake of benefits, to boost income or to access the most appropriate fuel pricing tariff.

c) Activities to support healthy behaviours among those at risk due to cold temperatures, for example:

- encouraging people to wear appropriate clothing – particularly outside
- information/mass-media campaigns
- provision of advice
- ‘neighbourliness’ initiatives.

d) Activities and interventions to address the negative health outcomes of cold weather and cold homes, for example:

- medication checks
- vaccination programmes and other healthcare services
- technological interventions (for example, alarms, fall alarms, distance temperature monitoring, provision of weather warnings to professionals)
- snow and ice clearance and gritting of roads and pavements.

Also see the logic model in appendix D.

#### **4.2.2 Activities/measures that will not be covered**

National policy.

### **4.3 Key questions and outcomes**

Below are the overarching questions that will be addressed along with some of the outcomes that would be considered as evidence of effectiveness.

**Question 1:** Which subpopulations are more vulnerable to cold temperatures and poorly heated or expensive-to-heat homes? What factors contribute to vulnerability and how do these factors interact with each other?

**Expected outcome/s:** Reduction in deaths, hospital admissions and length of stay, primary care visits and admissions to residential care; changes in medication; changes to mental wellbeing; changes in activities inside and outside the home; changes in quality of life.

**Question 2:** How effective and cost effective are interventions and approaches to reduce excess winter deaths and morbidity and the negative health consequences of cold weather and cold homes?

- How effective are these interventions?
- How does effectiveness vary according to demographic, geographic, health, housing and socioeconomic characteristics?
- What impact do these interventions have on health inequalities?
- What impact do these interventions have on the wider determinants of health (for example, carbon dioxide emissions)?
- What adverse effects are associated with changes to energy efficiency or the cost of heating? (For example, reduced ventilation may be associated with increased levels of indoor air pollution, including radon, and overheating may be associated with an increased risk of cot death.)

**Expected outcome/s:** Reduced deaths, hospital admissions and length of stay, primary care visits and admissions to residential care; changes in medication; changes to mental wellbeing; impact on learning; impact on local economic activity; carbon dioxide emissions; household fuel poverty; changes in activities inside and outside the home; changes in energy efficiency or cost of heating of houses.

**Question 3:** What systems and strategies have been used to identify vulnerable and at-risk populations and what impact do they have?

- What activities and interventions support effective delivery and implementation of approaches to reduce excess winter deaths and the negative health consequences of cold weather?
- What influences the effectiveness of an integrated approach to addressing risk and vulnerability?
- What are the most effective methods for reaching at-risk and vulnerable subpopulations?



- What approaches increase uptake and enhance the acceptability of effective interventions?
- What facilitators and barriers influence delivery and implementation?

**Expected outcome/s:** Identification of 'at risk' people or properties, implementation of effective interventions, changes in the local infrastructure, systems and planning to address excess winter deaths.

#### **4.4 Status of this document**

This is the final scope, incorporating comments from a 4-week consultation.

## **5 Further information**

The public health guidance development process and methods are described [in Methods for development of NICE public health guidance \(third edition\)](#) (2012) and [The NICE public health guidance development process \(third edition\)](#) (2012).

## **6 Related NICE guidance**

### ***Published***

[Social and emotional wellbeing – early years](#) NICE public health guidance 40 (2012)

[Chronic obstructive pulmonary disease](#) NICE quality standard 10 (2011)

[Chronic obstructive pulmonary disease \(updated\)](#) NICE clinical guideline 101 (2010)

[Prevention of cardiovascular disease](#) NICE public health guidance 25 (2010)

[Depression in adults \(update\)](#) NICE clinical guideline 90 (2009)

[Influenza – zanamivir, amantadine and oseltamivir \(review\)](#) NICE technology appraisal 168 (2009)

[Reducing differences in the uptake of immunisations](#) NICE public health guidance 21 (2009)

[Social and emotional wellbeing in secondary education](#) NICE public health guidance 20 (2009)

[Influenza \(prophylaxis\) – amantadine, oseltamivir and zanamivir](#) NICE technology appraisal 158 (2008)

[Mental wellbeing and older people](#) NICE public health guidance 16 (2008)

[Social and emotional wellbeing in primary education](#) NICE public health guidance 12 (2008)

[Falls: the assessment and prevention of falls in older people](#). NICE clinical guideline 21 (2005)

### ***In development***

[Implementing vitamin D guidance](#). NICE public health guidance (publication expected June 2014)

[Sunlight exposure: benefits and safety](#). NICE public health guidance (publication date to be confirmed)

## **Appendix A Referral from the Department of Health**

The Department of Health asked NICE to produce:

‘Guidance for commissioners and practitioners working in local authorities and health services on effective implementation and delivery of approaches for prevention of excess winter deaths and morbidity and the health risks associated with cold homes. Focus specifically on vulnerable children and older people to promote and protect their health and wellbeing both in the short and longer term.

‘The guidance would aim to define the systems required for an integrated approach to identification of risk and vulnerability and the provision of effective interventions (including insulation, fuel tariffs, uptake of benefits, and heating improvements)... it would also be helpful if you could consider including the specific issue of excess winter deaths in rural areas.’

## Appendix B Potential considerations

It is anticipated that the Public Health Advisory Committee (PHAC) will consider the following issues:

- Target audience, actions taken and by whom, context, frequency and duration.
- Whether actions are based on an underlying theory or conceptual model.
- Whether an intervention is effective and cost effective.
- Critical elements. For example, whether effectiveness and cost effectiveness varies according to:
  - the diversity of the population (for example, in terms of the user's age, gender or ethnicity)
  - the status of the person delivering it and the way it is delivered
  - its frequency, length and duration, where it takes place and whether it is transferable to other settings
  - its intensity.
- Any trade-offs between equity and efficiency.
- Any factors that prevent – or support – effective implementation, such as 'hard to treat', off-grid or listed properties. (Off-grid means properties that are not connected to the national energy grids.)
- Any adverse or unintended effects, such as increases in indoor air pollution.
- Current practice.
- Availability and accessibility for different groups.

## Appendix C References

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Department of Health (2010) Healthy lives, healthy people. London: Department of Health

Department of Health (2012a) Heatwave plan for England: making the case – the impact of heat on health – now and in the future. London: Department of Health

Department of Health (2012b) Caring for our future. London: Department of Health

Department of Health (2012c) Cold weather plan for England. London: Department of Health

Department of Health (2012d) Public health outcomes framework. London: Department of Health

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## Appendix D Logic model

