

## Excess Winter Deaths in North Lincolnshire 2014/15

### Headlines

- Most local authority districts in England and Wales experience higher levels of mortality in the winter months than in the rest of the year. A measure of this increase is provided on an annual basis in the form of an Excess Winter Mortality (EWM) count and index.
- Excess winter mortality (EWM) is an issue of concern for public health, because there is strong evidence that many of these deaths are preventable. Hence the need to adopt a strategic approach to reducing excess winter deaths and the importance of monitoring these deaths closely.
- The business case for action goes beyond reducing excess winter mortality and includes improving overall health and wellbeing, long term conditions, shifting care closer to home as well as the energy efficiency and climate change agenda.
- Excess winter deaths can vary over time and are usually associated with higher than average levels of influenza, lower temperatures, as well as other factors, such as the level of underlying disease in the population.
- Excess winter deaths are higher amongst females than males, and are highest amongst older people, especially those aged 85+, and people with pre-existing conditions which makes them vulnerable to infection.
- The main causes of excess winter deaths are respiratory conditions such as pneumonia and chronic bronchitis, and circulatory diseases such as heart disease and stroke.
- Heavy snow and ice have a smaller, albeit important, impact, resulting in falls and injuries. These weather conditions can also significantly disrupt the delivery of health and social care services which will have a direct impact on health and wellbeing.
- Older people with underlying health conditions are most vulnerable to EWM, especially those aged 75 years and older.
- North Lincolnshire's excess winter mortality rates have historically compared well with the regional and national average, although they can fluctuate quite significantly from one year to the next.
- For example, in 2011/12 there were 70 excess winter deaths in North Lincolnshire, giving an index value of 12.5. This rose to 215 excess deaths in the 12 month period between July 2014 to June 2015, giving an index value of 40.9. This was significantly above the national average of 27.8 and was the highest recorded value for North Lincolnshire for almost 2 decades.
- This rise appears more pronounced, partly as a result of a lower than average number of winter deaths in the previous year. However, excess winter mortality was still

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notably high last year, suggesting the need to ensure plans are activated to reduce excess winter illness and deaths, even during relatively mild winters.

- Nationally, the major contributory factors to a rise in excess winter deaths have been a longer than average flu season, lower than average winter temperatures and a longer than average winter.
- However winter related deaths and ill health can occur at any temperature below 5-8 C and may occur some time after a short cold snap, even when the rest of the winter was relatively mild. People living in cold homes which are not energy efficient and are expensive to heat, are at particularly high risk.
- Winter fuel payments to the vulnerable elderly and influenza immunisations to high risk groups, including those with long term conditions, are two interventions which can help reduce some of this winter mortality.
- People eligible for the seasonal flu jabs are an ideal target audience for information on the help available to keep warm and make their homes warmer and more energy efficient.
- In 2014/15 the take up of flu vaccinations in North Lincolnshire by the elderly and other vulnerable populations were below national rates for the fifth year running.
- Additional public health interventions can include, raising awareness and training front line staff on what they can do to identify and signpost people at high risk, (supported by a simple referral tool), within both private and social housing
- Advances in health and social care mean that older people are now living longer than previously in their own homes and often with multiple long term conditions.
- As our population ages, the number of people at risk of declining health in the winter and flu months will increase year on year.
- Aside from the direct effect on health of cold weather there are other indirect effects of cold, including increasing levels of depression, and potential carbon monoxide poisoning from poorly maintained or ventilated boilers, cooking and heating appliances and heating.

### What's the local picture and how do we compare?

Every year mortality rises by 19% in the winter months in England. This amounts to an average of 27,000 excess winter deaths or about 1560 more people per week dying between December and March, across England compared with the rest of the year.

Locally there are an average of 75 excess winter deaths each year in North Lincolnshire, or 4 additional deaths a week in the winter months compared with the rest of the year.

Over the last ten years, excess winter deaths across England were highest in the winters of 1998/99 and 1999/2000, when there were 46,840 and 48,400 excess winter deaths, respectively. In both years there were higher than average levels of flu in the population, as well as colder than average winter temperatures. The stabilisation post 2001 coincided with the increase in flu immunisation uptake nationally.

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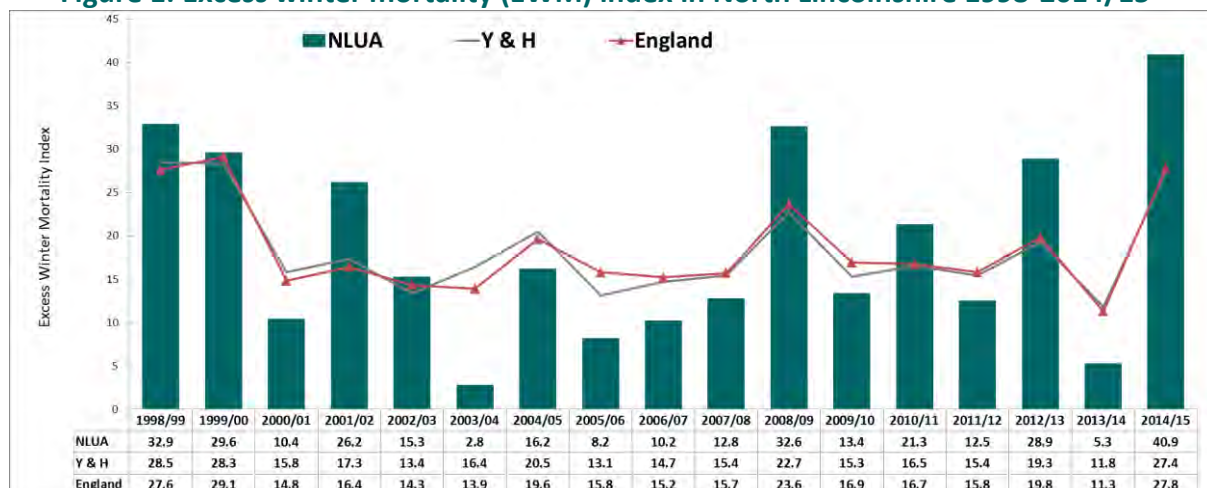
In 2008/9 rates increased by almost 50% and then fell again by almost a third in the following winter of 2009/10. This was in spite of 2009/10 being one of the coldest winters in 14 years. This was most likely due to lower levels of influenza in the community.

In contrast 2012/13 was an unusually prolonged flu season, which coincided with lower than average temperatures extending for a longer than average period across the country. As a result excess winter deaths rose across the country in that year, although they remained below 2008/9 levels. This increase was reflected locally and regionally.

In 2013/14 after a very mild winter and relatively low levels of flu in circulation, excess winter deaths fell to just 29, the second lowest number since 1991/2. This was half the national rate and significantly below the national average.

In the following year, 2014/15, which again was a relatively mild winter, both local and national EWM rates rose sharply and to their highest level since 1991/92.

**Figure 1: Excess winter mortality (EWM) index in North Lincolnshire 1998-2014/15\***



Source: PHME/PCMD, 2003- 2015, NLC, PHIT, 2014/15 local data are provisional and locally calculated, 2014/15 national data are published and provisional

A 3 year moving average is used by Public Health England to smooth out these annual fluctuations, and suggest a significant rise in excess winter deaths since 2006/7, after a period of relative stability. However it is too early to say whether this signifies an upward trend.

### Data and definitions

The Office for National Statistics uses a standard method to calculate excess winter mortality (EWM). This defines the winter period as December to March, and compares the number of deaths which occur in this winter period, to the average number of deaths occurring in the preceding August to November and the following April to July.

The **EWM Index** is calculated by dividing the number of excess winter deaths in a year by the average number of deaths occurring in the non-winter period. This is expressed as a percentage

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(where higher is worse). In other words, the EWM Index represents the percentage of additional deaths occurring in the winter months compared with average for the non-winter months. This allows for comparisons by age, sex, district, and by social group and can be used to monitor outcomes at a national, regional and local level.

**Table 1: Number of excess winter deaths and EWM index in North Lincolnshire**

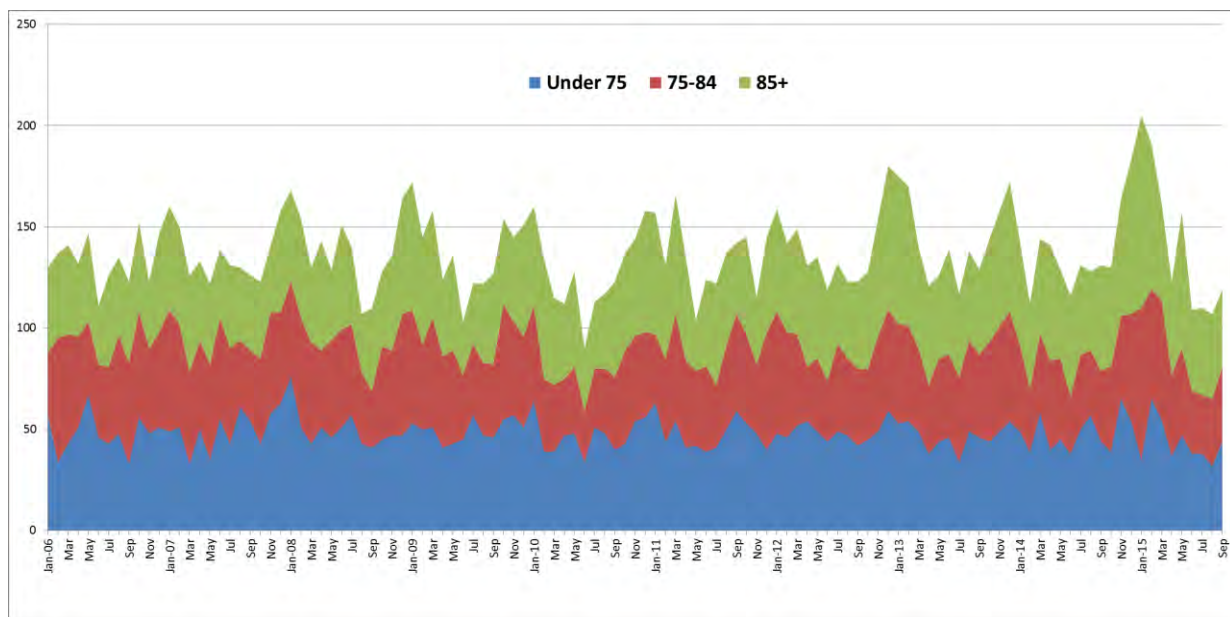
Year	EWM (count) N Lincs	EWM Index N Lincs	EWM Index England
1991/2	140	28.7	20.1
1992/3	90	17.8	14.6
1993/4	90	16.9	14.7
1994/5	90	17.8	15.6
1995/6	90	17.6	22.9
1996/7	150	29.9	28
1997/98	90	17.3	13.3
1998/99	170	32.9	27.6
1999/00	140	29.6	29.1
2000/01	50	10.4	14.8
2001/02	130	26.2	16.4
2002/03	80	15.3	14.3
2003/04	20	2.8	13.9
2004/05	80	16.2	19.6
2005/06	40	8.2	15.8
2006/07	50	10.2	15.2
2007/08	70	12.8	15.7
2008/09	160	32.6	23.6
2009/10	70	13.4	16.9
2010/11	110	21.3	16.7
2011/12	70	12.5	15.8
2012/13	150	28.9	19.8
2013/14	29	5.3	11.3
2014/15*	215	40.9	27.4**

Source: ONS and PHMF, 2014, \* provisional local unpublished data, \*\* provisional published national data

## What’s changed in the last 12 months

In North Lincolnshire, there was a significant rise in all deaths in the months November 2014-February 2015, inclusive and specifically amongst women aged 85+. The reasons for this are not clear, but were reflected nationally.

**Figure 2: Monthly deaths count by age at death, North Lincolnshire, 2008-2015**



Source: PHMF/PCMD, 2003- 2015, NLC, PHIT

Whilst mean monthly temperatures were above average from September through to January, even moderately cold temperatures can increase the risk of heart attacks, strokes, respiratory diseases and falls, and tend to occur when the mean outdoor temperature falls below 5-8 C.

According to Public Health England, there were moderate levels of flu like activity in the community in 2014/15 and they occurred earlier than the previous year. The predominant flu virus was Influenza A, which had a particularly noticeable effect on the elderly. In addition to this, the influenza vaccine in 2014/15 was less effective than in previous years, with the vaccine uptake remaining significantly below national rates.

## Why are these issues important?

Although EWM is typically associated with lower than average temperatures and higher than average levels of seasonal flu, few of these winter deaths can be attributed directly to conditions relating to cold, such as hypothermia, or indeed to influenza itself. This is because those people who are most vulnerable to the cold and to flu tend to be older and to have pre existing, chronic underlying health conditions, including cancer, circulatory diseases, and chronic respiratory

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conditions, which is what tends to be recorded as the main cause of death on the death certificate.

In fact most excess winter deaths are due to circulatory and respiratory diseases. Moreover, unlike illnesses and deaths associated with hot days, ( when the increases in deaths lasts for a day or so after the heatwave) rates remain higher for up to 2 weeks after a cold spell has ended.

After a fall in temperature, the incidence of heart attacks increase after two days, and strokes after five days, whilst deaths due to respiratory disease increase 12 days after a fall in temperature. Nationally every centigrade degree reduction below 18° C corresponds to an extra 3500 deaths (Marmot Review Team, 2011).

**Table 2: Excess winter deaths by age, underlying cause, and place of death 2014/15**

Age	Under 65	65-74	75-84	85+	Total/Average
Excess deaths (no.)	26	2	92	95	215
Excess deaths (index value)	35	1	64	48	41
Cause	Cancer	Respiratory	CVD	Dementia	Other
Excess deaths ( no)	29	36	46	42	67
Place of death	Hospital	Home	Care home	Other	Total
Excess deaths (no)	90	60	65	1	215

In 2014/15, the largest increase in excess winter deaths, compared with previous 3 years occurred in hospital and care homes.

People can also slip and fall in cold weather which for older people can result in serious injury, hospitalisation, disability and even death (Public Health England, 2013).

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

The importance of housing conditions is also emphasised by international comparisons that show lower rates of excess winter deaths in countries where homes are more energy-efficient.

Several factors also influence whether someone finds themselves living in a cold home – and how ill they may become as a result. These include:

- how efficient the heating system is
- how well insulated the home is

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- whether the person can afford to heat their home (factors here include their income, the cost of fuel, the temperature needed to make the home feel warm enough and how long the heating needs to be on)
- the person's vulnerability to the effects of cold due to age or a medical condition.

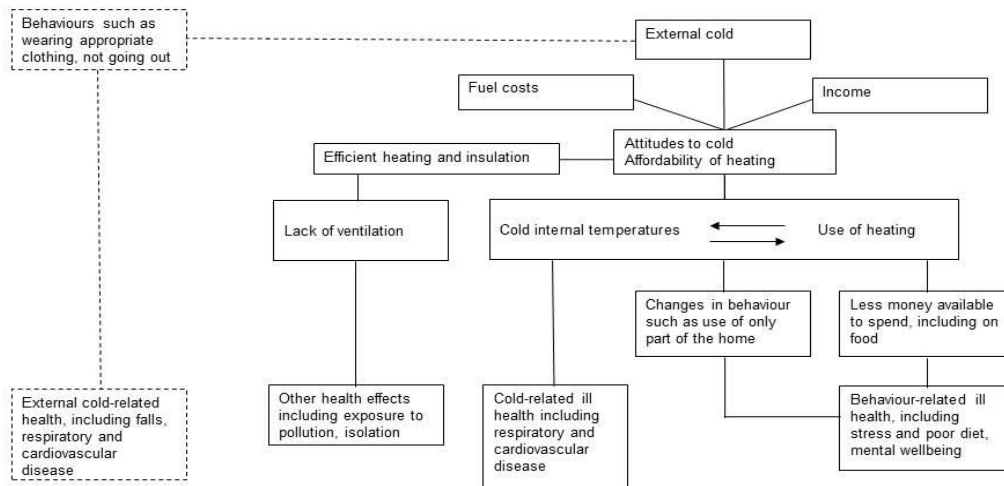
Research conducted in 2009, also suggests that for every excess winter death there are 8 hospital admissions and 100 consultations with a GP.

**Table 3: Increase in medical consultations for 1° C drop in temperature.**

Illness	% increase
Upper respiratory tract	8.5%
Asthma	12.4%
Lower respiratory tract	11%

NICE Guidance shows the relation between these factors and their potential effect on health in the following diagram.

**Figure 3: Factors linking cold temperatures to excess winter deaths and illness**



Excess winter mortality (EWM) is therefore an issue of key concern for Public Health England, local authorities and health and wellbeing boards, as there is strong evidence that in many cases simple

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preventative action could avoid many of the deaths, illnesses and injuries associated with the cold. Hence the need to plan ahead in advance of cold weather and to monitor these deaths closely.

Information on excess deaths is important in:

- Tackling certain premature deaths
- Supporting energy efficiency interventions in housing
- Encouraging fuel poverty referral
- Helping health and wellbeing boards, directors of public health and commissioners to assess needs and to commission plan and implement interventions to reduce preventable winter related ill health and deaths

To inform and encourage local and national action across different agencies and partnerships, the Public Health Outcomes Framework includes indicators to reduce excess winter deaths and address fuel poverty. 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 (<http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000044/pat/6/ati/102/page/0/par/E12000003/are/E06000013>)

### Which groups are most affected by this?

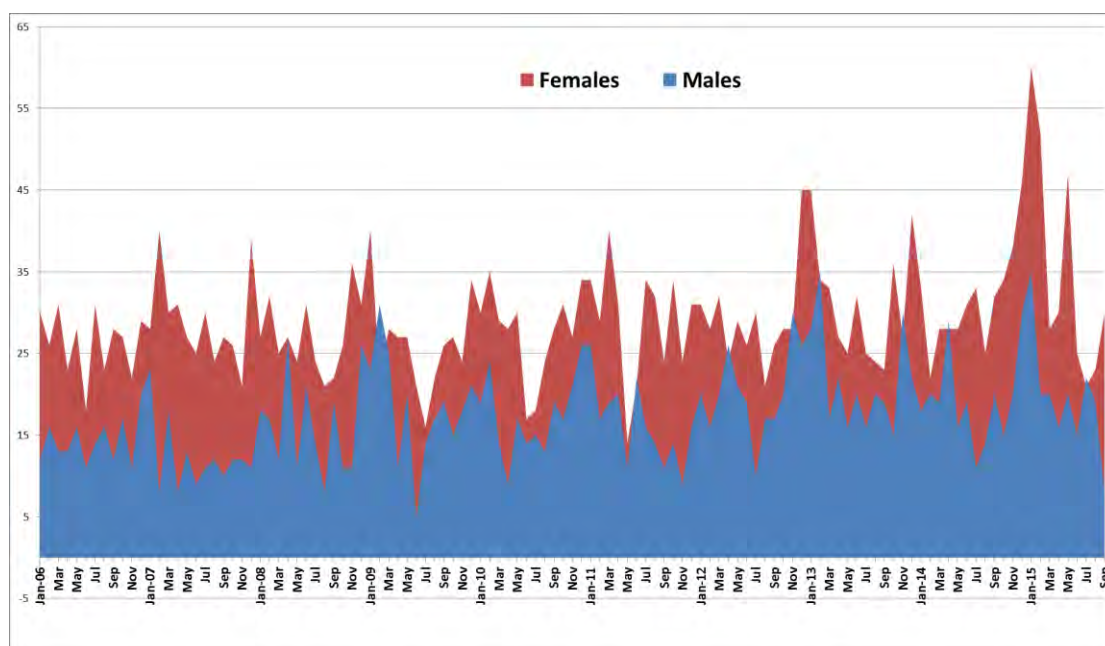
National and local data suggest that most excess winter deaths are amongst older people, especially older women, who are socially isolated and living alone. Older people are more likely to be vulnerable to colder weather, partly because of their underlying conditions, but also because their temperature control is weaker. In older people, a 1°C lowering of room temperature is associated with a rise of 1.3mmHg blood pressure due to colder extremities and lowered core body temperature. (Marmot Review of the Health Impacts of Cold Homes, 2011)

People living with underlying heart, circulatory respiratory or lung disease are at the highest risk. People who are living in deprived circumstances, those who are fuel poor, who have had recent recurrent falls, are homeless or sleeping rough, have a learning disability or mental health problem are at increased risk. Young children are also at greater risk of poor health living in cold homes including poor weight gain, higher hospital admission rates, as well as an increase in the severity and frequency of children's asthmatic symptoms.

As the graph below shows, most of the increase in local deaths in the 12 months between 2013/14 and 2014/15 were accounted for by deaths amongst people aged 85+, and, (in line with the national trend), by an increase in deaths amongst older women in particular, although deaths amongst older men and younger men and women also increased during this period.



Figure 4: Trends in monthly deaths aged 85+ by sex, 2008- 2015



Source: PHMF and PCMD, 2008-2015

### Where is this causing most concern?

It seems plausible that excess winter mortality would be greater in more deprived areas, than in more affluent areas. For example, those living on low incomes are more likely to be in poorer health and live in private rented accommodation which tends to be poorer quality energy, inefficient housing and be ‘fuel poor’.

However the association between deprivation and excess winter deaths at a spatial level is not as strong as one might expect, largely because some of our oldest, poorest and most vulnerable residents either live in social housing which tends to be better quality and more energy efficient than the private housing stock, or in care homes funded by the local authority.

Frail elderly and other low income groups with underlying medical conditions living in private rented and owner occupied accommodation will need to be targeted. ([See section below on fuel poverty](#)).

## What works to reduce Excess Winter Mortality

### NICE Guidance

NICE Guidance (NG6 2015) makes recommendations on how to reduce the risk of death and ill health associated with living in a cold home, which can occur during 'normal' winter months, when temperature may drop below 6 C, as well as during periods of severe cold.

Their recommendations include:

- 1) Health and Wellbeing Boards should develop a strategy to address the consequences of a cold homes.
- 2) Ensure a local single point of contact health and housing referral service is commissioned, which any professional who comes into contact with vulnerable groups can access.
- 3) Provision of tailored solutions rather than a single off the shelf approach.
- 4) Primary care and home care practitioners assess the needs of people who use their service every year.
- 5) Non health and social care workers who visit people at home should assess their heating needs.
- 6) As part of a planned discharge from hospital, practitioners should ensure that the home is warm enough.
- 7) Train health housing and social care practitioners on how to help people whose homes may be too cold.
- 8) Train heating engineers meter installers and those providing building insulation on how to help vulnerable people
- 9) Raise awareness amongst practitioners and the public on how to keep warm at home
- 10) Ensure buildings meet ventilation and other building trading standards.

<http://www.nice.org.uk/guidance/NG6/chapter/1-recommendations>

### Energy efficiency

The **Green Deal** was introduced in 2012 and allowed a household to make energy efficiency improvements to their home, such as insulation, double glazing and heating upgrades. The scheme allowed households to pay for some or all of the improvements over time through additional costs on their energy bill. This funding was withdrawn from July 2015.

The **Energy Company Obligation (ECO)**, introduced at the beginning of 2013, operates alongside the Green Deal. It places a legal obligation on the main energy suppliers to deliver subsidised energy efficiency improvements to low income households to enable them to heat their homes to a comfortable thermal level.

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The government has also recently consulted on implementation of **private rented sector energy efficiency** regulations using powers contained in the Energy Act 2011. These provisions are expected to mean that:

- by 1 April 2018, all eligible properties will have to be improved to a minimum energy efficiency standard before being let to tenants, except where certain exemptions apply, and:
- by 1 April 2016, tenants will have a right to request consent for energy efficiency measures that may not be unreasonably refused by the landlord.

### Tackling fuel poverty in non-gas homes

The national strategy states that tackling fuel poverty in non-gas homes is a key priority. This is in response to both analytical and anecdotal evidence highlighting that the risk of being in fuel poverty and the severity of fuel poverty is higher in homes that do not use gas as their main heating fuel.

The national strategy highlights a commitment to pilot innovative local approaches to support the fuel poor living in non-gas homes. One of the actions in the national strategy is to publish data at a lower super output area detailing the proximity of those areas from a mains gas line. This data has now been released and the findings for North Lincolnshire can be found in the following link <http://mo/mapstest/gas/index.html>

The areas with the highest proportion of properties off the mains gas are in villages to the north and west of Scunthorpe.

### Winter Fuel payments

Anyone born on or before 5 January 1953 is eligible for a winter fuel payment. This is between £100 and £300 to help pay for heating bills. Most payments are made automatically (if a person receives state pension or another social security benefit). The table below shows the number of people in North Lincolnshire aged 65+ who have received a winter fuel payments. Whilst the total number of people receiving the winter fuel payment each year has decreased by 750 between 2010/11 and 2014/15 number and proportion of people receiving the winter fuel payment has increased slightly year on year.

**Table 4: Winter fuel payments in North Lincolnshire**

	2010/11	2011/12	2012/13	2013/14	14/15	% change between 2010/11 – 2014/15
<b>Total number of people</b>	37990	37700	37740	37480	37240	-1.97%
<b>Total number of payments 65+</b>	27850	28600	30030	31060	31990	+14.87%
<b>Total number of payments 70+</b>	19390	19690	20280	20820	21650	+11.67%
<b>Total number of payments 75+</b>	12530	12800	13220	13510	13920	+11.09%
<b>Total number of payments 80+</b>	7130	7320	7570	7750	7910	+10.94%

## Fuel Poverty

Fuel poverty refers to a household that cannot afford to heat its home to an adequate standard of warmth and meet its other energy needs in order to maintain health and well-being.<sup>1</sup>

Key elements in determining whether a household is fuel poor are:

- Income
- Fuel bills
- Energy consumption (dependant on lifestyle of householders and dwelling characteristics)

It is also influenced by factors such as:

- Heating related health needs
- Occupancy levels related to the size of the property
- Attitudes to heating-related expenditure
- Cold related behaviours in the home; e.g. strategies to compensate for lack of warmth
- Housing tenure
- Access to mains gas
- The external environment

The impacts of fuel poverty are increasingly well documented. The consequences can include multiple debts, the foregoing of other essential needs, ill health and mental stress related to the difficulty of paying bills. The “*Annual Fuel Poverty Statistics Report, 2015<sup>2</sup>*”, provides the latest

<sup>1</sup> “*Fuel Poverty – How to improve health and well being through action on affordable warmth*”, UK Health Forum 2014, Butcher, J. April 2014

<sup>2</sup> *Annual fuel poverty statistics report 2015*, Department of Energy and Climate Change, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/429873/Fuel\\_Poverty\\_Annual\\_Report\\_2015.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/429873/Fuel_Poverty_Annual_Report_2015.pdf) viewed on 7.7.15,

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national picture in regard to fuel poverty in England, based on 2013 figures. Fuel poverty in England is now measured using the new Low Income, High Costs indicator which considers a household to be fuel poor if:

- They require fuel costs that are above the national median level
- Spending that amount on fuel would leave them with a residual income below the official poverty line.

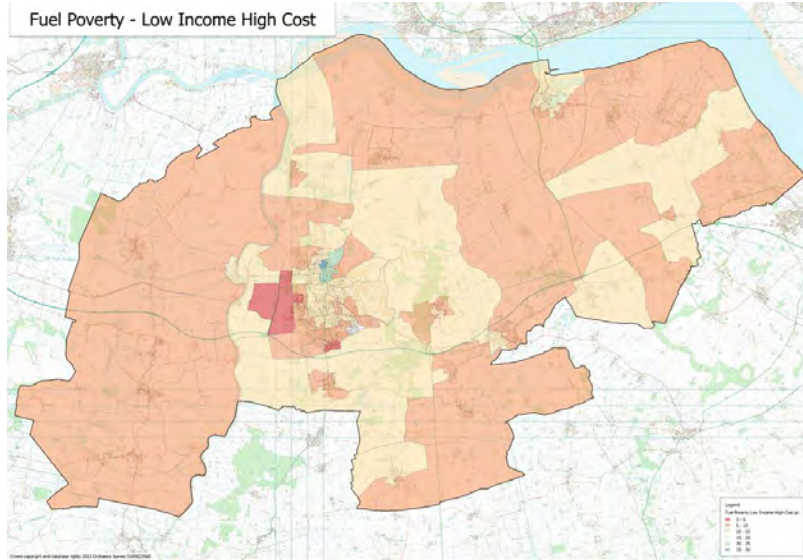
Those most at risk to fuel poverty under this definition include older people, lone parents with dependent children, families who are unemployed or on low incomes, children and young people; disabled people, people with existing illnesses (physical and mental) and long-term conditions; and single unemployed people. The table below shows the number and proportion of people living in fuel poverty in North Lincolnshire using the Low Income High Costs measure.

**Table 5: Fuel poverty in North Lincolnshire using the Low Income High Costs measure between 2011 and 2013**

	No of Fuel Poor Households 2011	No of Fuel Poor Households 2012	No of Fuel Poor Households 2013	% of Fuel Poor Households 2011	% of Fuel Poor Households 2012	% of Fuel Poor Households 2013
North Lincolnshire	7095	6225	5891	9.9	8.6	8.2
Yorkshire and The Humber	249518	244850	239661	11	10.8	10.6
England	2390000	2282579	2346715	10.9	10.4	10.4

The map below shows the prevalence of fuel poverty across North Lincolnshire using the low income high cost indicator. Based on the evidence in the map, the area with the highest percentage of fuel poor households live is Crosby and Park and Town wards, as well as a small area of Barton Ward.

**Figure 5: % households living in fuel poverty by neighbourhood**



### What actions have been taken locally

A significant amount of work has taken place to improve access to affordable fuel, including

- North Lincolnshire Council Oil Bulk Buying Cooperative for non gas areas of North Lincolnshire offer rural off gas households access to the cheapest possible oil price to help reduce heating bills
- North Lincolnshire Council Collective Switching Scheme provides residents the opportunity to access lower fuel tariffs to help reduce fuel bills for all households in North Lincolnshire.
- The table below shows the average savings per households that have been achieved since the collective switching scheme was introduced in North Lincolnshire.

**Table 6**

Auction Date	No. Registered	Average Savings per household
Nov-13	328	130.00
Feb-14	159	234.00
Jun-14	65	203.00
Dec-14	182	174.00
Feb-15	134	222.74
Oct-15	139	238.00

- Partnership with CAB to provide residents access to FREE advice on saving money on fuel bills and general fuel debt advice
- Partnership with Warm Zone to provide free insulation and heating measures to households in CSCO/CSCO rural areas of North Lincolnshire which are the within the lowest 25% of deprived areas
- Partnership with Utility companies E.on and British Gas to provide vulnerable households access to ECO funding to install insulation and heating measures free to improve the energy efficiency of homes and reduce fuel bills for the vulnerable and elderly within North Lincolnshire
- Installation of external wall insulation to properties with an energy rating of 55 or less in partnership with E.on. Accessing Energy Company Obligation (ECO) funding to subsidise affordable warmth assistance to vulnerable households. Improving the energy rating of solid wall properties to reduce fuel bill costs and therefore help anyone who is likely to be in fuel poverty.
- Provide grant and loan assistance to those older people who are most vulnerable to cold, including people suffering from COPD and other respiratory illnesses, to ensure vulnerable households live in a warm and affordable to heat home.
- Provide frontline staff who visit the elderly and vulnerable households within North Lincolnshire training on how to identify the signs of fuel poverty and to offer guidance on signposting residents to ensure they receive all assistance available through North Lincolnshire Council.

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- Regularly promote assistance to reduce fuel poverty through the council's News Direct magazine which is delivered to every household. Information is also given on the council's website and through Facebook and Twitter.
- Distribution of smart meters through the CAB and other events to raise awareness about the cost of running appliances and help understand the costs of their electric usage and what energy is being used.

## What are our future needs?

- It is likely that excess winter mortality in North Lincolnshire may increase as our elderly population living with long-term conditions increases.
- As few services exist which specifically tackle winter deaths, it is difficult to model how this demographic change will affect those services, although the local demand for influenza services will increase as our population ages.
- The importance of managing those risk factors which are within the ambit of the NHS and Local Authority will grow as poor health amongst the frail elderly associated with excess cold and influenza will place greater winter pressures on health and social care services.
- Rising fuel costs and other pressures on household budgets are also likely to increase fuel poverty and limit the amount of essential home maintenance undertaken by older vulnerable people on low incomes.

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## Key issues

- Long term planning and commissioning to reduce cold related harm is considered core business by H&WBBs and is included in JSNAs and Joint Health and Wellbeing Strategies.
- Support improved building design and increased energy efficiency which can improve and protect health, reduce carbon emissions and generate jobs in the local community
- Raise awareness of the dangers of excess cold, the risks to health and to life [www.winterwarmthengland.co.uk](http://www.winterwarmthengland.co.uk) . This is linked to Public Health England's 'Cold Weather Plan for England, 2014/15.
- Continue to train staff to identify people at risk of fuel poverty
- Identification of poor housing conditions that may be contributing to poor health at the diagnosis stage by health professionals and establish appropriate referrals for house condition improvements and or advice.
- Implement the NICE Guidance on reducing excess winter deaths.

## Data sources

Annual Report on Fuel Poverty Statistics 2014, Department of Energy and Climate Change, Gov.uk

Cold Weather Plan for England, Public Health England, 2014/15

English Housing Survey 2011-2012, Department for Communities and Local Government, Gov.uk

Excess Winter Mortality Report, 2014/15, Public Health England, 2014, Gov.uk

Public Health Mortality Files, North Lincolnshire Council, 2003-2015





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Clinical Commissioning Group



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The Health Impacts of Cold Homes and Fuel Poverty Marmot Review Team, 2011  
NICE Guidance (NG6) (2015) 'Excess winter deaths and illness and the  
health risks associated with cold homes' National Institute for Clinical Excellence

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