

Health and Wellbeing Board
North Yorkshire



JSNA

Winter Health

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Executive Summary

Cold weather can have a significant and predictable impact on people's health and is largely preventable. The direct effects of winter weather can increase the occurrences of death, circulatory, respiratory and influenza related diseases, and creates an increased risk of falls. Indirect effects can include mental health illness and the risk of carbon monoxide poisoning from poorly maintained heating and domestic appliances.

People over 75 along with other vulnerable groups including children under 5 are at particular risk of harm from cold weather. In North Yorkshire during the 2012/13 winter there were 431 excess winter deaths (EWDs). These are the number of excess deaths that occur between December and March each year. For every excess winter death it is estimated there are an additional eight emergency admissions.

The rate of EWDs across the whole of the UK is three times higher than other colder countries in Northern Europe. Although cold weather is clearly a factor in excess deaths, Scandinavian countries for example do not have the same pattern of excess winter deaths, giving a strong indication that this is a preventable situation. These countries have higher energy efficiency and housing standards and the population reacts differently to cold conditions.

The impact of cold weather on health is estimated to cost the NHS £1.5bn a year¹ and over 18,000 people died prematurely last winter².

The excess cost of winter emergency admissions in the former North Yorkshire & York PCT area in 2010/11 was £3.7m. Excess emergency admissions to hospital from respiratory conditions alone in the same period cost £2.4m

The extent of fuel poverty and cold homes are both major contributors to poor winter health. Fuel poverty is caused by three main factors: inefficient homes, high energy costs and low incomes. Improving the energy efficiency of housing has been shown to reduce health and social care costs and improve health and wellbeing.

In North Yorkshire, fuel poverty stands at 10% - 26,229 households. Fuel poverty is more likely to occur in rural areas like North Yorkshire because housing tends to be older and harder to treat, homes are off the mains gas network, meaning higher costs for heating fuels, and there is generally a low take up of energy advice and grants.

National policy, frameworks and guidelines support the need to act on winter health. The Public Health Outcomes Framework (2013) has specific indicators to reduce excess winter deaths and address fuel poverty. In addition, upper tier authorities have become responsible for population health outcomes under the terms of the Health & Social Care Act 2012 and have a duty to ensure plans are in place to protect the health of their populations including preparation for cold weather, snow and ice.

¹ NEA November 2014

<http://www.nea.org.uk/Resources/NEA/Action%20for%20Warm%20Homes/documents/Letter%20to%20Prime%20Minister.pdf>

² ONS November 2014 <http://www.ons.gov.uk/ons/rel/subnational-health2/excess-winter-mortality-in-england-and-wales/2013-14--provisional--and-2012-13--final/index.html>

Tackling winter health issues, particularly fuel poverty, cold damp homes and increasing the take-up of flu vaccinations, can make a significant contribution to reducing winter pressures on health and social care services and improve the health and wellbeing of the population. It is recommended therefore, that a North Yorkshire Strategic Winter Health Groups is set up to develop and drive a Winter Health Improvement Strategy on behalf of the North Yorkshire's Health and Wellbeing Board.

1. Introduction

There is a large and strong evidence base about the risk to health from cold weather. The effects of cold weather on health are predictable and mostly preventable. The objective of this JSNA report is to summarise:

- The impact cold weather can have on people's health
- Available winter health data for North Yorkshire
- The Wider determinates, particularly the impact of cold homes
- National guidelines and recommendations

2. The impact of cold weather on health

Excess winter deaths are calculated by comparing the number that occurred during the December to March winter period with the average number of deaths occurring in the preceding August to November and the following April to July. Nationally provisional figures produced by the Office of National Statistics (ONS) for winter 2012/13 show an estimated 31,100 excess winter deaths in England and Wales. This includes 431 in North Yorkshire. The majority of winter deaths occur in people aged 75 and over.

In data included in a briefing published by the Association for the Conservation of Energy (ACE) the UK ranks second highest in the rate of excess winter deaths compared with nine other Northern European countries, including Germany, Denmark and Finland, beaten only by Ireland.³ Although cold weather is clearly a factor in excess deaths, Scandinavian countries for example do not have the same pattern of excess winter deaths, giving a strong indication that this is a preventable situation.

Direct effects of winter weather can increase the occurrence of:

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

Indirect effects can include mental health illnesses such as depression, and risk of carbon monoxide poisoning from poorly maintained or ventilated domestic appliances.

The people at greater risk of harm from cold weather are⁴:

- older people (over 75 years old)
- otherwise "frail" older people*
- children under the age of five
- people with pre-existing chronic medical conditions such as heart disease, stroke or TIA, asthma, chronic obstructive pulmonary disease or diabetes

³ Association for the Conservation of Energy (2013), *Fact-file: The Cold Man of Europe* www.ukace.org/wp-content/uploads/2013/03/ACE-and-EBR-fact-file-2013-03-Cold-man-of-Europe.pdf

⁴ Public Health England (2014), *The Cold Weather Plan for England 2014* www.gov.uk/government/publications/cold-weather-plan-for-england-2014

- people with mental ill-health that reduces individual's ability to self-care (including dementia)
- 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
- elderly people who live alone and do not have additional social services support
- homeless or people sleeping rough
- other marginalised groups

The impact temperature and related conditions can have on health are summarised in the following table:

Table 1: The effect of temperatures on health⁵

Temperature/Conditions	Effect
21°C (70°F)	Minimum recommended daytime temperature for rooms occupied during the day
18°C (65°F)	Minimum recommended night time bedroom temperature. No health risks, though occupants may feel cold.
Under 16°C	May diminish resistance to respiratory diseases
9-12°C	May increase blood pressure and risk of cardiovascular disease
5-8°C	Mean outdoor temperature threshold at which increased risk of death observed at population level.
5°C	Poses a high risk of hypothermia
Snow and ice	Disruption to service provision, and reduction in access to essential services (including health and social care, transport and school closures) Increased risk of falls, injuries

Although the risk of death increases as temperatures fall, the higher frequency of days at moderate temperatures (5-8°C) mean that overall during a winter season more deaths occur during what are the more milder periods than occur during the rarer extreme cold periods. Thus action to prevent excess winter morbidity and mortality should not be restricted to the very cold days, but should be carried out throughout the winter period.

Although exposure to extreme cold can kill directly through hypothermia, this is not the main cause of cold related illness and death. Circulatory diseases – including heart attacks and strokes – account for 40% of excess winter deaths nationally. Around one third of excess winter deaths are

⁵ Public Health England (2013), *Cold Weather Plan for England 2013*, www.gov.uk/government/uploads/system/uploads/attachment_data/file/252854/Cold_Weather_Plan_2013_Making_the_Case_final_v2.pdf

due to respiratory illness. Weather-related deaths from heart disease increase almost immediately with the onset of cold weather, reaching their highest levels after two days. Increased incidences of stroke takes place approximately five days after the onset of cold weather periods and deaths from respiratory illnesses peak at 12 days⁶. It is estimated that GP visits for respiratory illness can increase by up to 19% for every 1°C drop below 5°C of the mean temperature.⁷

Other impacts of cold weather include:

Low weight gain in infants – there is a relationship between living in cold homes and poor weight gain. This is believed to be due to the greater calorific intake needed by children living in a cold environment to meet full growth potential.⁸

Falls and injuries – As well as snow and ice increasing the risk of falls outdoors, the effect of winter weather and cold homes on mobility increases the likelihood of falls and injuries indoors. This is particularly the case for frail, older people. The symptoms of arthritis worsen in cold, damp houses and strength and dexterity decrease as temperatures drop.

Mental and social health and wellbeing – Damp, cold housing is associated with an increase in mental health problems, such as depression and anxiety. Living in these homes can affect people's ability to go about their daily lives. Some become socially isolated as they are reluctant to invite friends or family to a cold house, while others seek refuge elsewhere as an alternative to staying in.

Although we cannot measure a direct increase in demand on mental health services due to cold weather, we know that there is an association between common mental disorder (CMD) –including depression and anxiety – and cold, damp homes. A questionnaire linking proxies for fuel poverty to CMD showed that 10% of those with CMD reported not being able to keep their home warm enough in winter, compared with just 3% without CMD. Of those with CMD, 15% said they had mould in their home, compared with 8% with no CMD⁹

Carbon monoxide poisoning – Cases of carbon monoxide (CO) poisoning increase in winter because people may use malfunctioning or inappropriate appliances to heat their homes. During cold weather, people may also try to reduce ventilation inside the house. Approximately 40 people die each year from CO poisoning; sixteen people died from CO poisoning from faulty household appliances from April 2011 to March 2012.¹⁰

⁶ Department of Health (2010) 'Winter kills' section in *2009 Annual Report of the Chief Medical Officer* www.sthc.co.uk/Documents/CMO_Report_2009.pdf

⁷ Hajat S, Kovats RS and Lachowycz K (2007) *Heat-related and cold-related deaths in England and Wales: who is at risk?* *Occupational and Environmental Medicine* 64(2): 93–100.

⁸ Liddell, C. and Morris, C. (2010) Fuel poverty and human health: A review of recent evidence.

⁹ Harris J, Hall J, Meltzer H, Jenkins R, Oreszczyn T and McManus S (2010). 'Mental health and housing conditions in England' (2010) National Centre for Social Research. www.natcen.ac.uk/media/23582/health-mental-health-housing.pdf

¹⁰ The Carbon Monoxide and Gas Safety Society (2012: UK deaths caused by accidental Carbon Monoxide (CO) poisoning (Between 1 Sept 1995 - 31 Aug 2012). tinyurl.com/UK-Deaths-Carbon-Monoxide

Social isolation – Social isolation and loneliness can have a significant impact on, particularly older, people’s health and wellbeing¹¹. Many older people become isolated and more vulnerable during winter months. Winter can be a very lonely time for older people, especially if they live on their own. Many people will be afraid of going out in the icy weather in case they fall, so will stay inside but miss out on that vital human contact which we all need to stay happy and engaged in our communities. In addition, if people are spending large amounts on fuel bills trying to keep warm, they inevitably have less money to spend on basic necessities such as food and clothing and, if they are able to get out, on social activities.

3. Data Summary

3.1 Introduction

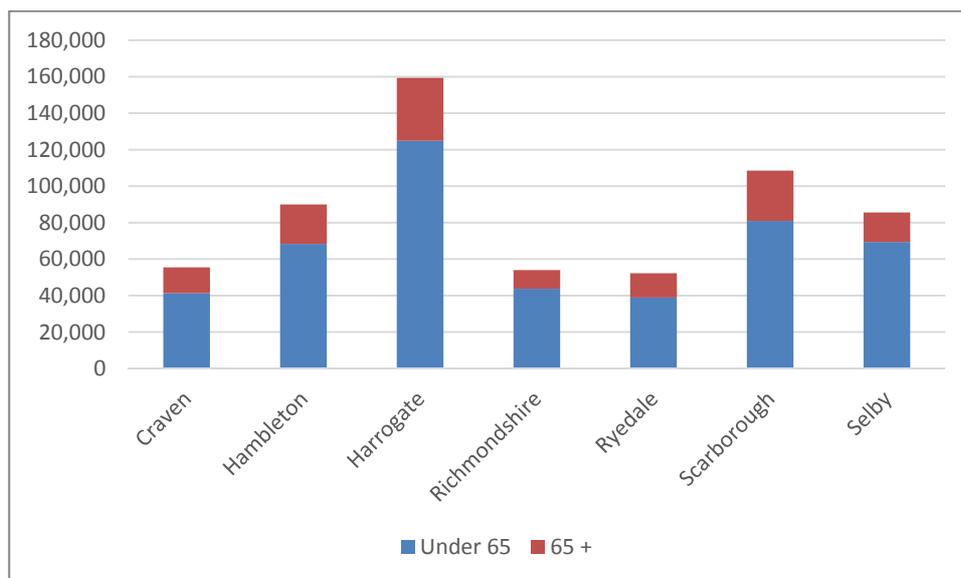
Geographies

North Yorkshire has a complicated health and wellbeing economy. Its 7 districts and 6 Clinical Commissioning Groups (CCG’s) often do not share boundaries, but are nonetheless the primary units of analysis.

Districts and Residents

North Yorkshire is composed of 7 districts, totalling about 603,000 people.

Figure 1 District populations in North Yorkshire, 2014 (Source: ONS)



District rates are considered against resident populations. Population figures are provided by the Office for National Statistics (ONS), and are projections based on a combination of the most recent census population estimates, migration patterns, births, and deaths.

¹¹ Age UK (2014), “The impact of loneliness on older people” section of the “Evidence Review: Loneliness in Later Life”
<http://www.ageuk.org.uk/Documents/EN-GB/For-professionals/Research/Age%20UK%20Evidence%20Review%20on%20Loneliness%20July%202014.pdf?dtrk=true>

Figure 2 shows the age distribution within North Yorkshire. On average the current population is older than that of England. The current North Yorkshire population structure indicates that proportionally there are more people at each of the 5 year age groups from 45 years and older when compared with England. Conversely North Yorkshire has a smaller population at each of the 5 year age bands less than 45 years when compared with England except in 10-19 year old males.

Overall, the population of North Yorkshire is becoming older with a predicted increase in people aged over 65 from 133,000 in 2013 to 211,000 by 2037, and a predicted increase in people aged over 85 from 17,500 to 47,000 (Figure 3).

Figure 2 Population Pyramid showing North Yorkshire's age distribution compared to England, 2012 (Source: ONS)

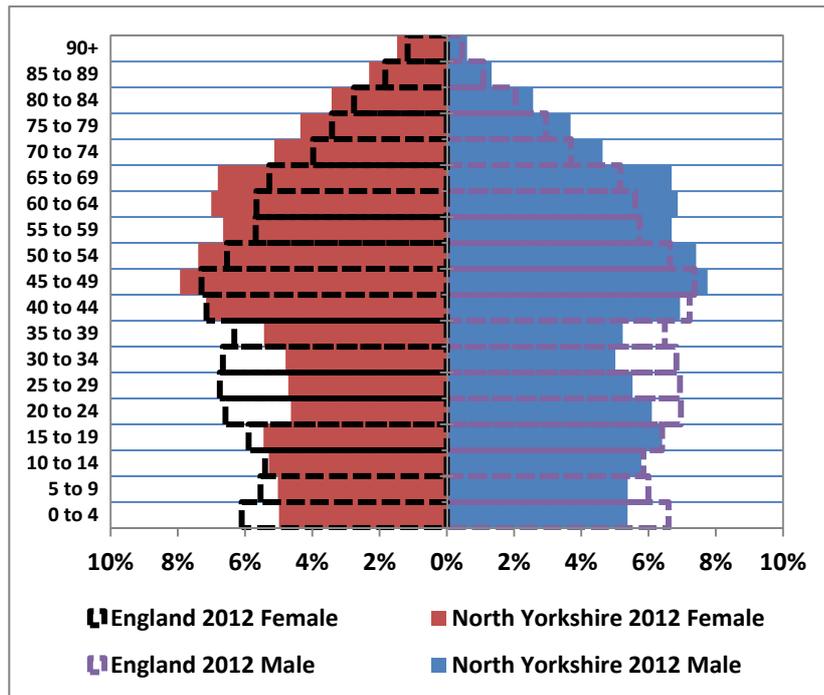
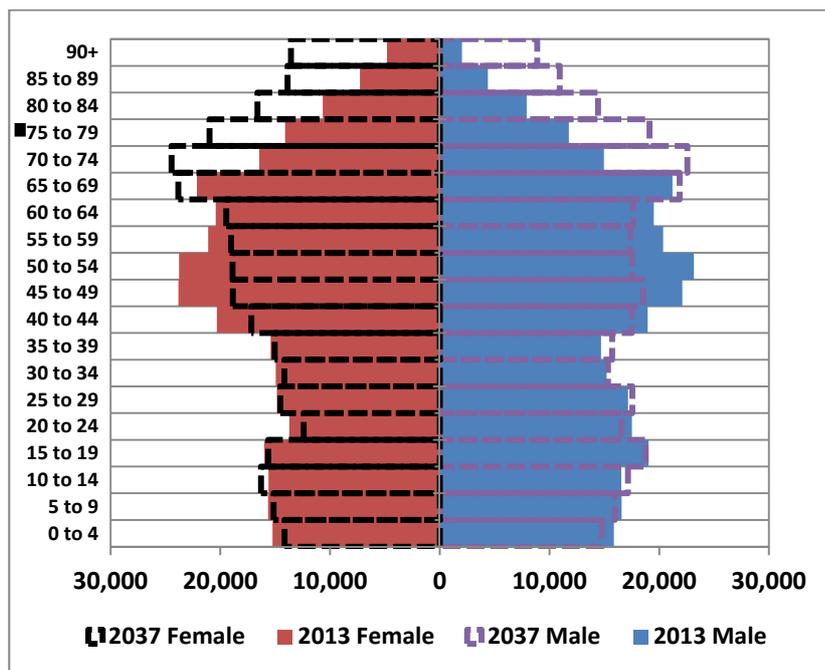


Figure 3 Population Pyramid showing North Yorkshire population change between 2014 and 2037 (Source: ONS)



Compared to other upper tier local authorities, North Yorkshire had a 2% higher proportion of people aged over 65 in 2013; a gap that will widen to 4% by 2037. The corresponding 2% increase is the equivalent of an additional 13,000 people aged over 65.

The 2010 Index of Multiple Deprivation (IMD) identifies eighteen Lower Super Output Areas (LSOAs; out of 370 in total within North Yorkshire) which are amongst the 20% most deprived in England. Fourteen of these LSOAs are in Scarborough district (around Scarborough and Whitby), two in Craven district (around Skipton), one in Selby district and one in Harrogate district.

CCG's and Registered Patients

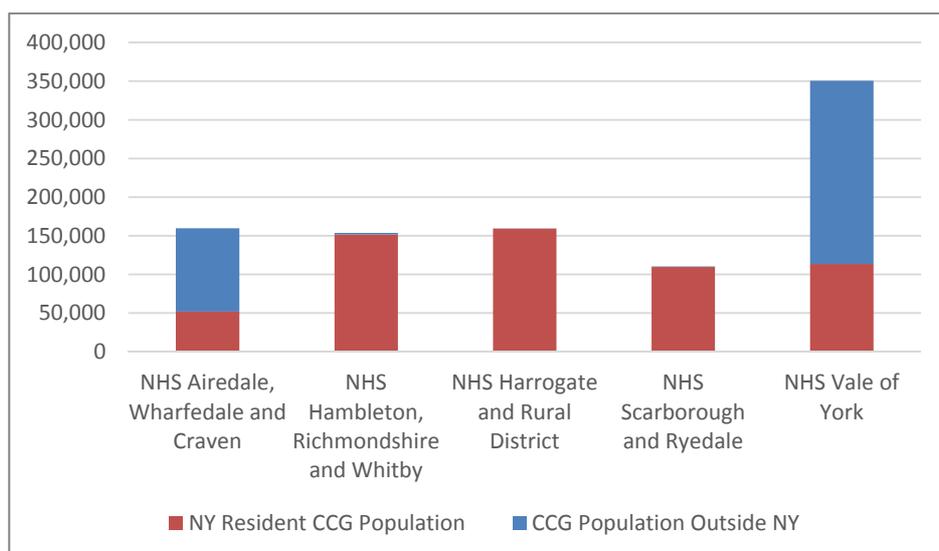
There are 6 Clinical Commissioning Groups (CCG's) with boundaries that fall within North Yorkshire:

CCG (2014 Population)

- NHS Airedale, Wharfedale and Craven (159,770)
- NHS Cumbria (504,185)
- NHS Hambleton, Richmondshire and Whitby (153,684)
- NHS Harrogate and Rural District (159,386)
- NHS Scarborough and Ryedale (110,425)
- NHS Vale of York (350,563)

The CCG populations given above are based on residents within the boundaries of the CCG. Populations can also be calculated either by restricting the CCG boundaries to just those internal to North Yorkshire or by looking at the *registered populations*. Registered populations are composed of patients registered to a GP practice assigned to a particular CCG. A North Yorkshire CCG registered population is composed of people who both live within North Yorkshire's boundaries and are registered to a GP practice at a North Yorkshire CCG.

Figure 4 North Yorkshire CCG's, resident and non-resident populations, 2014 (Source: ONS, NHS)



Yorkshire and Humber

Data presented in this report from Public Health England (PHE) will often be at the Yorkshire and Humber level. With a population of 5.3 million, North Yorkshire makes up roughly 11.5% of the Yorkshire and Humber population.

Data Sources

Data sources are listed next to each chart are within the chart heading. Several sources are described below in more detail.

- *Hospital Activity* Hospital activity data in this report has been analysed by PHE using the Hospital Episode Statistics (HES) database. All hospitals report their activity to the Health and Social Care Information Centre (HSCIC) for reimbursement by the relevant commissioner and population analysis.
- *Mortalities Statistics* based on mortalities are derived from the Primary Care Mortality Database (PCMD) from ONS.
- *Fuel Poverty* Fuel poverty statistics are published by the Department of Energy & Climate Change and are themselves composed from multiple sources. Sources include the English Housing Survey, DECC fuel price surveys, and ONS data on heating costs.
- *Populations* All population data is derived from ONS population tables.

Confidence Intervals and Statistical Significance

All confidence intervals in this report are set to 95%. This means that, if the measurement were to be repeated, 95% of the time we would expect the region shown by the interval to capture the true underlying parameter. Confidence intervals are useful when comparing multiple data points either in a time series or against population segments (such as districts or CCG's). If the confidence intervals from two points overlap, we cannot statistically claim that the difference shown has any significance.

Two features primarily affect the width of a confidence interval: the number of observations that make up a measurement, and the variation amongst those observations. A measurement of 20 people with similar characteristics is usually stronger than measuring 10 people with a variety of characteristics.

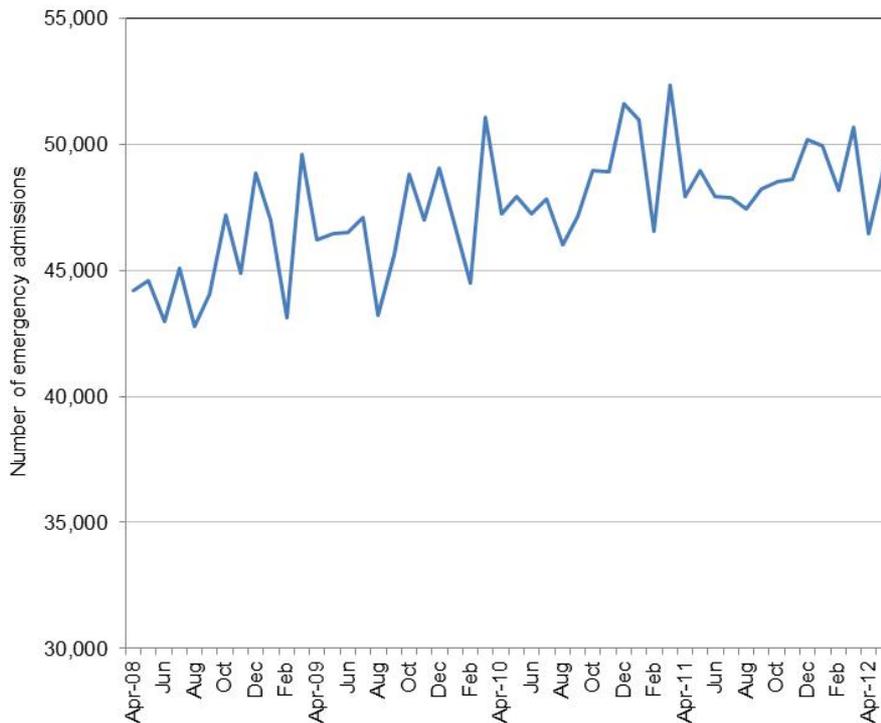
3.2 Health Service Utilisation

Emergency Admissions

An emergency admission is a non-elective attendance to hospital, counted by first finished consultant episode (i.e. the primary reason for admission). The majority of emergency admissions arrive via A&E and can be a good indicator of preventable hospital activity. In the context of winter health, we can look at trends in emergency admissions through warmer and colder months.

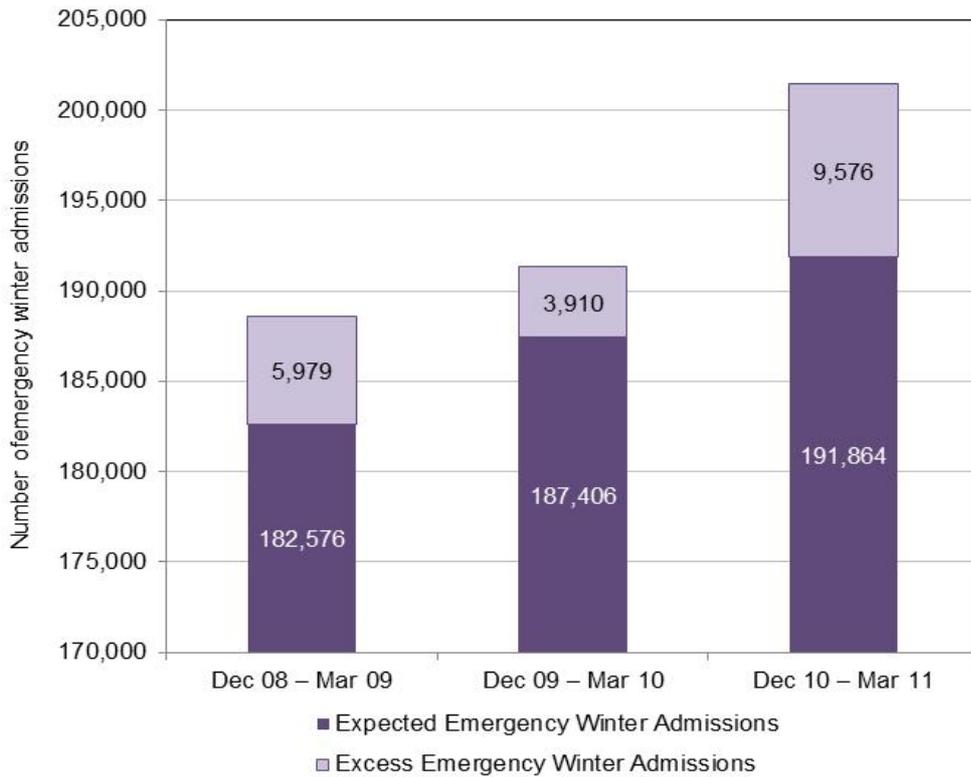
The graph below shows an overall increase in emergency admissions across the Yorkshire and Humber region. There are spikes of activity occurring during winter months.

Figure 5 Number of monthly emergency admissions in Yorkshire & the Humber 2008/09 – 2011/12 (Source: PHE)



To analyse the additional emergency admission to hospital over winter months, we can compare the expected number of winter admissions to the actual activity that has occurred. Expected activity is generated by looking at trends of non-winter months.

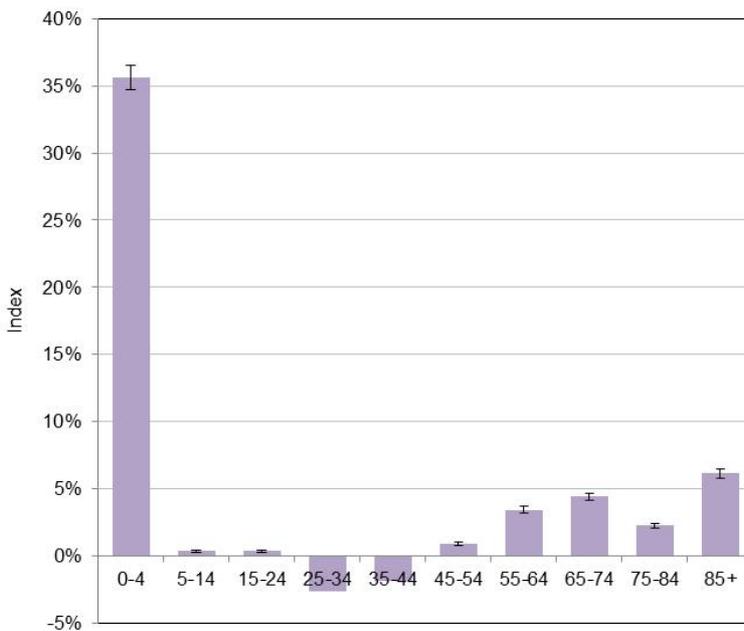
Figure 6 Expected and excess emergency winter admissions in Yorkshire & the Humber, 2008/09 - 2010/11



(Source: PHE)

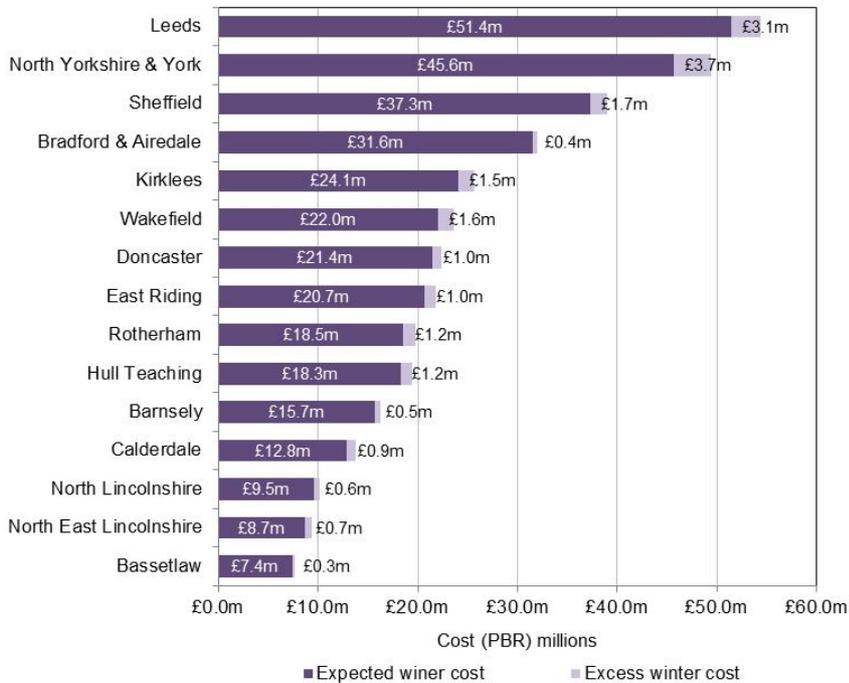
Figure 7 breaks down excess winter emergency hospital admissions by age group. The “index” is a measure of the percentage extra admissions in winter months compared to non-winter months. The 0-4 age group has the most excess winter emergency hospital admissions in Yorkshire and Humber, followed by 85+ and 65-74. A negative index implies there are fewer admissions in the winter for that age group.

Figure 7 Excess emergency winter admissions index with 95% confidence intervals in Yorkshire & the Humber by age group, 2010/11 (Source: PHE)



The cost burden of excess winter emergency hospital admissions can be calculated. Every hospital admission has a tariff associated with it based on the reason for admission and complexity of treatment required. The values give below are for 2010/11 and broken down by Primary Care Trust (PCT). Though PCT's were replaced by CCG's in 2013, the effects of excess admissions are still relevant. In 2010/11, excess winter admission cost an additional £3.7 million for North Yorkshire and York.

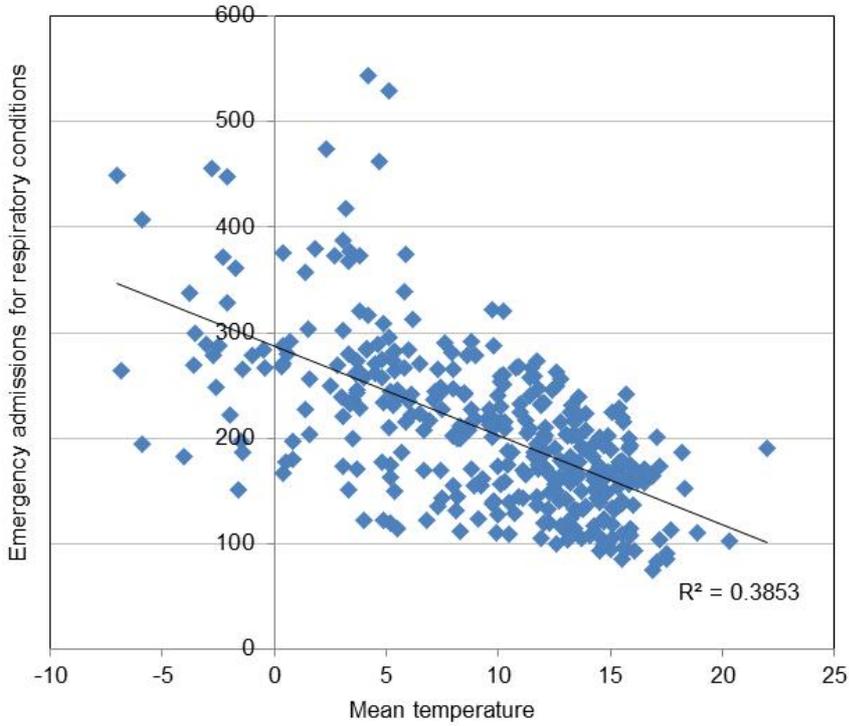
Figure 8 Expected and excess cost of winter emergency admissions by PCT in 2010/11 (Source: PHE)



Respiratory Conditions

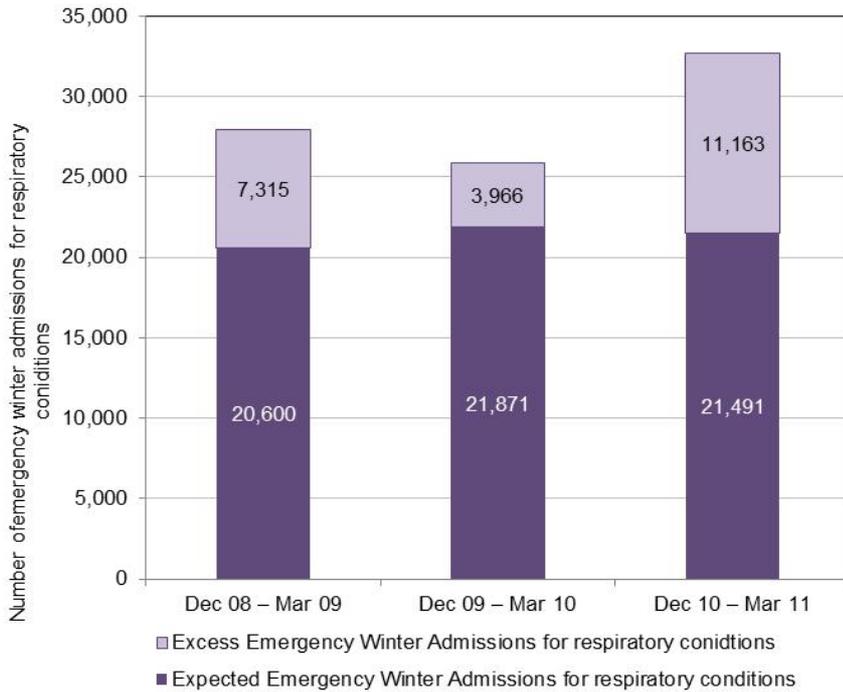
Emergency admissions to hospital from respiratory conditions are strongly affected by cold weather. There is a negative linear relationship between mean air temperature and the number of emergency admissions related to respiratory conditions on a given day (Figure 9).

Figure 9 Scatter plot of emergency respiratory admissions in Yorkshire & the Humber versus mean temperature in England, by day, 2010/11 (Source: PHE)



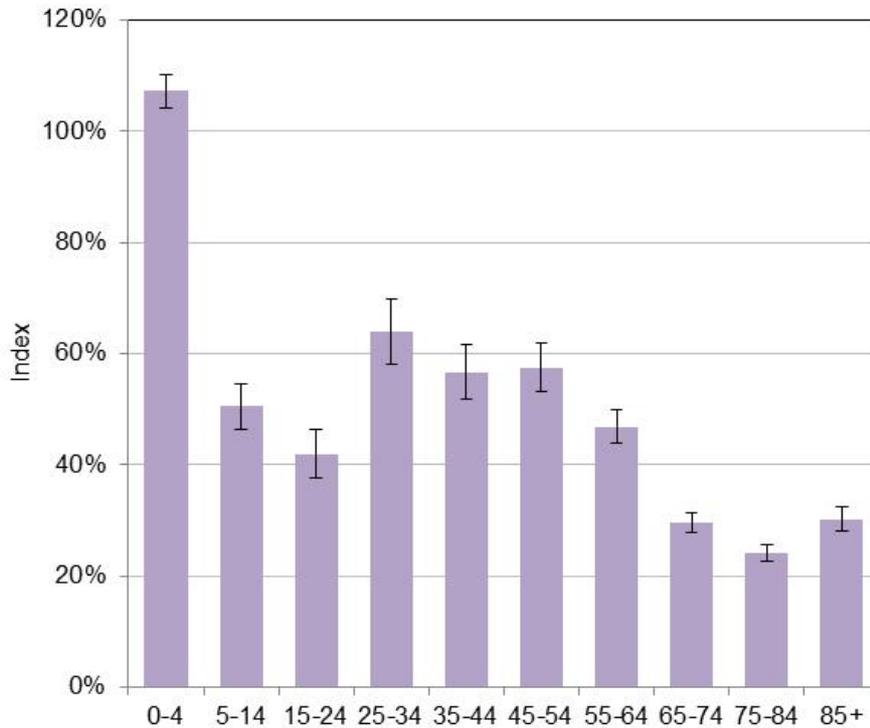
A large proportion of the increased winter admissions are due to respiratory conditions. Figure 10 shows excess winter admission for respiratory conditions over the expected admission count based on non-winter months. Between 2008 and 2011 there were an average 7,500 admissions in the winter due to respiratory conditions.

Figure 10 Expected and excess emergency winter admissions in Yorkshire & the Humber, 2008/09 - 2010/11 (Source: PHE)



We can look at excess winter hospital admissions due to respiratory conditions by age group (Figure 11). There is a strong preference for the 0-4 age category, followed by 25-34.

Figure 11 Excess emergency winter admissions index for respiratory conditions with 95% confidence intervals in Yorkshire & the Humber by age group, 2010/11 (Source: PHE)



3.3 Excess Winter Mortality

Mortality data is more readily available than hospital activity data and can be a useful measure of the increased health burden of cold weather. Excess winter mortality calculations have a similar methodology to excess winter hospital admissions.

One measure of the impacts of poor quality homes is the “coefficient of seasonal variation in mortality” (CSVM) – this indicates how many more people die in winter months than in the summer. Table 2 shows the results, for the countries compared in this briefing, of a major study on excess winter deaths, conducted in the 1990s.

Table 2: Excess winter deaths: coefficient of seasonal variation in mortality (CSVM), 1988-97 (Healy 2003)

Country	CSVM	Rank
Finland	0.1	1
Germany	0.11	2
Netherlands	0.11	3
Denmark	0.12	4
Luxembourg	0.12	5
Belgium	0.13	6
France	0.13	7
Austria	0.14	8
UK	0.18	9
Ireland	0.21	10

Definition

The ONS standard method for calculating excess winter mortality defines the winter period as December to March, and compares the number of deaths that occurred in the winter period with the average number of deaths occurring in the preceding August to November plus the following April to July.

$EWM = \text{winter deaths} - \text{average non-winter deaths}$

The EWM index is calculated so that comparisons can be made between sexes, age groups and regions, and is calculated as the number of excess winter deaths divided by the average non-winter deaths.

$EWM \text{ Index} = (EWM / \text{average non-winter deaths}) \times 100$

EWM is useful for answering “where is the bulk of the problem?” while the EWM Index describes “where is the majority of the variation?”, irrespective of population size.

North Yorkshire Excess Winter Mortality

Over the past seven years, excess winter mortality has tended to affect females more than males in North Yorkshire. The graph below is not standardised for age, which is a likely contributor to the gender gap. Figure 13 gives a 10 year age and gender comparison. The most noticeable variation appears to occur at the 55-59 age band.

Figure 12 North Yorkshire EWM Index Time Series by Gender (Source: PCMD)

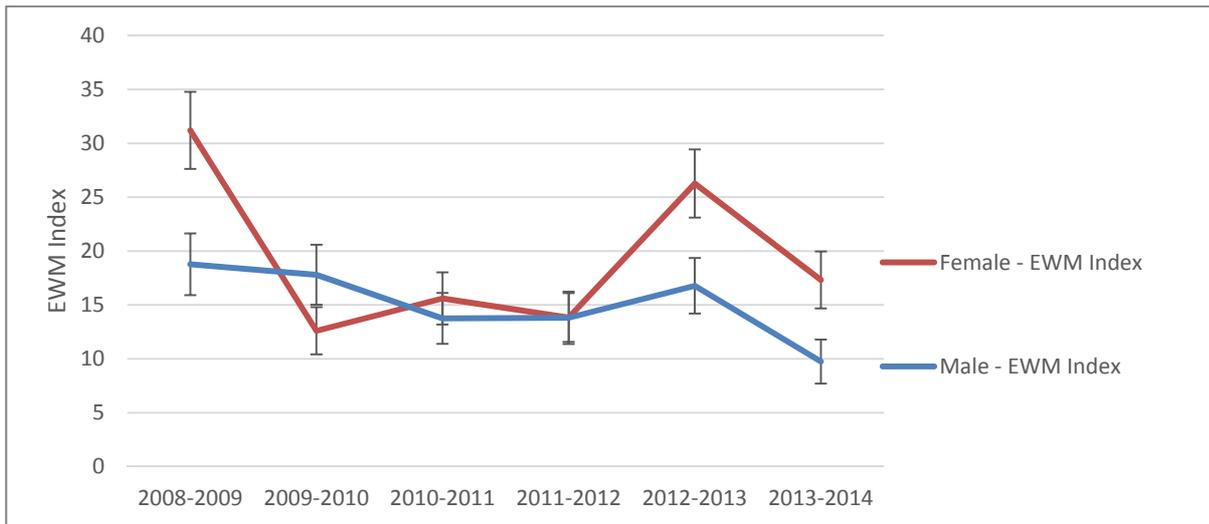
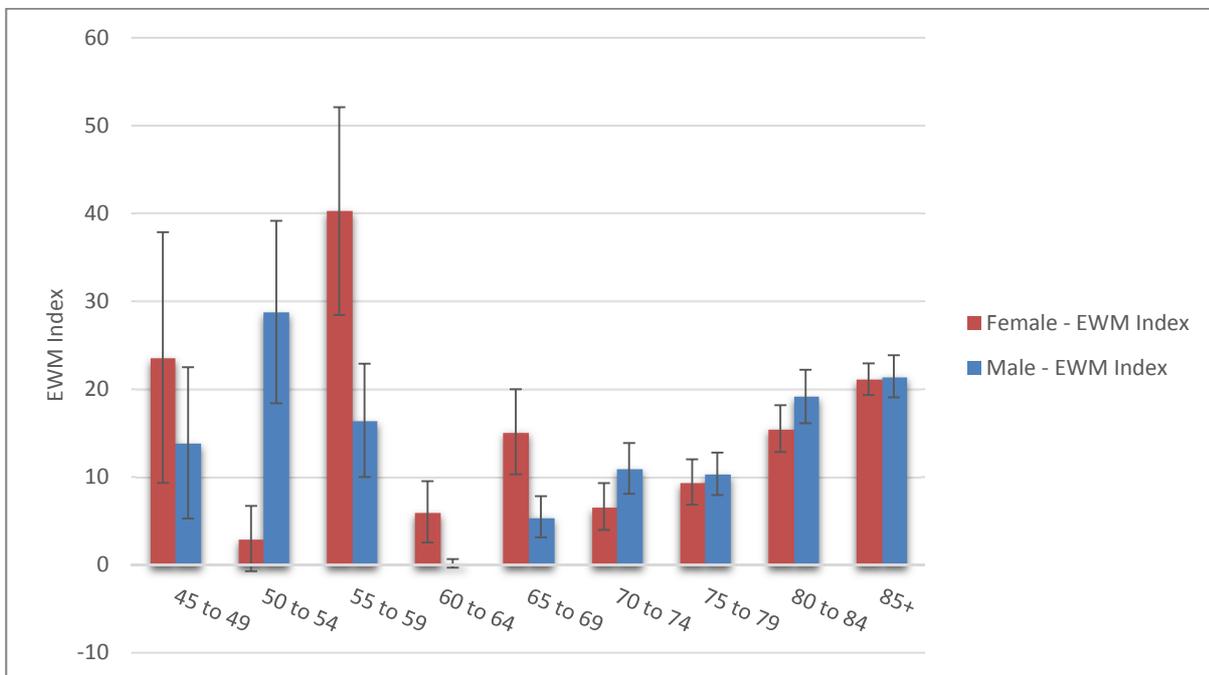
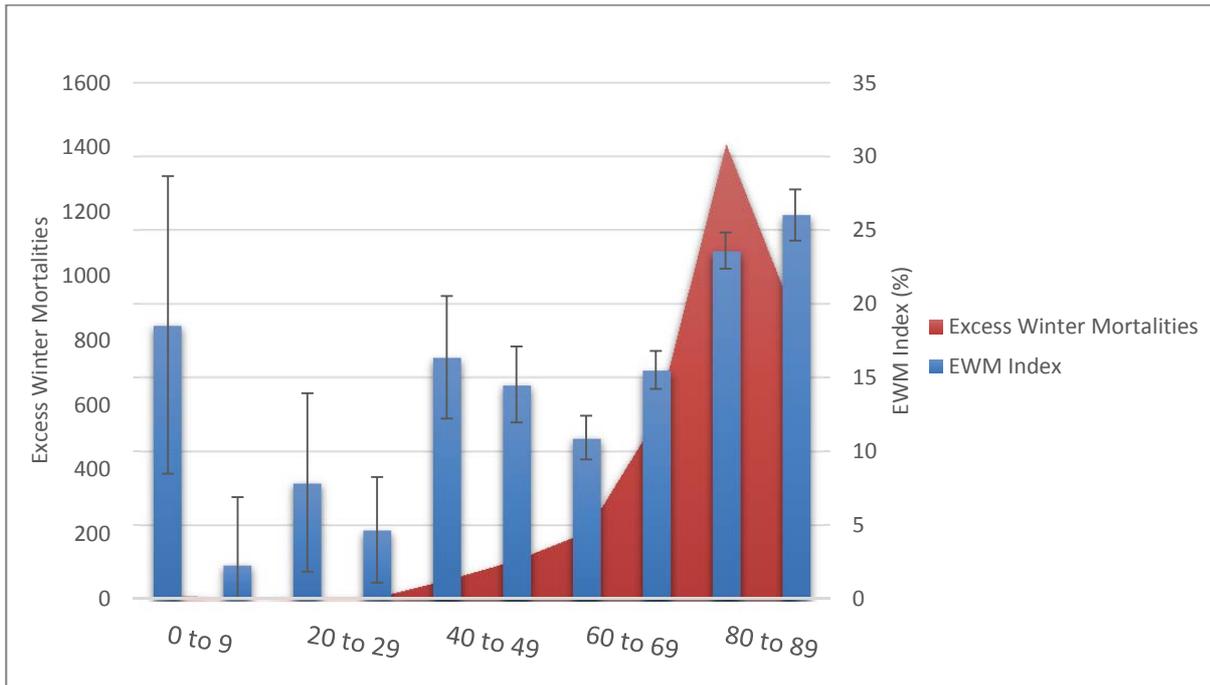


Figure 13 North Yorkshire EWM Index by Age Group and Gender, 2003-2014 Snapshot



The following figure shows both excess winter mortality and the EWM Index against age. It demonstrates the effect winter weather has on the elderly. While there is variation in excess winter mortality at the younger ages, the confidence bands are wide due to the small numbers present. The health service utilisation section of this report showed an increase in activity for both younger and older people. Here we see that the mortality burden of winter rests primarily with the older population.

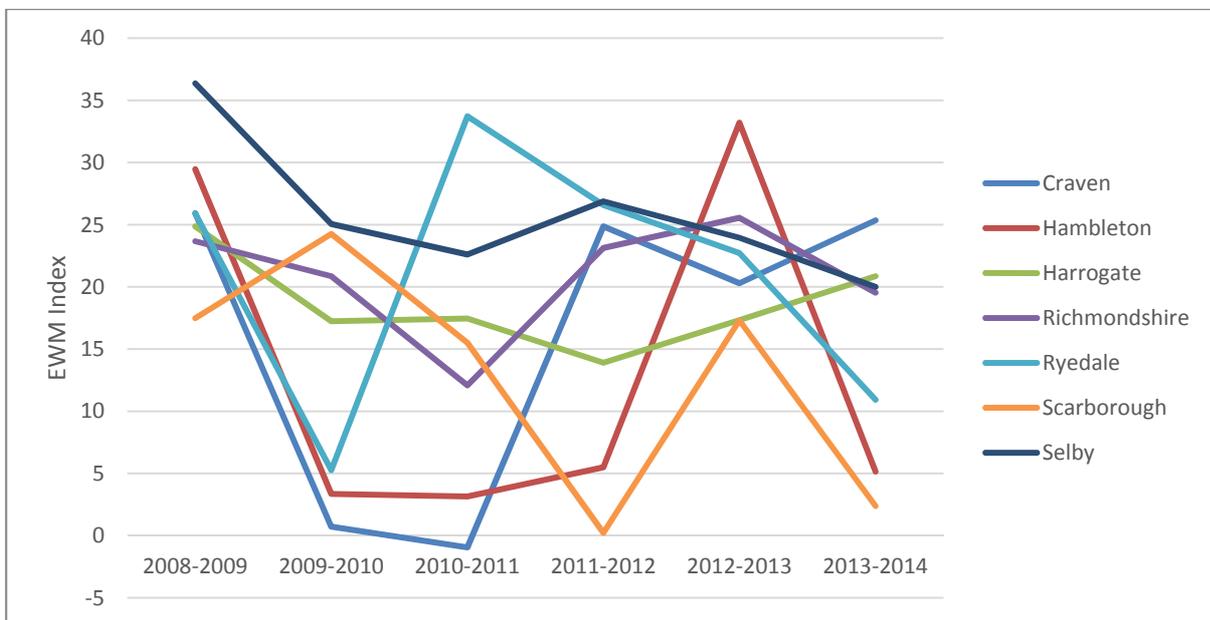
Figure 14 North Yorkshire EWM Index and Excess Winter Deaths by Age Group, 2004-2014 Snapshot (Source: PCMD)



By District

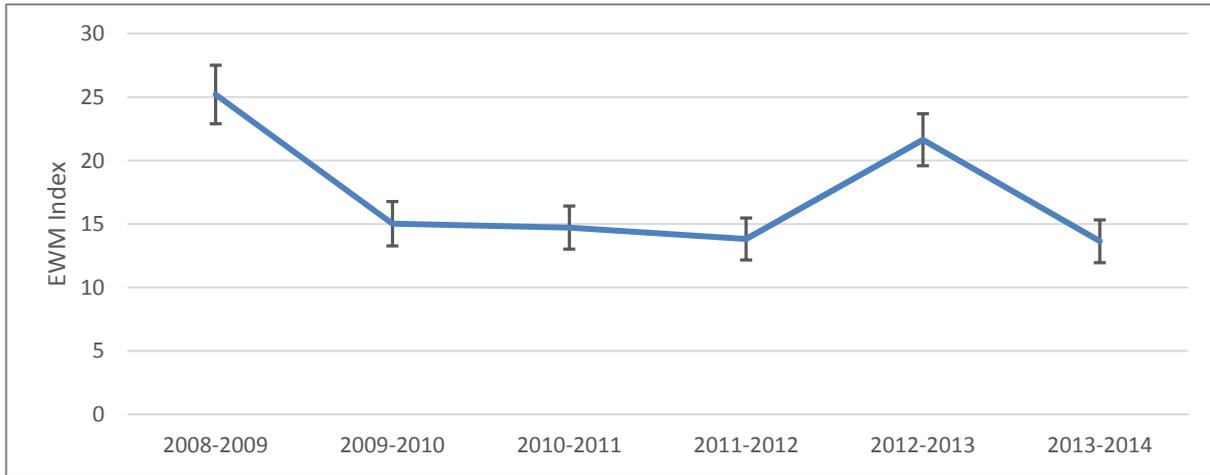
In North Yorkshire there is a large variation in EWM Index from year to year. Mortalities are rare events and do not provide enough data in a single year to draw conclusions between districts in North Yorkshire geographies.

Figure 15 North Yorkshire EWM Index Time Series by District (Source: PCMD)



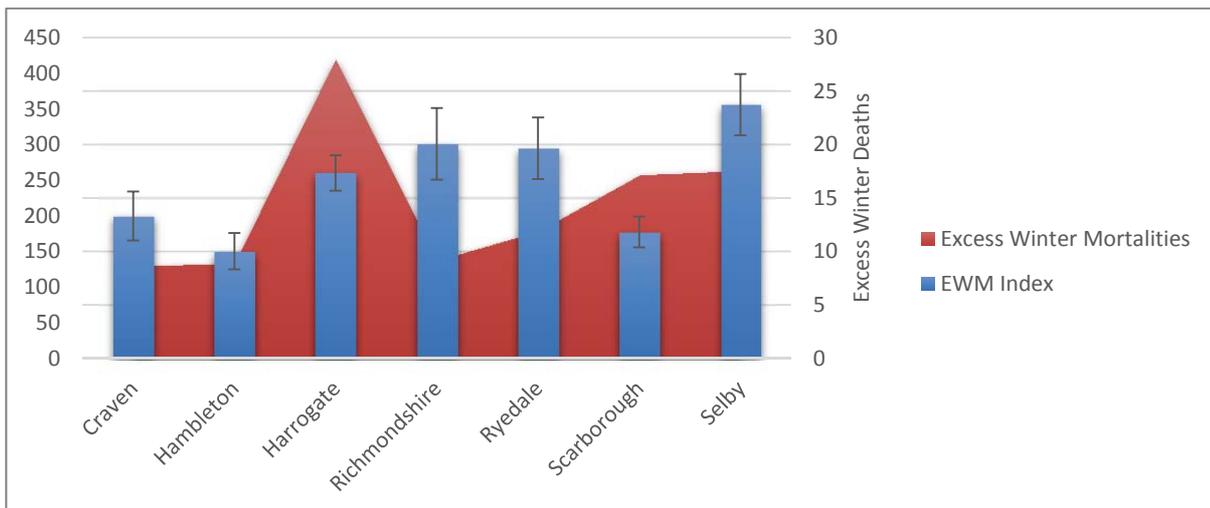
Overall, the trend has remained relatively stable.

Figure 16 North Yorkshire EWM Index Time Series (Source: PCMD)



A 5 year snapshot comparison between the districts shows Selby with the highest EWM Index and Craven with the lowest. Harrogate, with the highest population, has the largest number of excess winter mortalities.

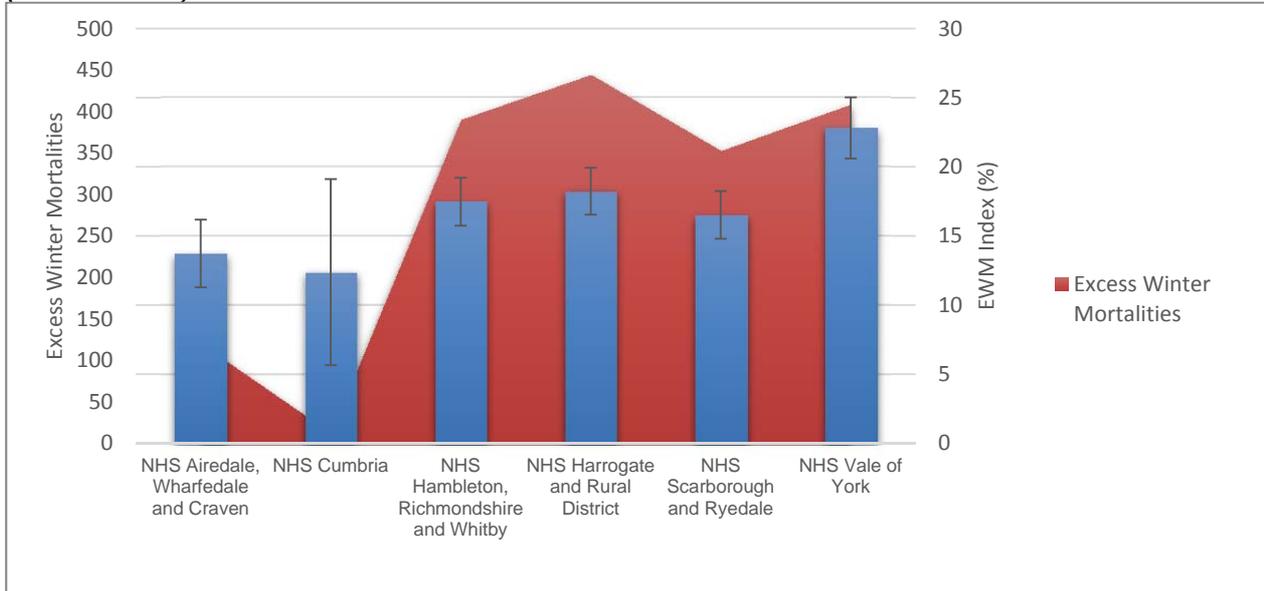
Figure 17 North Yorkshire EWM Index and Excess Winter Deaths by District, 2009-2014 (Source: PCMD)



By CCG

Figure 18 shows the CCG excess winter mortality and EWM Index comparison for North Yorkshire residents. NHS Cumbria CCG has a relatively small population within North Yorkshire, showing a small number of mortalities, but a similar amount of variation on the EWM Index.

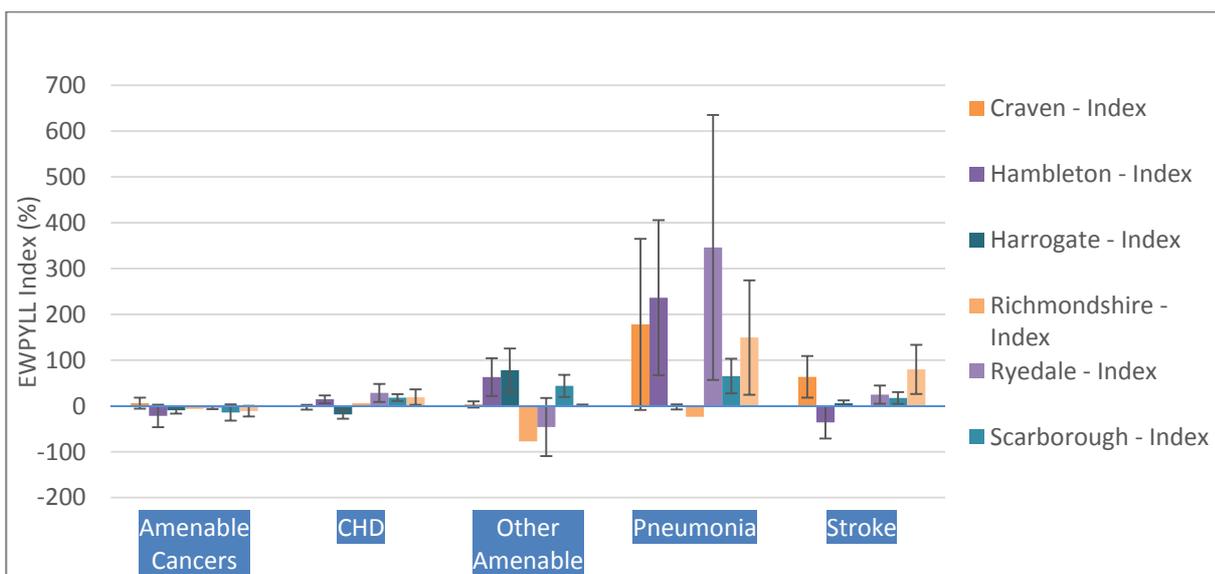
Figure 18 North Yorkshire Resident Population EWM Index and Excess Winter Deaths by CCG, 2009-2014 (Source: PCMD)



Excess Winter Potential Years of Life Lost

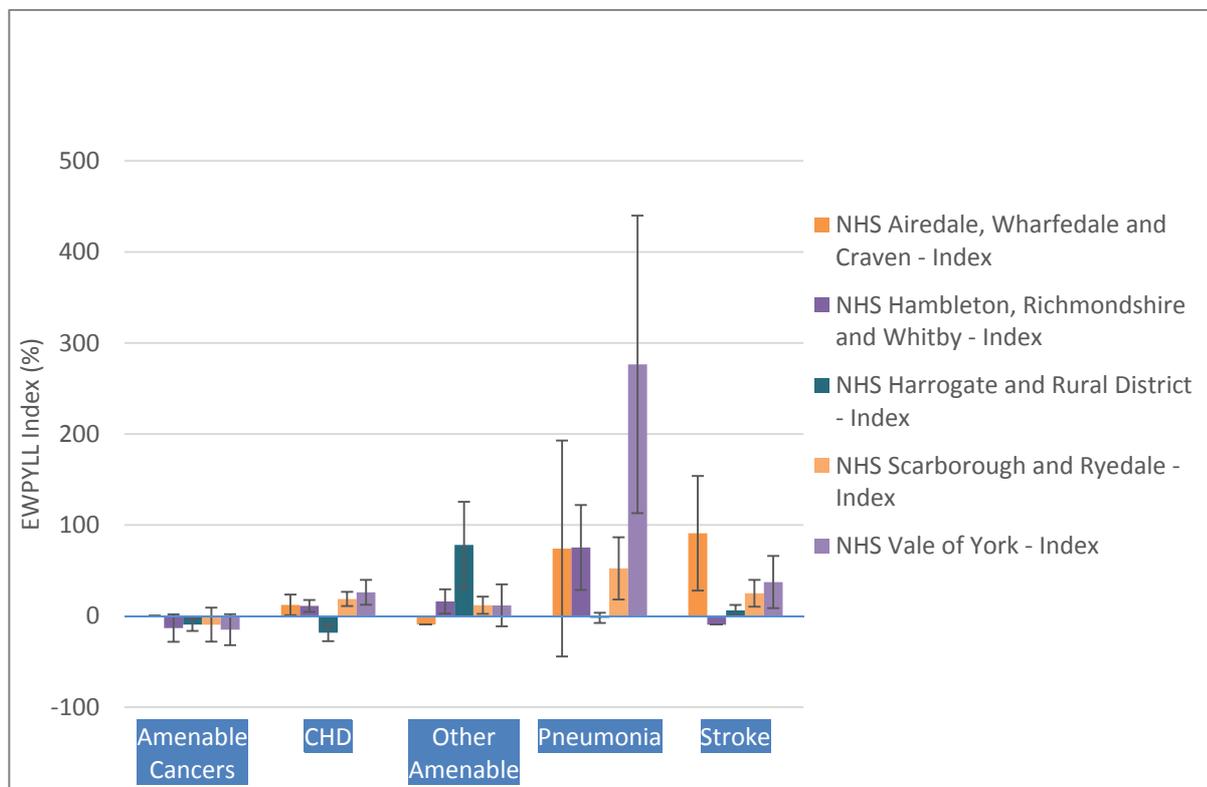
The potential years of life lost (PYLL) indicator looks at mortalities from causes “considered amenable to healthcare.” Every “potential year” is the gap between the age of death and the life expectancy of the individual. We can look at PYLL in terms of excess winter PYLL by comparing the average winter and non-winter potential years lost across conditions and geographies. Like excess winter mortality, Excess Winter Potential Years of Life Lost (EWPYLL) is presented as an index.

Figure 19 Excess winter potential years of life lost index by district and cause of death, 2009/10-2013/14 (Source: PCMD)



Compared to non-winter months, the most years of life lost in the winter from causes considered amenable to healthcare occur amongst those that have died from pneumonia. This is followed by stroke in the Craven district. “Other Amenable” includes mortalities from influenza and asthma.

Figure 20 North Yorkshire Resident Excess winter potential years of life lost index by CCG and cause of death, 2009/10-2013/14 (Source: PCMD)



3.4 Fuel Poverty

Fuel poverty is a potential causal factor of increased morbidity and mortality from winter weather. We can look at the distribution of fuel poverty in households across North Yorkshire using data published by the Department of Energy & Climate Change.

Definition

The new (2013) definition of fuel poverty in England is measured on a low income, high costs basis. A household is considered to be in fuel poverty if:

- they have required fuel costs that are above average (the national median level) and
- were they to spend that amount they would be left with a residual income below the official poverty line.

The key drivers behind fuel poverty are:

- The energy efficiency of the property (and therefore, the energy required to heat and power the home)
- The cost of energy
- Household income

Fuel poverty can be a useful indicator for areas where households struggle to heat their homes, but it does not necessarily describe the temperature of a household. Households with higher fuel poverty may have well heated homes, and conversely, a low fuel poverty household may have a poorly heated home.

North Yorkshire Fuel Poverty - By District

Though Harrogate Borough is below the North Yorkshire and England fuel poverty averages, there are more homes in fuel poverty (6,279) in Harrogate Borough than Scarborough Borough, where there is a higher than average proportion of households in fuel poverty. Figure 21 shows Selby with the lowest proportion of fuel poverty.

Figure 21 2012 Fuel Poverty by District (source: DECC)

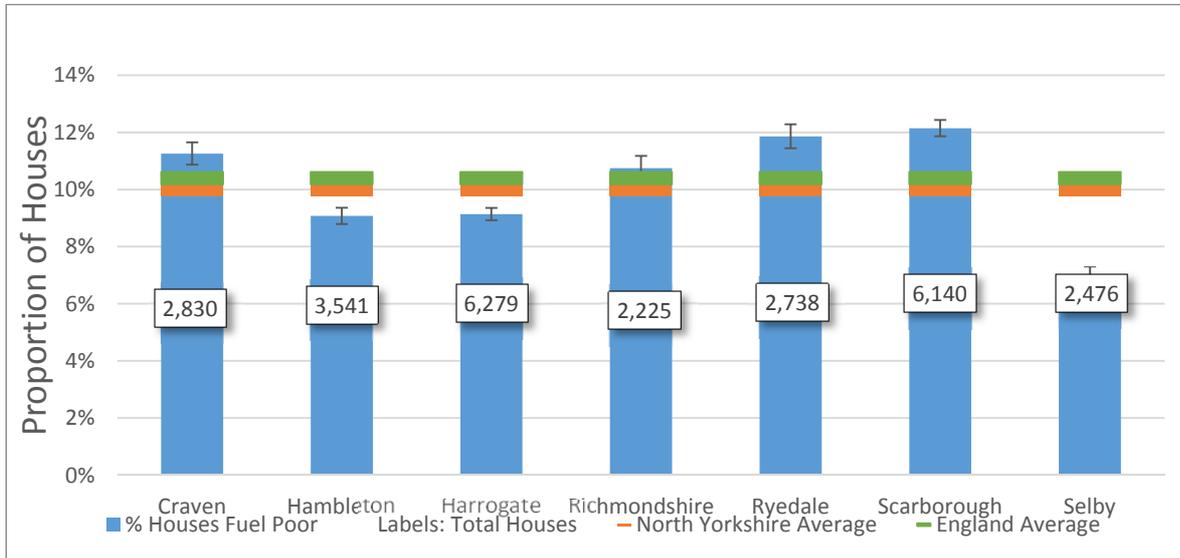
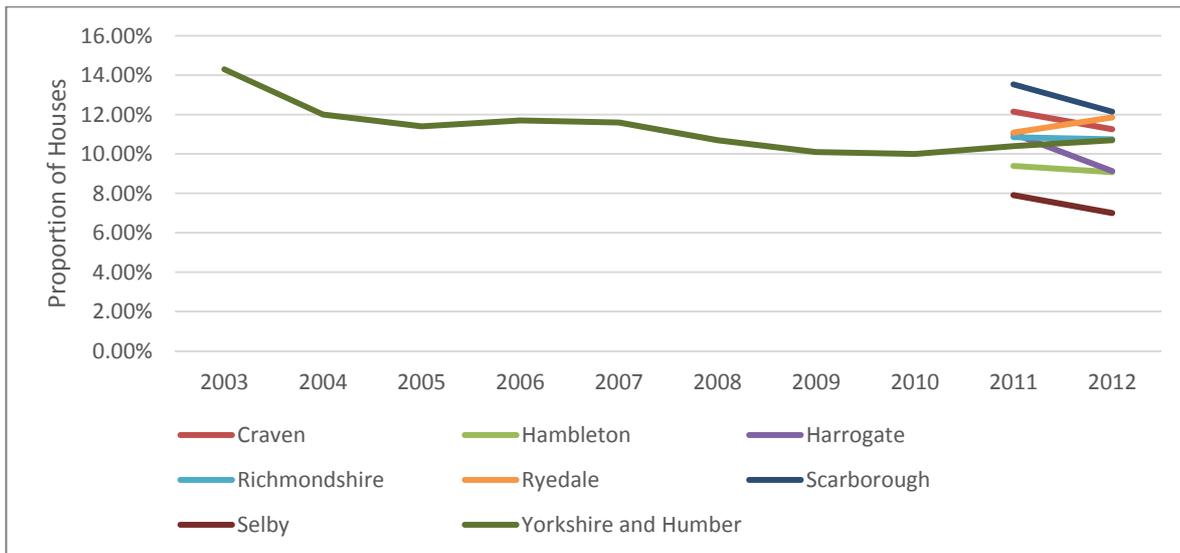


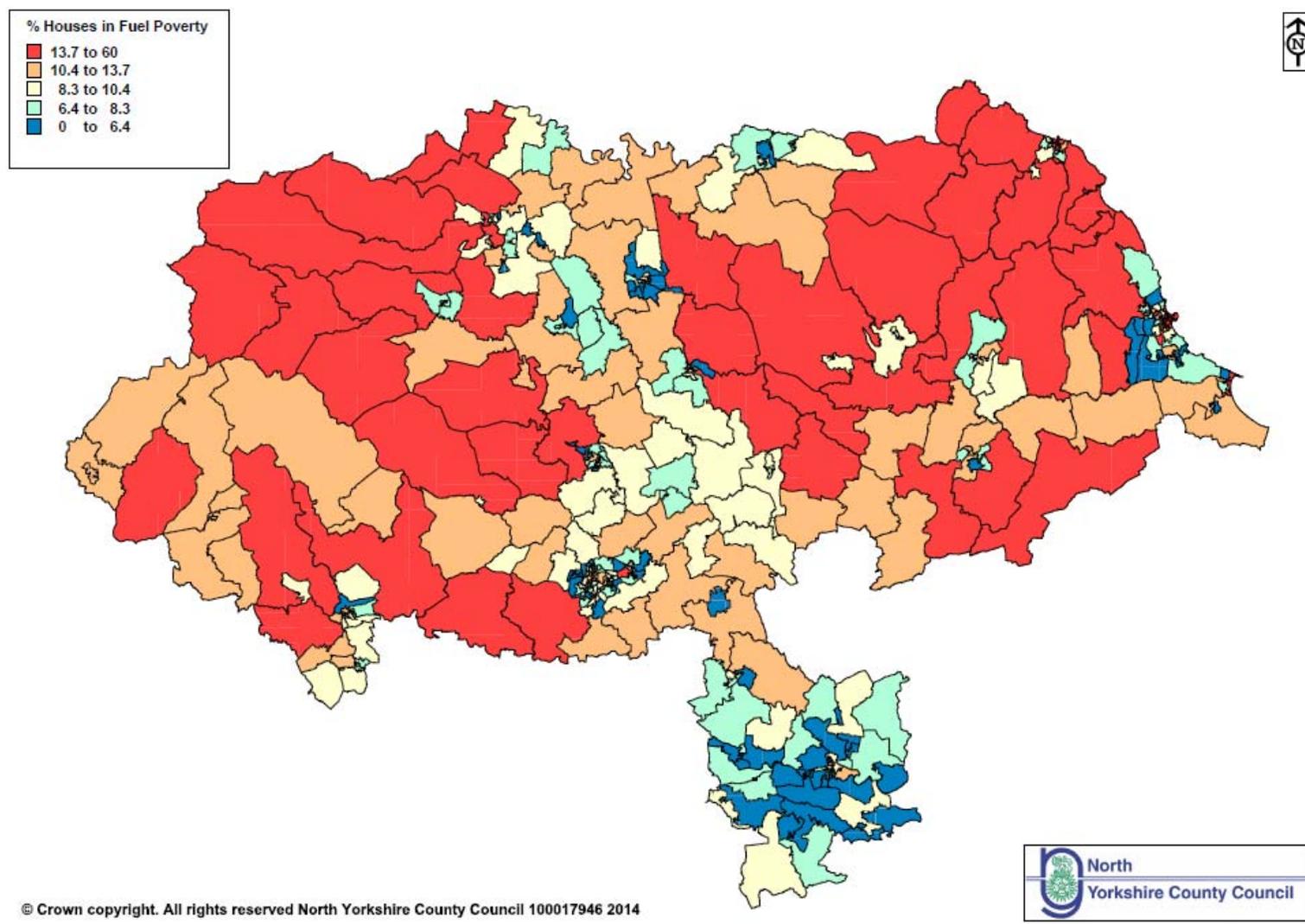
Figure 22 North Yorkshire Fuel Poverty Time Series (Source: DECC)



A ten year time series is only available at a Yorkshire & Humber level due to changes in the way fuel poverty is measured. Historical data for districts has only been published for 2011-2012. The overall trend shows a gradual decrease in fuel poverty for Yorkshire & Humber, from 14.3% of houses in 2003 and 10.7% in 2012.

Figure 19 shows the distribution of fuel poverty across North Yorkshire at Lower Super Output Area (LSOA), the smallest geography for which data is available. LSOA's have been colour coded according to quintiles of fuel poverty. Rurality appears to heavily influence the amount of fuel poverty in an area. Rural areas are less likely to have a gas connection to the national grid, which helps drive down fuel costs in more populated areas. Fuel poverty also tracks with deprivation. In North Yorkshire, the most deprived areas have 11.5% of households in fuel poverty while the least deprived have 7.3%.

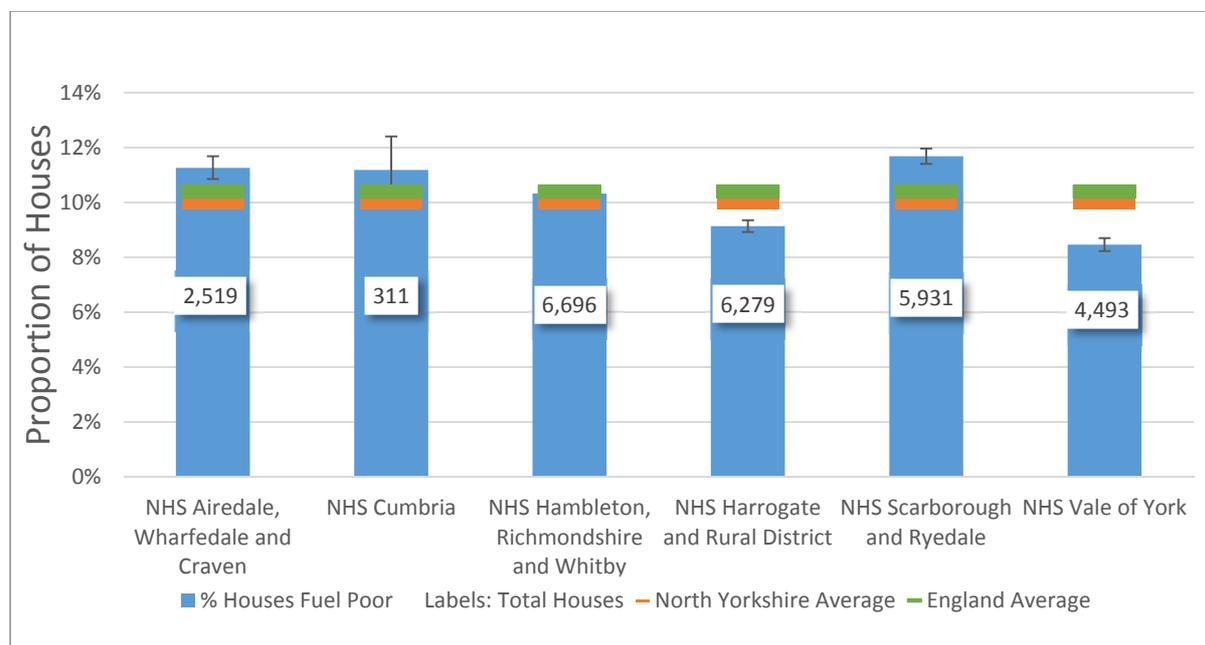
Figure 23 North Yorkshire Residents, % of Houses in Fuel Poverty 2010-2012, Low Income High Cost (source: DECC)



North Yorkshire Fuel Poverty - By CCG

A CCG comparison of fuel poverty in Figure 24 shows a similar level of variation to the district comparison.

Figure 24 2012 North Yorkshire Residents Fuel Poverty by CCG (source: DECC)



4. Why tackling cold damp homes and fuel poverty matters

The impacts of cold homes and fuel poverty are both major contributors to poor winter health and areas where there are opportunities to make changes and improve health outcomes.

Tackling cold, damp homes and fuel poverty matter because of the adverse health and wellbeing consequences they have on the morbidity and mortality of local communities. Evidence supports the conclusion that there is an impact on both physical and mental health of households. Those with pre-existing conditions known to be made worse or caused by cold are likely to be at particular risk.

Action to help improve living standards for people on low incomes and improving energy efficiency of housing will reduce health, social care and other expenditure on cold related morbidity, excess winter mortality and health and wellbeing. In addition other benefits can include better financial inclusion, economic growth and less tangible economic benefits such as better educational attainment. These issues are increasingly well documented and the focus of much review both at a local and national level, and currently command the attention and commitment of all major political parties in the UK.

Taking action to reduce fuel poverty and alleviate the health impact of cold homes requires the engagement and commitment of the acute-trust, CCG and Mental Health Trust, Public Health along with other statutory and voluntary partners

4.1 Policy Changes

During a period of much policy and decision making change around domestic energy issues, the Energy Act 2013 introduced a new Low Income High Cost (LIHC) definition of fuel poverty, which identifies the number of households that have both low incomes and high fuel

costs, and the depth of fuel poverty.¹² A key feature of the new definition is its impact on the changing distribution of fuel poverty in England, with families with children now showing the highest levels of fuel poverty whereas under the former 10% definition¹³ it was older single person households. This will mean a re-focussing of effort to reflect the new definition. In North Yorkshire under the new definition fuel poverty stands at 10% - 26,229 households.

4.2 Inefficient Homes

A combination of inefficient housing, rising energy prices and most recently welfare reform, has contributed to an increasing number of households struggling to meet their household energy needs. The Government accepts that fuel poverty is more likely to occur in rural areas because housing tends to be older, which is harder to make energy efficient and are off the mains gas network which means higher costs for heating fuels such as oil, liquid petroleum gas and electricity, fluctuating prices and where tariff discounts are not available.

In addition, in terms of the cost of housing, recent statistics show that private renters pay 41% of their gross income on rent as opposed to social renters who pay 30% and owner occupiers 19% on mortgage payments. For low income households in the private rented sector this could mean that after paying rent, less income is available for essentials – food, energy bills etc.

4.3 Rising Energy

The cost of energy is another key contributor to fuel poverty and cold damp homes. Between 2003 and 2013, energy bills rose by almost 100%¹⁴ while in real terms (after adjusting for inflation)¹⁵ average earnings of UK employees in 2012 were at roughly 2003 levels. In March 2014 the average dual fuel gas and electricity bill was £1,229 per year. However in rural areas where alternative fuels are used, the cost of heating fuels alone is between £1,260 and £2,443

4.4 Welfare Reform

Welfare Reform will affect virtually all benefits for working age people and their dependants and may mean a sharp increase in fuel poverty. Most benefit recipients will see their incomes squeezed as benefits are increased at less than the rate of inflation, with some losing out because of changes in eligibility. Others may face difficulties in budgeting as benefit payments switch to monthly and are paid to one person in the household. This could leave some households using short-term, expensive debt to cover their fuel costs at the end of the month.

Deprivation in North Yorkshire is lower than the average for England, however about 11.9% (11,900) children live in poverty. The difference in life expectancy for a child in North Yorkshire can vary by up to eight years depending on where he or she was born in the county. There are stark differences in death rates between communities within North Yorkshire, with the highest rates of early death (under the age of 75) in areas with the highest levels of socio-economic deprivation. The negative impacts of fuel poverty on low

¹² Getting the Measure of Fuel Poverty, CASE, LSE (March 2012).

<http://sticerd.lse.ac.uk/dps/case/cr/CASEreport72.pdf>

¹³ Households were formerly deemed to be in fuel poverty if they spent more than 10% of their income on fuel to maintain a satisfactory heating regime 21°C in main living areas and 18°C in other occupied rooms.

¹⁴ Quarterly energy prices DECC 2014 (based on standard credit)

¹⁵ <http://www.ons.gov.uk/ons/rel/mro/news-release/+real-wages-fall-back-to-2003-levels/realearn0213.html>

income households (in addition to health issues) can include low educational attainment, social and economic exclusion.

4.5 Mortality

The impacts of fuel poverty and cold damp homes on health and wellbeing are felt most notably by vulnerable households, in particular older people, those living with chronic illness or disability and children.

4.6 Morbidity

Whilst fuel poverty and cold homes are factors in EWDs the scale of morbidity should not be underestimated. According to the Marmot Review Team, ‘There is a strong relationship between cold temperatures and cardio-vascular and respiratory diseases, children living in cold homes are more than twice as likely to suffer from a variety of respiratory problems than children living in warm homes, mental health is negatively affected by fuel poverty and cold housing for any age group...’ *The Health Impacts of Cold Homes and Fuel Poverty*¹⁶.

The ‘Hills Fuel Poverty Review’ found that, “Thirty-four per cent of fuel poor households contain someone with a disability or long-term illness, 20 per cent have a child aged 5 or under, and 10 per cent a person aged 75 or over.”¹⁷

The population of North Yorkshire is getting older, with number of people over 85 years set to increase by a third over the next decade, placing increasing pressure on health and social care services. The associated impacts of an ageing demographic represents some key challenges for local services in terms of housing and cost to health and social care.

4.7 Cost to health of fuel poverty and cold damp homes

The Government has been working on a methodology to estimate and monetise change in Quality of Life Years (QALY) that result from improving energy efficiency of homes and the resultant financial value of health savings per measure installed. Example below:-

Intervention	QALY saved per measure installed	Value of health saving per measure installed (£-Net Present Value)
Cavity Wall Insulation	0.049	£969
Solid Wall Insulation	0.036	£742
Replacement boiler	0.009	£224
Central Heating	0.012	£303

5. Flu vaccinations and winter infections

Most cases of flu in the UK tend to occur during an eight to ten week period during the winter. For most people, seasonal flu is unpleasant but not serious and they recover within a week. Flu in an older person, pregnant woman or someone with an underlying condition (particularly chronic respiratory or cardiac disease or those who are immunosuppressed)

¹⁶ See http://www.foe.co.uk/sites/default/files/downloads/cold_homes_health.pdf (2011)

¹⁷ Fuel Poverty Advisory Group (for England) - 11th Annual Report 2012-13
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/266350/fpag_11th_annual_report.pdf

may be more severe. They are at a greater risk of developing serious complications such as bronchitis and pneumonia which may require hospital treatment. A large number of elderly people die from flu every winter.

Seasonal flu vaccinations can provide protection and are offered, free of charge, to at-risk groups to protect them from catching flu. At risk groups include people over 65, children aged two, three and four years, people with serious medical conditions (e.g. chronic respiratory disease and other chronic diseases), pregnant women and people living in residential care or nursing homes. It is important that as many people as possible in the at risk groups take up the offer of free vaccination. In North Yorkshire 69% of people 65 and over were vaccinated and 45% of eligible people aged 16 to 64 were vaccinated (2013-2014).

As well as influenza, cold weather is associated with an increase in the prevalence of other respiratory infections, such as respiratory syncytial virus (RSV) which can cause serious problems for some high risk babies¹⁸. Other infectious diseases, such as bacterial infections and viral gastroenteritis (winter vomiting), also have a seasonal pattern and may increase in winter. The pneumococcal immunisation programme¹⁹ aims to protect those people most at risk, particular people over 65 and young (less than 2 years old) children from pneumococcal disease which can cause meningitis, septicaemia and pneumonia.

6. National Guidance

6.1 Public Health England (PHE)

Within *The Public Health Outcomes Framework 2013-16*²⁰ there are two indicators that are directly related to winter health: fuel poverty and excess winter deaths. Action to reduce the harm from cold can also be linked to many more indicators in the framework connected to the wider determinants of health, such as poverty, educational achievement and social isolation.

The PHE *Protecting health and reducing harm from cold weather – local partnerships survey*²¹ report has eight recommendations for reducing the harm caused by cold winter weather:

1. Efforts should continue to nurture and protect partnerships at all levels and to continue to explore collaborative approaches.

¹⁸ Department of Health (2014),

Public health functions to be exercised by NHS England, Service specification No.3, Respiratory syncytial virus (RSV) immunisation programme

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213155/03-Respiratory-syncytial-virus-RSV-immunisation-programme.pdf

¹⁹ Department of Health (2014), *Public health functions to be exercised by NHS England, Service specification No.8: Pneumococcal immunisation programme*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/354070/Pneumococcal_specification.pdf

²⁰ www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency

²¹ www.gov.uk/government/publications/cold-weather-plan-for-england-2014

2. A systems wide approach is needed to implement a wide range of interventions to address the multiple problems of the most vulnerable
3. Local Joint Strategic Needs Assessment and Health and Wellbeing Strategies should reflect elements of the Cold Weather Plan and other strategic and operational plans.
4. Commitments within local strategic plans should translate into local action at the right scale and volume in order to achieve their stated objectives. Better understanding of the pathways required to achieve these objectives is needed.
5. Consideration should be given to ensure that interventions are focused on addressing inequality locally and are proportionate to the level of need.
6. Consideration should be given to provision of an equity audit function to ensure programmes do not exclude those most at need.
7. Examples of the successful use of data governance protocols, consent forms or referral schemes to increase uptake of schemes should be shared and adopted elsewhere.
8. Greater focus is required on the monitoring and evaluation of programmes. This is key to building the evidence base on the effect of interventions on health and wellbeing, and the wider determinants of health.

These are supported by the five key messages contained in *The Cold Weather Plan for England 2014*²²

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.

²² Public Health England (2014), *The Cold Weather Plan for England 2014*
www.gov.uk/government/publications/cold-weather-plan-for-england-2014

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 should be considered core business by HWBs and included in JSNAs and JHWSs.

6.2 NICE guidance

NICE has published draft guidance on winter health and the health risks associated with cold homes²³ A final version of the guidance is due for publication in February 2015.

Key points from the thirteen recommendations contained in the draft guidance are as follows:

- Make cold homes part of planning by Health and Wellbeing Boards; Joint Strategic Needs Assessment
- Local Health and Housing referral service, coordinated, working across agencies. One-stop service providing information on risks, on what help is available, access to tailored housing/energy efficiency interventions and grants and advice on benefits, fuel options, debt management etc.
- Identify people at risk of ill health from cold homes Use existing data sources, record the risk and share information across agencies(with safeguards)
- Health and social care professionals (and others visiting vulnerable people) should “make every contact count” Think about heating and housing needs when seeing patients/clients in vulnerable groups, provide information about the risks and the help available and be aware that needs may be hidden
- Don’t discharge people from hospital to cold homes Assess need for immediate and longer term action in advance of discharge. Consider referral but don’t delay discharge.
- Consider the potential of new technology to help reduce the risk from cold homes
- Training of health and social care staff, housing and voluntary sector workers and technical staff In the health risks of cold homes, what can be done to mitigate them and how to help clients sensitively and effectively
- Raise awareness among professionals and the public about how to keep warm at home. Publicity depends on central and local leadership and drive – DECC, DH, PHE, HWBs and Local Authorities
- Make sure buildings meet ventilation and other building and trading standards, through enforcement of existing powers.

6.3 Health Inequalities National Support Team

The health inequalities support team published a best practice guide on how to reduce excess winter deaths in older vulnerable populations. The guide describes a three stages process to develop and implement a response to excess winter deaths.

- Stage 1: preparation
- gain insight into the local picture of excess winter deaths
- develop a shared understanding of the excess winter deaths agenda, and the role of partners

²³ NICE, *Excess winter deaths and morbidity and the health risks associated with cold homes*
<http://www.nice.org.uk/guidance/indevelopment/GID-PHG70>

- develop joint working
- develop a data-sharing agreement or protocol
- coordinate a systematic approach across organisations for the 9 key interventions
- Stage 2: identify vulnerable people
 - develop a register (through establishing a list of caring staff in the community who manage caseloads of the vulnerable elderly)
 - develop a list of clients/patients that are most vulnerable and at high risk
 - develop criteria for prioritisation
 - manage the list
- Stage 3: systematically offer interventions
 - Develop a management framework

The guide also suggests the interventions that could be made once a “list” of vulnerable people has been compiled. The list of interventions is a good summary of the wide ranging interventions that should be considered when developing an excess winter deaths reduction plan and how to more generally improve winter health

- Affordable Warmth, including regular benefit entitlement reviews
 - The primary aim is to ensure that people on the list are living in homes that are safe and warm.
- Pneumococcal vaccine and annual influenza vaccine
 - The primary aim is to maximise the number of people on the list who receive the pneumococcal vaccine and annual influenza vaccine.
- Annual medication review, annual medicines utilisation review and follow up
 - The primary aim is to ensure people on the list are consistently prescribed the most appropriate medicine at the optimum dose for their condition and that they are taking the medicines correctly for maximum therapeutic benefit.
- Personal brief health interventions plan
 - The primary aim is to develop a plan in partnership with the vulnerable person to ensure they undertake suitable activities to promote a healthy lifestyle.
- Falls prevention
 - The primary aim is to ensure that the people on the list are systematically assessed for risk of falls and offered evidence-based interventions to reduce any identified risk.
- Using assistive technologies
 - The primary aim could be that the people the list are assessed for suitability for the range of assistive technologies available locally.
- Personal crisis contingency plans
 - The primary aim is for people on the list to have a personal plan of options developed with the support of the health or social care key worker to aid them in an emergency situation.

7. Examples of Local Activities

7.1 Innovation Fund

Funded by North Yorkshire County Council’s Health and Adult Services Directorate, NHS Airedale, Wharfedale and Craven Clinical Commissioning Group and Craven District Council, the Innovation Fund is aimed at supporting the transformation of Health and Adult Social Care in North Yorkshire by funding groups across the county who are working to address three main themes:

Reducing Loneliness and Isolation

Prevention of Falls

Supporting people to remain in their own homes

in the Airedale, Wharfedale and Craven Clinical Commissioning Group area, funding is also for preventing winter deaths and reducing fuel poverty. To date the fund has supported the following initiatives around this forth theme:

Name of Organisation: National Energy Action

Main target group: Clients with long term health conditions

Summary of activity:

- Training for Craven HIA staff in NEA's level 3 Energy Awareness course.
- Raise awareness of issues related to cold damp homes, fuel poverty and EWDS to social care professionals.
- Provide home visits to assess householder need for warmth interventions
- Seek £10000 from Craven District Council for capital costs to use as a "crisis fund"
- Deliver energy saving/bill management events to target group

(NEA is also involved with Swale HIA in the Hambleton district working on a similar but larger scale project.)

Name of Organisation: Age UK North Craven

Main target group: Clients with long term health conditions

Summary of activity:

- Keep warm in Craven project will increase access to benefits take up expertise, government schemes to fund or improve fuel efficiency and the best fuel deals.
- Volunteers will receive accredited high level training in the actions which tackle vulnerability to winter cold and minimise fuel costs.

Name of Organisation: Rural Action Yorkshire

Main target group: Clients who are isolated due to living in a rural area

Summary of activity:

- Provide a comprehensive package of support to those at risk of fuel poverty or those vulnerable during severe winter weather. Galvanise whole communities to act to keep residents safe, warm and healthy whilst also targeting vulnerable individuals with advice and support.

7.2 Winter Planning

Building on the success of a similar project in 203-14, North Yorkshire County Council is working with a number of districts to support winter planning for 2014-15. Plans are based on local needs and include supporting a variety of projects, examples of which include the provision of information and advice to vulnerable people, distribution of Winter Weather packs and practical support to vulnerable residents.

7.3 Flu vaccinations

North Yorkshire County Council is encouraging members of the population in high risk groups to consider having a free flu vaccination. As part of this initiative members of staff who are not eligible for free vaccinations in the national scheme, but who are deemed to be frontline health and social care workers working with vulnerable groups have been encouraged to take advantage of a NYCC employee scheme. Working in partnership with community pharmacies and the Local Pharmaceutical Committee, this scheme gives eligible employees the opportunity to obtain a flu vaccination from participating community

pharmacies winter fact sheet – North Yorkshire Public Health lead on the development of factsheets for health and social care professionals to provide information and advice to be used with individuals/patients. In 2013/14 Public Health developed a winter health and older people factsheet. This was well received by health and social care professionals.

During the autumn/winter of 2014/2015 the annual nasal spray flu vaccine will be available for all children aged two, three and four years old as part of the NHS childhood vaccination programme. In North Yorkshire all secondary school-aged children in years seven and eight will also be offered the vaccine as part of a pilot programme. Over time, as the programme rolls out, potentially all children between the ages of two and 16 will be offered vaccination against flu each year with the nasal spray.

8. Recommendation

Tackling winter health issues can make a significant contribution to reducing seasonal pressures on health and social care services. It is recommended that a North Yorkshire Winter Health improvement strategy be developed on behalf of the HWB. It should take into consideration the issues identified in this report including the national guidance summarised in section six and the work already undertaken in North Yorkshire highlighted in Section seven.