

8. OLDER PEOPLE

8.5 Winter pressures, including excess winter deaths

In England and Wales more people die in the winter than in the summer as in many other countries. Excess deaths in winter (EWD) is an important public health issue in the UK, potentially amenable to effective intervention. This excess death is greatest in both relative and absolute terms in elderly people, among certain disease groups and varies by small geographical area. EWD are associated with cold weather. However, it has been observed that other countries in Europe especially the colder Scandinavian countries have relatively fewer excess winter deaths in winter compared to the UK. Information on excess winter deaths is useful to tackle certain premature deaths, promote energy efficient interventions in housing and target support to deal with fuel poverty. Falls is not included in this as there is a separate JSNA chapter on falls.

8.5.1 The impact of excess winter pressures and mortality

Cold weather increases the risk of heart attacks, strokes, lung illnesses, flu and other diseases. People slip and fall in the snow or ice, sometimes suffering serious injuries. Some groups, such as older people, very young children, and people with serious medical conditions and pregnant women are particularly vulnerable to the effects of cold weather.

An estimatedⁱ 43,900 (2014/15) excess winter deaths (EWD) occurred in England and Wales and the highest number since 1999/2000. More people (27%) dying in the winter months compared with the non-winter months. The majority of deaths occurred among people aged 75+. There were an estimated 36,300 (2014/15) excess winter deaths in this age group (75+) compared with 7,700 in people aged under 75. EWD were more in females than in males. Respiratory diseases were the underlying cause of death in more than a third of all EWDs.

The number of EWDs depends on the temperature and the level of disease in the population as well as other factors i.e. how well equipped people are to cope with cold weather. Most EWDs are due to circulatory and respiratory diseases, and the majority occur amongst the elderly populationⁱ. Research carried out by the Eurowinter Groupⁱⁱ and Curwenⁱⁱⁱ found that mortality during winter increases more in England and Wales compared to other European countries with colder climates, suggesting that many more deaths could be preventable in England and Wales. In the recent past, the rate of EWDs in England was twice the rate observed in some northern European countries, such as Finland.^{iv} Excess deaths are not just deaths of those who would

have died anyway in the next few weeks or months due to illness or old age. There is strong evidence that some of these winter deaths are indeed 'extra' and are related to cold temperatures^v and living in cold homes^{vi} as well as infectious diseases such as influenza.^{vii}

8.5.2 Information on cold weather and health impact^{vii}

Cold weather is clearly a factor in number of deaths compared to other periods. Winter weather can directly increase the occurrence of heart attacks, stroke, respiratory disease, influenza, falls/injuries and hypothermia. It can indirectly increase mental illnesses such as depression, and also increase the risk of carbon monoxide poisoning from poorly maintained or ventilated domestic appliances.

Exposure to extreme cold can lead to hypothermia and directly kill people, but this is not the main cause of EWD. Circulatory diseases (i.e. heart attacks and strokes) account for 40% of EWDs nationally and around one third of excess winter deaths are due to respiratory illness. 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.^{viii}

8.5.2.1 Falls and injuries

Snow and ice increase 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.

8.5.2.2. Mental wellbeing

Damp, cold housing is associated with an increase in common mental disorders (such as depression and anxiety). A questionnaire linking proxies for fuel poverty to common mental disorders (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 CMD^{ix}

8.5.2.3 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. There are about 30 accidental deaths a year (2010-14) from carbon monoxide (CO) poisoning in England and Wales. It is difficult to detect because you can't see, smell or taste it.

The people at greater risk of harm from cold weather are: older people (over 75 years old), other "frail" / vulnerable 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, 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 and other marginalised groups.

8.5.3 *What is Excess winter Deaths?*

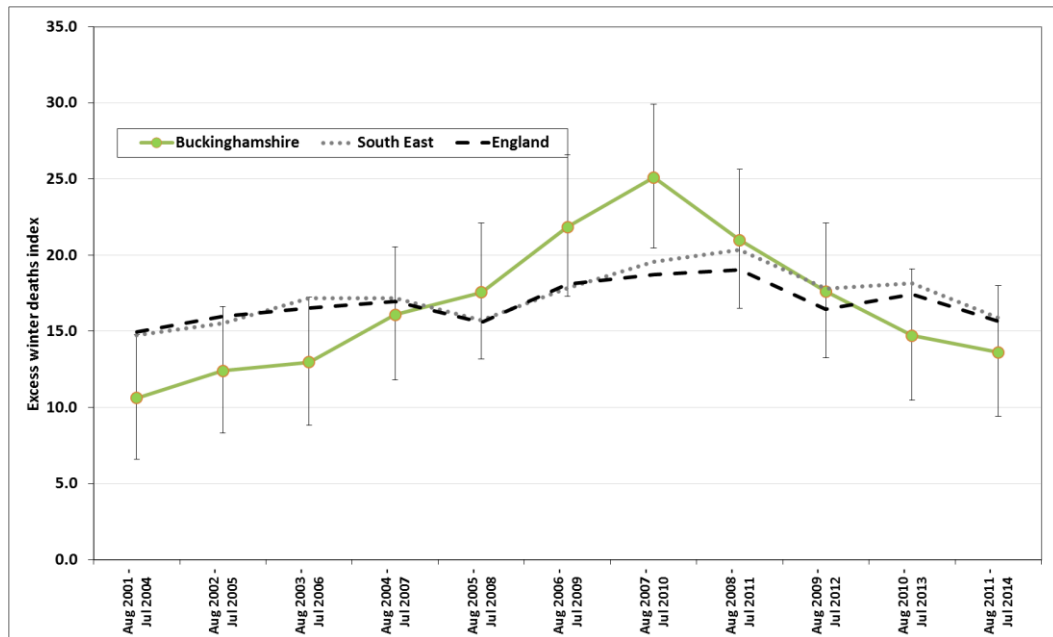
Excess Winter deaths: Average number of deaths during winter period (December to March) compared to the number of deaths that occurred in the preceding August to November and the following April to July (EWM = winter deaths - average non-winter deaths). This produces the number of excess winter deaths (EWDs), which is then rounded to the nearest 10 for final data and to the nearest 100 for provisional data (based on [Johnson and Griffiths \(2003\) \(97.4 Kb Pdf\)](#) .

Excess winter mortality (EWM) index Or Excess Winter Deaths Index (EWD Index) is the excess winter deaths measured as the ratio of extra deaths from all causes that occur in the winter months compared with the expected number of deaths, based on the average of the number of 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 Index = (EWM / average non-winter deaths) x 100). The EWM index is presented with 95% confidence intervals, which are calculated as: $EWM \text{ index} \pm 1.96 \times (EWM \text{ Index} / \sqrt{EWM})$. The EWM index shows the percentage of extra deaths that occurred in the winter and is reported to 1 decimal place. More details visit [PHOF](#).

8.5.4 *Excess winter death trends*

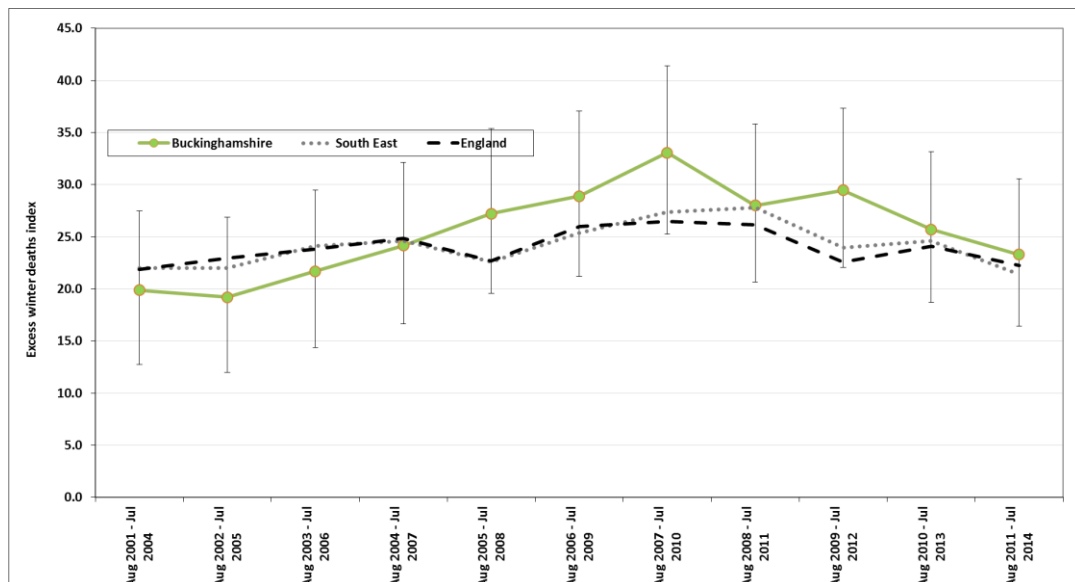
Excess Winter Deaths Index (EWD Index) is the excess winter deaths measured as the ratio of extra deaths from all causes that occur in the winter months compared with the expected number of deaths, based on the average of the number of non-winter deaths and expressed as percentage. There was 508 excess deaths during winter between Aug 2011 - Jul 2014 in Buckinghamshire with the three year average Excess Winter Deaths Index (EWD Index) of 13.6%. This was lower than England and South East averages but statistically comparable. The EWD index was 10.6% a decade ago (Aug 2001 - Jul 2004), significantly increased above to England and South East averages to 25.1% (Aug 2007 - Jul 2010) and then dropped to 13.6 (Aug 2011 - Jul 2014).

Figure 1 All age Excess winter deaths index in Buckinghamshire compared to South East and England averages, 3 years average (Aug 2001 - Jul 2004 to Aug 2011 - Jul 2014)



Source: Public Health England (PHOF)

Figure 2 Excess winter deaths index among people age over 85 years in Buckinghamshire compared to South East and England, 3 years (Aug 2001 - Jul 2004 to Aug 2011 - Jul 2014)



Source: Public Health England (PHOF)

The three year average Excess Winter Deaths Index (EWD Index) among residents aged 85+ years was 19.9% (Aug 2001 - Jul 2004) a decade ago. This increased to 33.1% (Aug 2007 - Jul 2010) in the middle before dropping to 23.3%. They are higher than England and South East averages after August 2004, but are statistically comparable.

8.5.5 Risk Factors

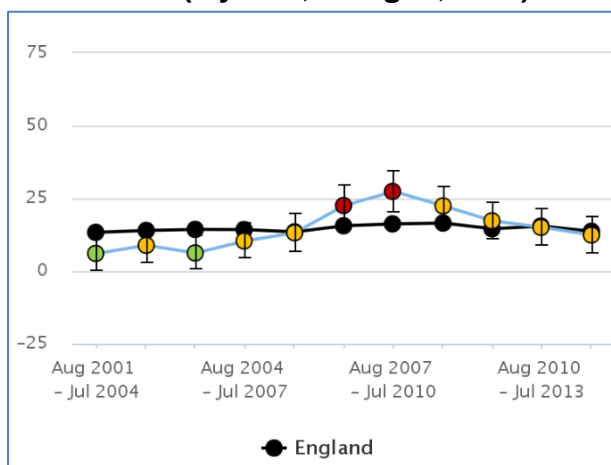
8.5.5.1 Age & Sex

Nationally, majority of deaths occurred among people aged 75 and over. There were an estimated 36,300 excess winter deaths in this age group in 2014/15, compared with 7,700 in people aged under 75. There were more excess winter deaths in females than in males in 2014/15, as in previous years in England. Male excess winter deaths increased from 7,210 to 18,400, and female deaths from 10,250 to 25,500 between 2013/14 and 2014/15.

In Buckinghamshire, there were 284 (EWD INDEX: 14.8%) excess winter deaths among females (all ages) compared to 225 (12.4%) among males between Aug 2011 - Jul 2014. The trends in EWD among men and women are shown in figure 3 & 4 respectively for all ages. Similar trends were seen among men and women over 85 years of age and were comparable with England averages during this period.

Figure 3 Excess winter deaths index (3 years, all ages, 85+) among men in Buckinghamshire compared to England between Aug 2001-Jul 2004 to Aug 2010-Jul 2013

EWD index (3 years, all ages, men)

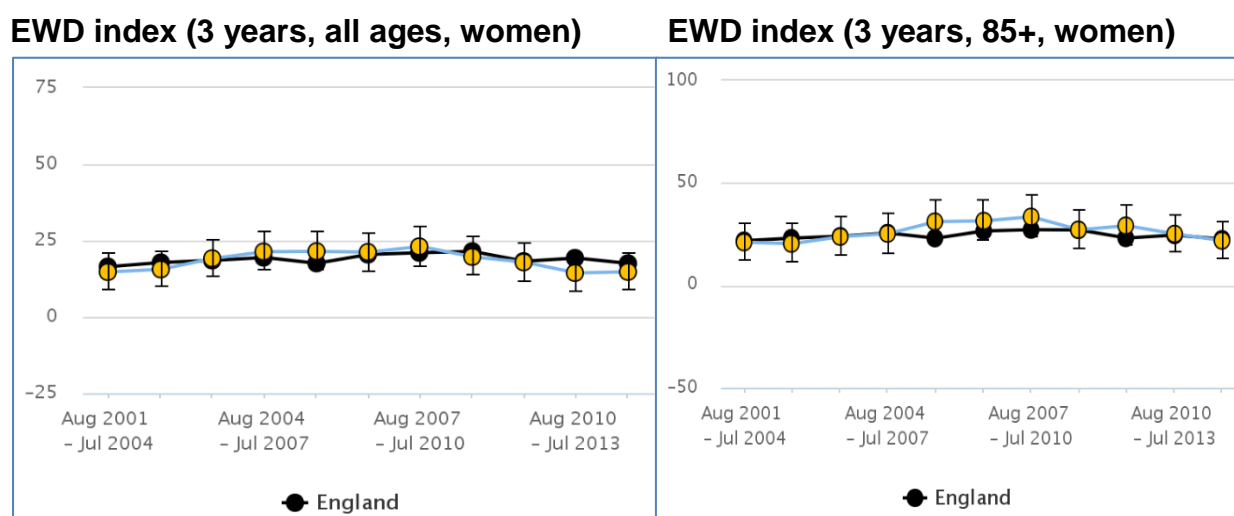


EWD index (3 years, 85+, men)



Source: PHE fingertips

Figure 4 Excess winter deaths index (3 years, all ages, 85+) among women in Buckinghamshire compared to England between Aug 2001-Jul 2004 to Aug 2010-Jul 2013



Source: PHE fingertips

8.5.5.2 Seasonal Flu

Influenza (commonly called **Flu**) is a respiratory disease caused by a viral infection affecting the lungs and airways. It is associated with potentially life threatening complications, such as bacterial pneumonia. The elderly and those with underlying health conditions are particularly at risk of developing complications^x, which can result in hospitalisation and death^{xi}. Respiratory disease is one of the main causes of excess winter deaths (EWDs); for example it was the underlying cause of death for more than a third (36%) of all excess winter deaths and Pneumonia was the underlying cause in 19% of all excess winter deaths in 2014/15. The majority of these deaths occurring in the over 75 age group. The seasonal flu vaccination programme is one of the evidence based ways to tackle excess winter deaths through improving immunity among vulnerable population.

Table 1 Number of people aged 65 + years and the flu jab uptake among them in Bucks by CCG compared to England, 2013/14 to 2015/16

Area	Eligible population			% Uptake		
	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16
Chiltern CCG	59,576	60,739	62,104	73.5%	73.2%	71.3%
A Vale CCG	34,664	35,652	36,559	73.5%	72.9%	70.6%
Bucks	94,796	96,932	98,663	73.5%	73.1%	71.0%
England				73.2%	72.7%	71.0%

Source: NHS England

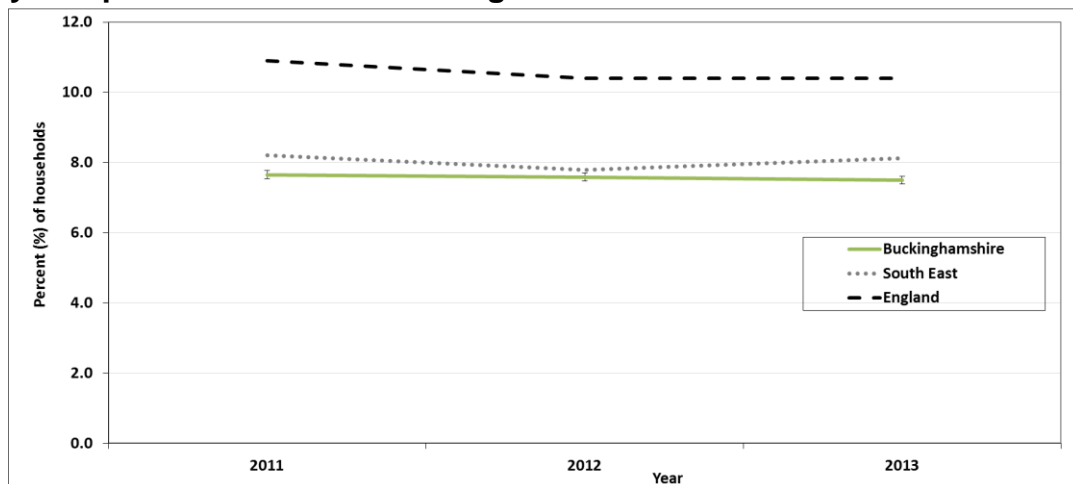
In Buckinghamshire, the number of people aged 65+ years of age increased from 94,796 (2013/14) to 98,663 (2014/15) in three years. Seasonal flu immunisation uptake among people over 65 years of age in Buckinghamshire was dropped from 73.5% (2013/14) to 71.0% (2015/16). This was in line and comparable with England averages. The uptake in Chiltern CCG was little better (71.3% in 2014.15) compared to AV CCG (70.6%).

8.5.5.3 Fuel Poverty

The percentage of households in an area that experience fuel poverty was calculated nationally based on the "Low income, high cost" methodology. Evidence shows that the drivers of fuel poverty (low income, poor energy efficiency and energy prices) are strongly linked to living at low temperatures¹. Marmot Review highlights that low temperatures are strongly linked to a range of negative health outcomes.

The percentage of households in Buckinghamshire that experience fuel poverty was 7.7% in 2011 and dropped to 7.5 in 2013. This was significantly lower than South East (8.1%) and England (10.4%) averages in 2013.

Figure 5 The percentage of households in Buckinghamshire that experience fuel poverty compared to South East & England. 2011-2013



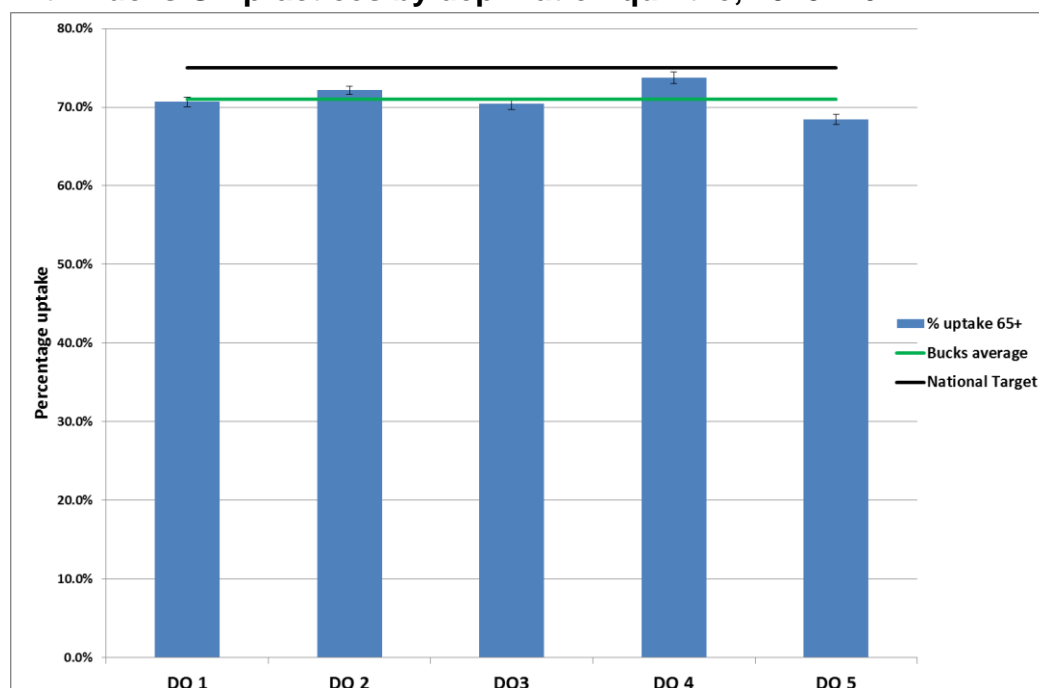
Source: PHE fingertips

¹ Wilkinson P et al. 2001. Cold Comfort: The Social and Environmental Determinants of Excess Winter Death in England, 1986-1996. Bristol: The Policy Press

8.5.6 Inequalities

Figure 6 shows the Seasonal flu immunisation uptake by GP practice based deprivation quintiles. The uptake was significantly lower in DQ5 (68.4%) compared to all other DQs, Bucks (71%) and national target (75%) in 2015/16.

Figure 6 Flu Immunisation Uptake (%) among people aged 65+ years registered with Bucks GP practices by deprivation quintile, 2015 -16

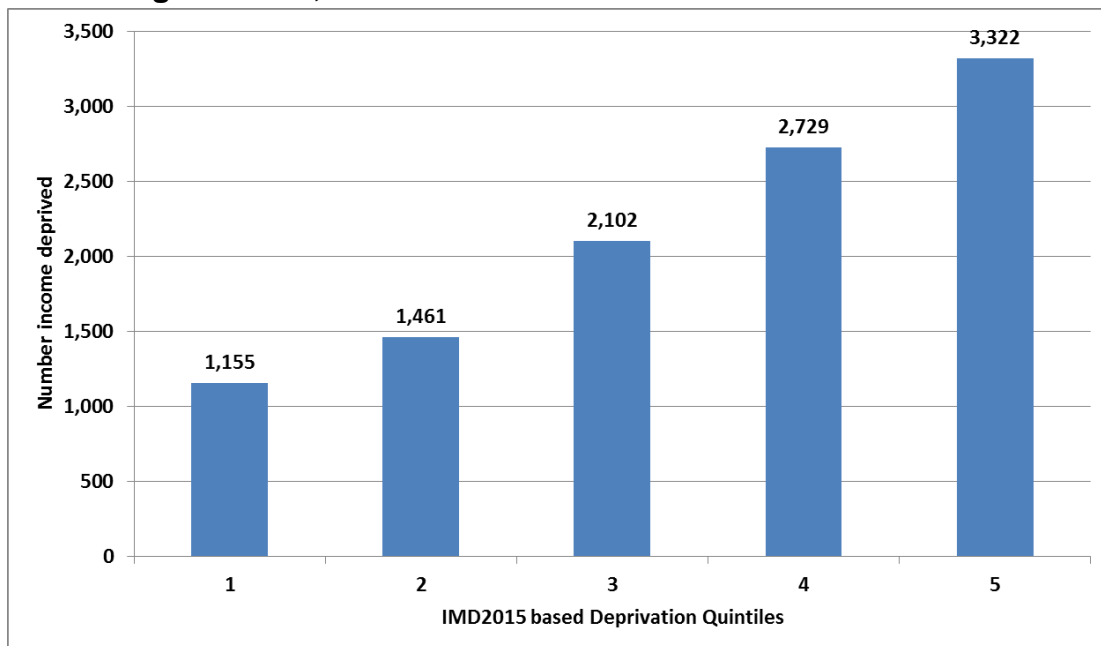


Source: NHS England: (DQ1: least deprived and DQ5 is most deprived)

8.5.6.1 Income Deprivation Affecting Older People Index (IDAOPI)

IDAOPI is a subset of the Income Deprivation and is based on the percentage of the population aged 60 and over who receive income support, income based job seekers allowance, pension credit or child tax credit claimants aged 60 and over and their partners (if also aged 60 or over). The lower super output area (LSOA) with a rank of 1 is the most deprived and all LSOAs are grouped in to deprivation quintiles. The figure below shows the actual number of people aged 60+ based on IDAOPI by IMD based deprivation quintile (DQ1: least deprived and DQ5 is most deprived). The number of people in this category increased from least deprived (DQ1: 1,155) to most deprived (DQ5: 3,322) in 2015.

Figure 7 Total number of persons aged 60+ based on IDAOPI by IMD based DQ in Buckinghamshire, 2015



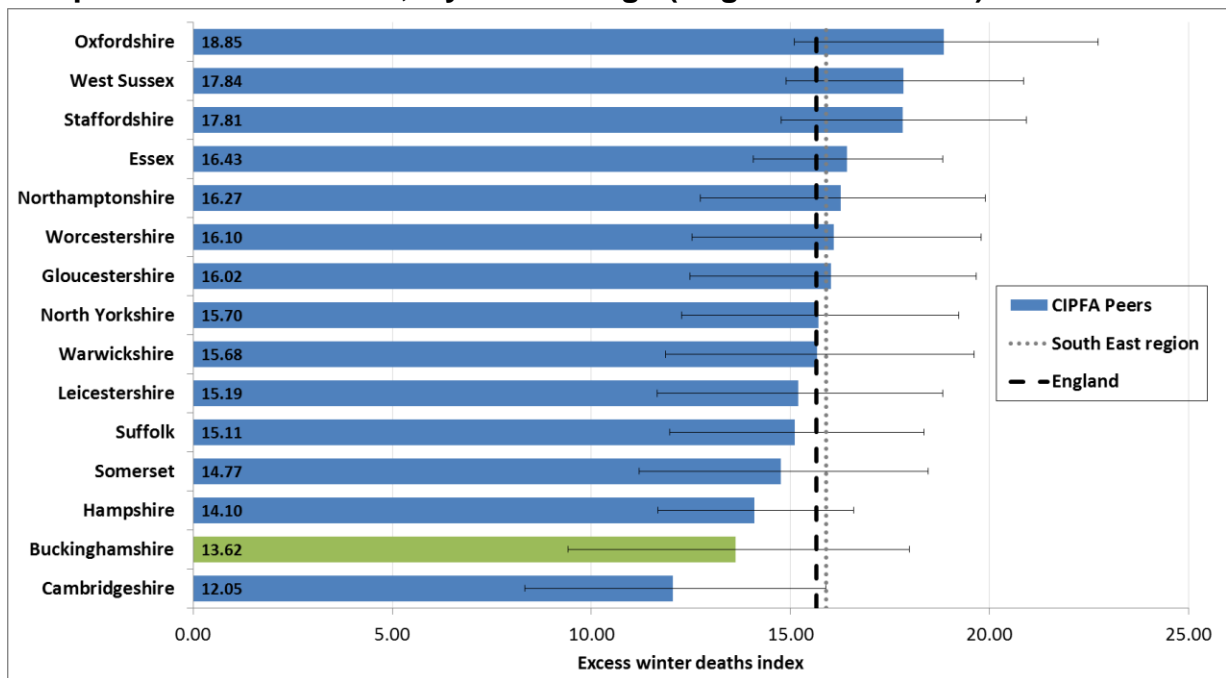
Source: *English Indices of Deprivation 2015*

8.5.7 Comparisons

The figures below (8,9) shows EWDs index (3 years average; Aug 2011 - Jul 2014) among all age and aged 85+ in Buckinghamshire compared to CIPFA Peers. As the numbers were relatively small, the confidence intervals were wide and so, it is statistically comparable to all CIPFA Peers and national averages.

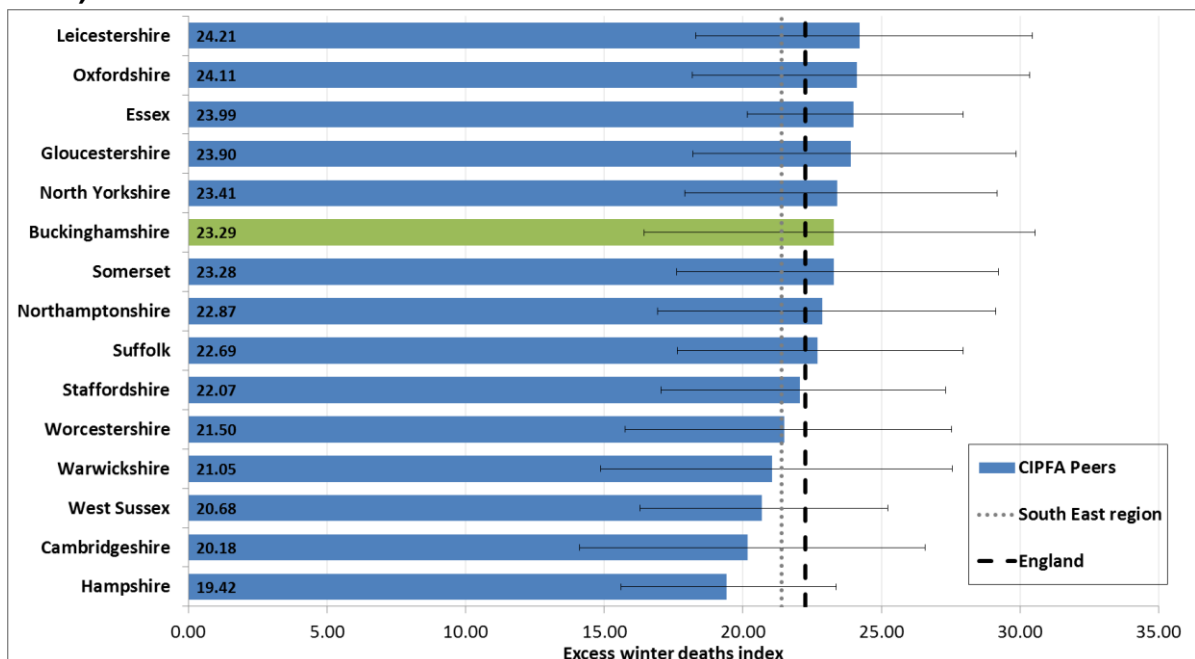
EWDs index (3 years average; Aug 2011 - Jul 2014) for all four district councils among all age is shown in figure 10. EWD index was lower in Wycombe and higher in South Bucks, but they were statistically comparable between District councils and National averages due to small numbers.

Figure 8 Excess winter deaths index among all age in Buckinghamshire compared to CIPFA Peers, 3 years average (Aug 2011 - Jul 2014)



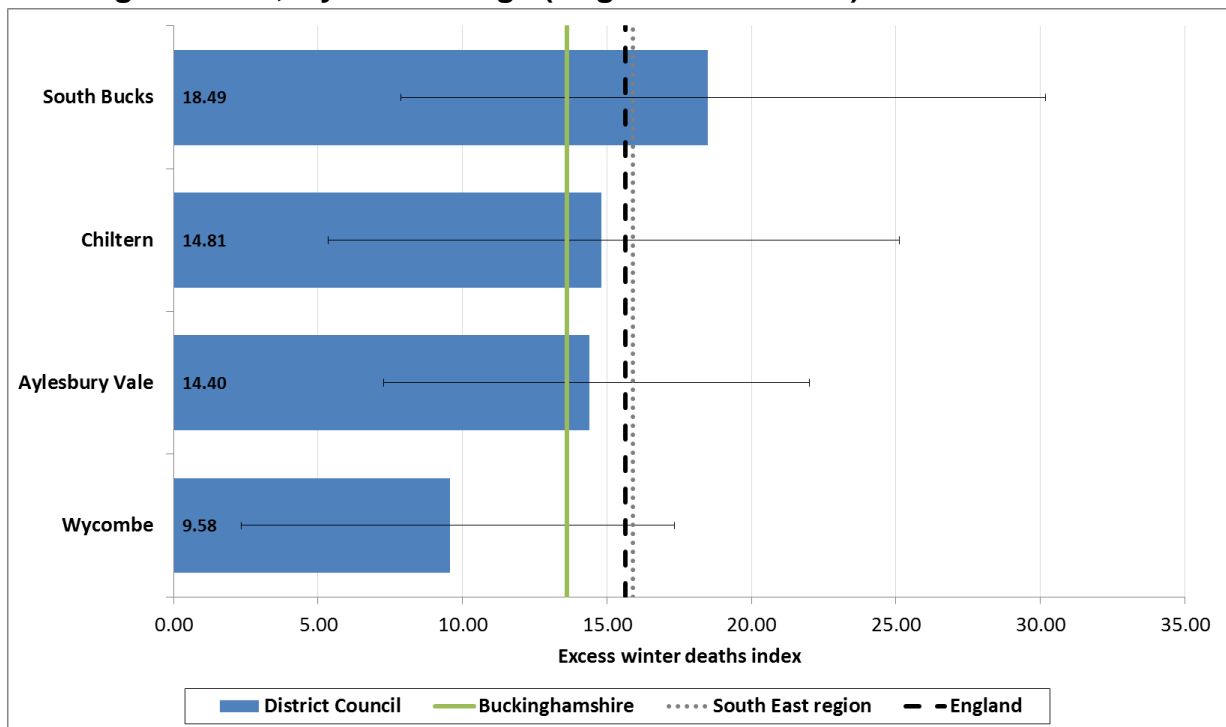
Source: Public Health England (PHOF)

Figure 9 Excess winter deaths index among people aged above 85 years in Buckinghamshire compared to CIPFA Peers, 3 years average (Aug 2011 - Jul 2014)



Source: Public Health England (PHOF)

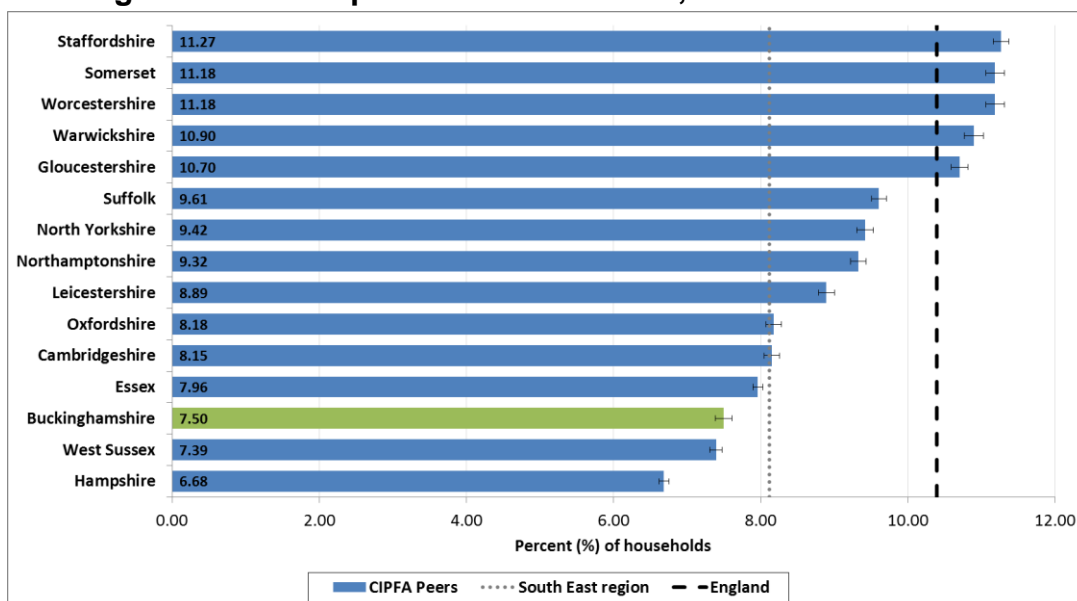
Figure 10 Excess winter deaths index among all age by District Council in Buckinghamshire, 3 years average (Aug 2011 - Jul 2014)



Source: Public Health England (PHOF)

The percentage of households in an area that experiences fuel poverty (2013) in Buckinghamshire compared to CIPFA Peers is shown in the figure below. Fuel poverty in Buckinghamshire (7.5%) was significantly lower than a number of other CIPFA Peers (except Wessex and Hampshire) and regional and national averages in 2013.

Figure 11 The percentage of households who experience fuel poverty in Buckinghamshire compared to CIPFA Peers, 2013



Source: Public Health England (PHOF)

8.5.8 *Horizon scanning*

Department of Health “Cold Weather Plan” (CWP) emphasised the effect of cold on health and healthcare services. This national plan is an essential component of overall winter planning and wider health promotion activity to protect individuals and communities from the effects of severe winter weather. The risk of death increases as temperatures fall. However, 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.

NICE Guidance on Excess winter deaths and morbidity was published in 2015. It highlights the health risks associated with cold homes. NICE also included pregnant women as a vulnerable group. The national CWP is entirely consistent with the NICE recommendations, including the need for strategic approaches, single point of contact services offering tailored solutions to which all who come into contact with vulnerable people can refer.

The Department for Energy and Climate Change also published a new strategy – “Cutting the cost of keeping warm: A fuel poverty strategy for England”. It emphasises the role the health and social care sector can play in tackling fuel poverty.

In Buckinghamshire, EWD is comparable with regional and England average. However, the fuel poverty (one of the risk factor for EWD) was significantly lower than regional and England average. The proportions of at-risk groups for EWD including older people are increasing (Population JSNA chapter). There were wide variations in EWD and the risk factors for EWD within Buckinghamshire.

8.5.9 *Recommendations*

- All stakeholders (BCC, DC, CCG, NHS etc) jointly produce a cold weather plan every year
- Relevant stakeholders to work together to tackle fuel poverty
- Housing departments to ensure that support is available to vulnerable people to keep themselves warm in winter.
- To improve the uptake of flu vaccination with a focus on eligible children, the over 65s, pregnant women and those in at-risk groups.
- To raise awareness of winter warmth & flu immunisation among older people in the community targeting those living in deprived communities and for those from priority groups for example: carers, those with long term conditions, mental

health problems, learning disabilities and Black and Minority Ethnic (BME) communities.

- By improving access to flu jabs by offering the jab through alternative settings for example community pharmacies, antenatal clinics, schools, children's centres etc.

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References

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- i Statistical bulletin: Excess Winter Mortality in England and Wales : 2014/15.
<http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/201415provisionaland201314final> accessed on 14/6/2016
- ii The Eurowinter group (1997) Cold exposure and winter mortality from ischaemic heart disease, cerebrovascular disease, respiratory disease, and all causes in warm and cold regions in Europe. *The Lancet* 349, 1341-1346
- iii Curwen M (1990/91) Excess winter mortality: a British phenomenon? *Health Trends* 4, 169-75
- iv Healy, J. (2003) Excess winter mortality in Europe: a cross country analysis identifying key risk factors in *British Medical Journal* <http://jech.bmj.com/content/57/10/784.full>
- v Department of Health (2010) 'Winter Kills' in 2009 Annual Report of the Chief Medical Officer.
http://www.sthc.co.uk/Documents/CMO_Report_2009.pdf
- vi Marmot Review Team (2011): The Health Impacts of Cold Homes and Fuel poverty.
<http://www.instituteofhealthequity.org/projects/the-health-impacts-of-cold-homes-and-fuel-poverty/the-health-impacts-of-cold-homes-and-fuel-poverty-full-report.pdf>
- vii The Cold Weather Plan for England. Protecting health and reducing harm from cold weather. Public Health England, 2015.
- viii 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
- ^{ix} 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
- ^x Public Health England. <https://www.gov.uk/government/collections/seasonal-influenza-guidance-data-and-analysis> accessed on 4 Jul 2016
- ^{xi} Public Health England. <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk> accessed on 4 Jul 2016