Section A: CPHE to complete	
Name:	Christine Liddell
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Guidance title:	
Committee:	Cold Homes and Excess Winter Deaths
Subject of expert testimony:	EWD, Alzheimer's Disease and Dementia
Evidence gaps or uncertainties:	[Please list the research questions or evidence uncertainties that the testimony should address]

- Are EWD's equally spread across all causes other than cardiovascular and respiratory causes?
- If not, what are the implications, if any, for treatment and prevention?

Section B: Expert to complete	
Summary testimony:	[Please use the space below to summarise your testimony in 250 – 1000 words – continue over page if necessary]

Excess winter deaths are most commonly associated with a few specific causes of death, most notably those caused by respiratory and cardiovascular episodes. Recently, however, the Office for National Statistics has begun citing excess winter deaths where dementia and Alzheimer's Disease are nominated as causes on death certificates. Table 1 provides a summary of the latest annual review of data on excess winter deaths.

Table 1 : Excess winter deaths, England and Wales (all ages).

	Respiratory causes	Circulatory causes	Dementia & Alzheimer's*	Injury & Poisoning
2009/10	**43%** more in winter	**20%** more in winter	**35%** more in winter	**11%** more in winter
2010/11	**51%** more in winter	**15%** more in winter	**43%** more in winter	**10%** more in winter
2011/12	**40%** more in winter	**16%** more in winter	**29%** more in winter	**16%** more in winter

Source: ONS, 2013

Excess winter deaths where Dementia and Alzheimer's disease are nominated accounted for over 2,400 excess winter deaths in each of these 3 years. Whilst most of these deaths occurred among people over 75, the ONS 2011 report states that:

> "*Dementia and Alzheimer's disease was one of the leading causes of death in 2010 (ONS, 2011), and also displays marked seasonal effects. In 2009/10 there were 2,420 excess winter deaths from this cause, 22 per cent lower than in 2008/09, but 36 per cent higher than 2007/08. The number of excess winter deaths from dementia and Alzheimer's disease were much higher in people aged 75 and over, but the greatest seasonal effect was seen in people aged 65 to 74. The reasons for the seasonal pattern in deaths from dementia and Alzheimer's disease are not clear. However, it may be related to the greater vulnerability of people with these conditions to respiratory diseases, difficulties with self-care, and falls, all of which may be more important in winter months*." (p. 10).

This pattern may have been evident for some time, although only one year of data from earlier on could be sourced from the public domain. In 1996/1997, the Excess Winter Deaths Indices for respiratory, circulatory, and "mental disorders" (which are stipulated as being largely dementia) were:

- 2.00 for respiratory causes
- 1.24, for circulatory causes
- 1.37 respectively for mental disorders.

In other words, there were proportionally more excess winter deaths attributed to dementia in the late 90's than were attributable to circulatory causes – which continues to be the case in 2011/12.

Reasons for this pattern are, as ONS conclude, uncertain, and may end up being attributable to issues of little relevance to treatment and prevention. For example, between the 1990's and 2011/12, the classification system for attributing underlying causes of deaths changed from ICD-9 to ICD-10. This change was particularly significant for causes such as dementia; however, it seems not to have altered the pattern of excess winter prevalence. Other possible explanations might involve the complexities of managing a heating routine (boiler settings, timers, thermostatic

valves, radiators in need of bleeding etc.), which might especially implicate younger sufferers still living at home. Perhaps more research could be undertaken, to ascertain whether this excess winter death ratio among people suffering from Alzheimer's Disease and dementia creates issues for treatment and prevention. If data are available from 1996/7 onwards, then multivariate analyses by gender, age, other causes listed on death certificates, and location of death (in their own home or in another location) could be helpful in the first instance.
References (if applicable):
Annual reports on excess winter deaths (England and Wales) published by the Office for National Statistics.