



**WIRRAL
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Excess Winter Deaths in Wirral: 2017/18 update

**Wirral Intelligence
Service**

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Excess Winter Deaths in Wirral: 2017/18 update

For further information please contact:

Public Health Intelligence Team,

Wirral Intelligence Service,

Old Market House, Hamilton Street, Birkenhead, Wirral CH41 5AL

Email: intelligencerequests@wirral.gov.uk

Website: www.wirralintelligenceservice.org.uk

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V1-3	March 2019	Matthew Ray	Sarah Kinsella	Various, Key Findings not yet updated for 17/18
V1-4	May 2019	Matthew Ray	Edward Kingsley	Various

Report Overview

Abstract	
Intended or potential audience	External <ul style="list-style-type: none">• Community & voluntary sector organisations• Councillors and Constituency Managers• CCG and CT colleagues Internal <ul style="list-style-type: none">• JSNA Bulletin• DMT (plus other departmental DMTs)• Housing Team colleagues
Links with other topic areas	<ul style="list-style-type: none">• Housing conditions• Deprivation• Life Expectancy

- Published data for 2017/18 showed an increase in Excess Winter Deaths both nationally, regionally and locally compared to 2016/17.
- Wirral (23.5%) had a lower Excess Winter Mortality Rate (EWMI) than the North West (30.8%) and England and Wales (30.3%) in 2017/18. This was an increase on 2016/17, when the Wirral EWMI was 17.3%
- Published data for 2017/18 showed an increase in Excess Winter Deaths both nationally, regionally and locally compared to 2016/17.
- In Wirral, males (18.2%) had lower EWMI than females (28.5%). This replicated the trend in England & Wales, with females (33.6%) having a higher EWMI than males (26.8%)
- Females aged 85+ (37%) had the highest EWMI in Wirral. The second highest was again in females aged 75-84, followed by males aged 85+ (35% and 32% respectively)
- In England & Wales, the EWMI for Respiratory diseases, Circulatory diseases and Dementia & Alzheimer's more than doubled between 2015/16 and 2017/18 and overall, the EWMI rose for Wirral during the same time period.
- South Wirral Locality (38%) had the highest EWMI of the four Wirral Localities, followed by Birkenhead (34%)
- Of the main causes of death groupings, respiratory disease had the highest EWMI for Wirral (73%) and England & Wales (85%)
- There are many different factors which impact on Excess Winter Deaths. Environmental, social and personal factors such as deprivation, age, gender, housing status and thermal efficiency of the home all have an impact

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Notes

Analysis is not routinely provided at a lower level geography than ward, except for a 3-years pooled ward level breakdown in the appendix 2 of this report. Ward level data should be used with caution, as small numbers can lead to significant fluctuations for single year data.

EuroMOMO (2017) reported that excess winter mortality in 2016/17 showed a marked level of excess mortality across Europe in general. Both all-cause and influenza-attributable mortality peaked in January and February 2017 and affected older individuals in particular. This mortality pattern coincided with the circulation of the influenza A(H3N2) strain during this season throughout Europe.

Thanks to Edward Kingsley (Principal Strategic Housing & Investment Officer from Wirral Council for key contributions to this report.

Introduction

The Excess Winter Mortality Index (EWMI) is a statistical measure used by the Office of National Statistics (ONS) to quantify the impact of the winter months on mortality. Deaths occurring between December and March, over and above what would be expected during the non-winter months, are classed as Excess Winter Deaths (EWD).

They are calculated by taking the average number of deaths over the previous period (August to November) and the subsequent period (April to July) and subtracting them from the total number of deaths during the winter period (December to March), as shown below:

$$\frac{\text{Aug to Nov deaths} + \text{Apr to Jul deaths}}{2} = \text{Average non-winter deaths}$$

$$\text{Dec to Mar deaths} - \text{Average non-winter deaths} = \text{Excess Winter Deaths}$$

The Excess Winter Mortality Index (EWMI) is then calculated by expressing the excess winter deaths as a percentage of the average non-winter deaths:

$$\frac{\text{EWD}}{\text{Average non-winter deaths}} \times 100 = \text{Excess Winter Mortality Index}$$

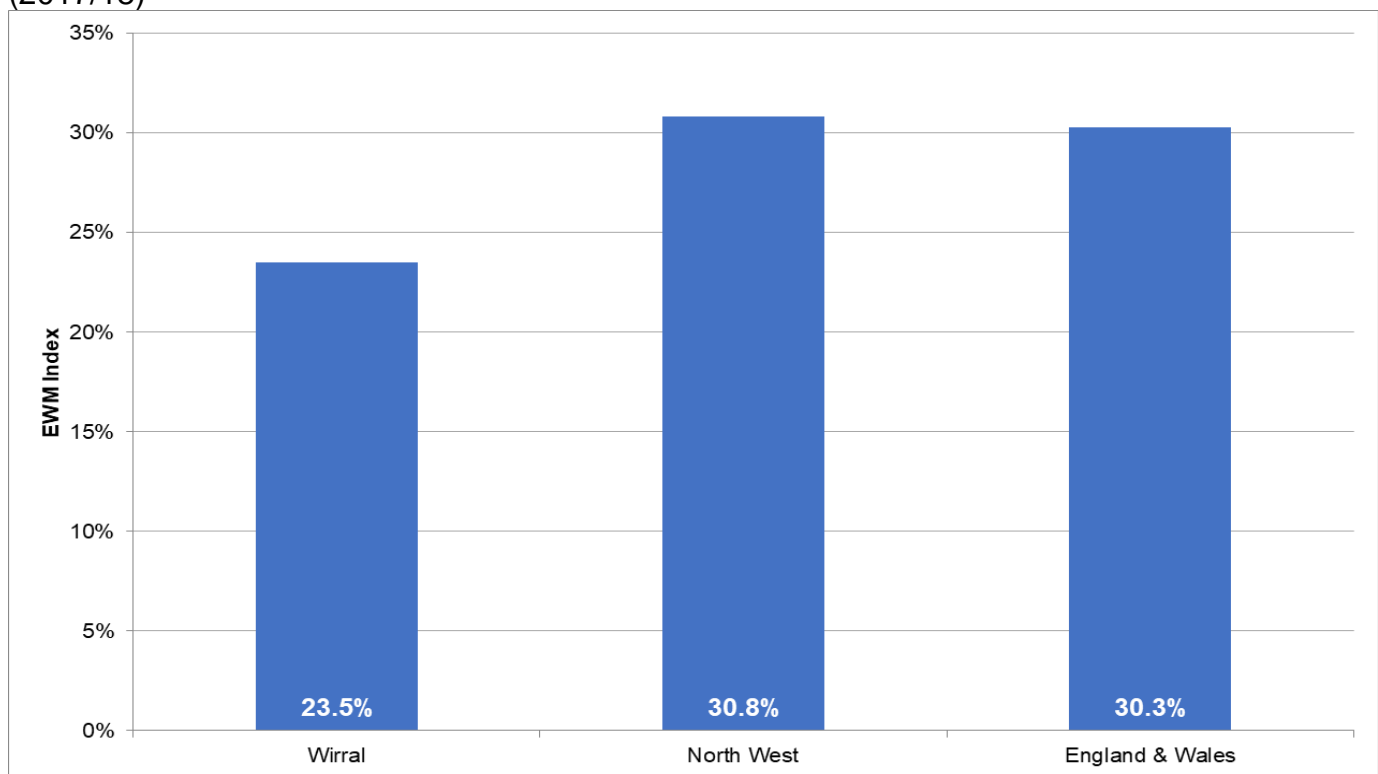
ONS focuses its EWMI report on the following areas:

- Age and Gender
- Geography
- Temperature
- Cause of death, specifically; Circulatory Diseases, Respiratory Diseases and Dementia & Alzheimer's disease
- Influenza (flu) rates

This report will look at all of these factors in addition to deprivation, energy efficiency and housing tenure. Appropriate comparisons to national and regional figures will be provided where possible. The report produced by ONS can be found on <http://www.ons.gov.uk/>.

Excess Winter Deaths in Wirral

Figure 1: Excess Winter Mortality Index for Wirral, the North West and England and Wales (2017/18)



Source: [ONS](#), 2018

Figure 1 shows that Wirral had a lower EWMI than the North West and England and Wales in 2017/18

The EWMI for all areas increased significantly over the last 3 reported years from 2015/16 to 2017/18 (Appendix 1). England and Wales's EWMI increased by 50.8% (14.9% to 30.3%), the North West increased by 51.3% (14.9% to 30.8%) and Wirral's increased by 8.1% (21.6% to 23.5%) for the same time period although that did follow a decrease in Wirral in 2016/17 compared to national and regional figures.

Trend in Excess Winter Mortality Index

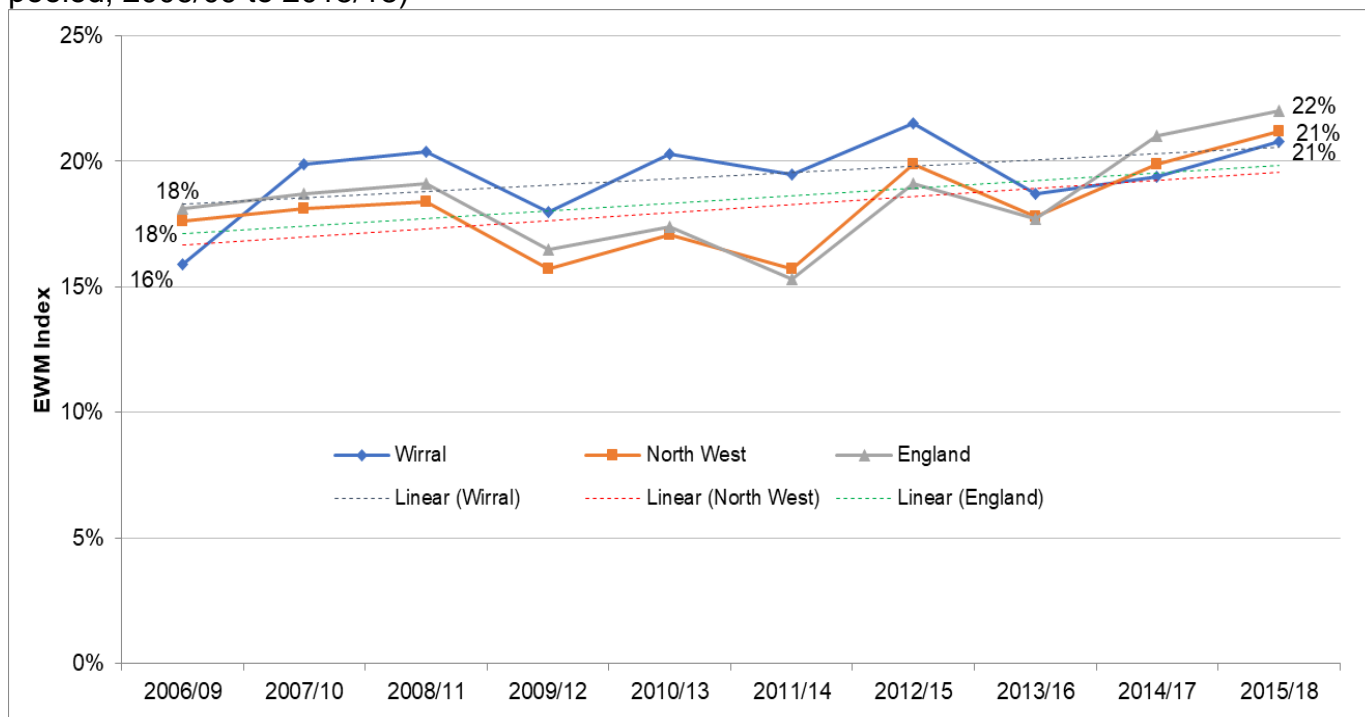
Excess Winter Mortality Index (EWMI) can fluctuate dramatically between years (see Appendix 1), so to smooth out the yearly variations, 3-year averages have been calculated for EWMI in Wirral, North West and England and Wales (Figure 2 below).

Between 2006-2009 and 2015-2018, the excess winter mortality 3-year pooled average has fluctuated between 16% (the lowest for Wirral in 2006-2009) to 22% in 2012-15.

The trend line (dotted line) however shows that despite fluctuation, the overall trend is an upward one for Wirral, the North West and England.

Wirral has broadly followed the same pattern as both the North West and England and Wales but has consistently had a higher average than both the North West and England and Wales since 2006/09. This trend ended in Wirral in 2014/17. In 2015/18, Wirral was again below the North West and England and Wales 3 year average.

Figure 2: Trend in Excess Winter Mortality Index in Wirral, North West and England (3 years pooled, 2006/09 to 2015/18)

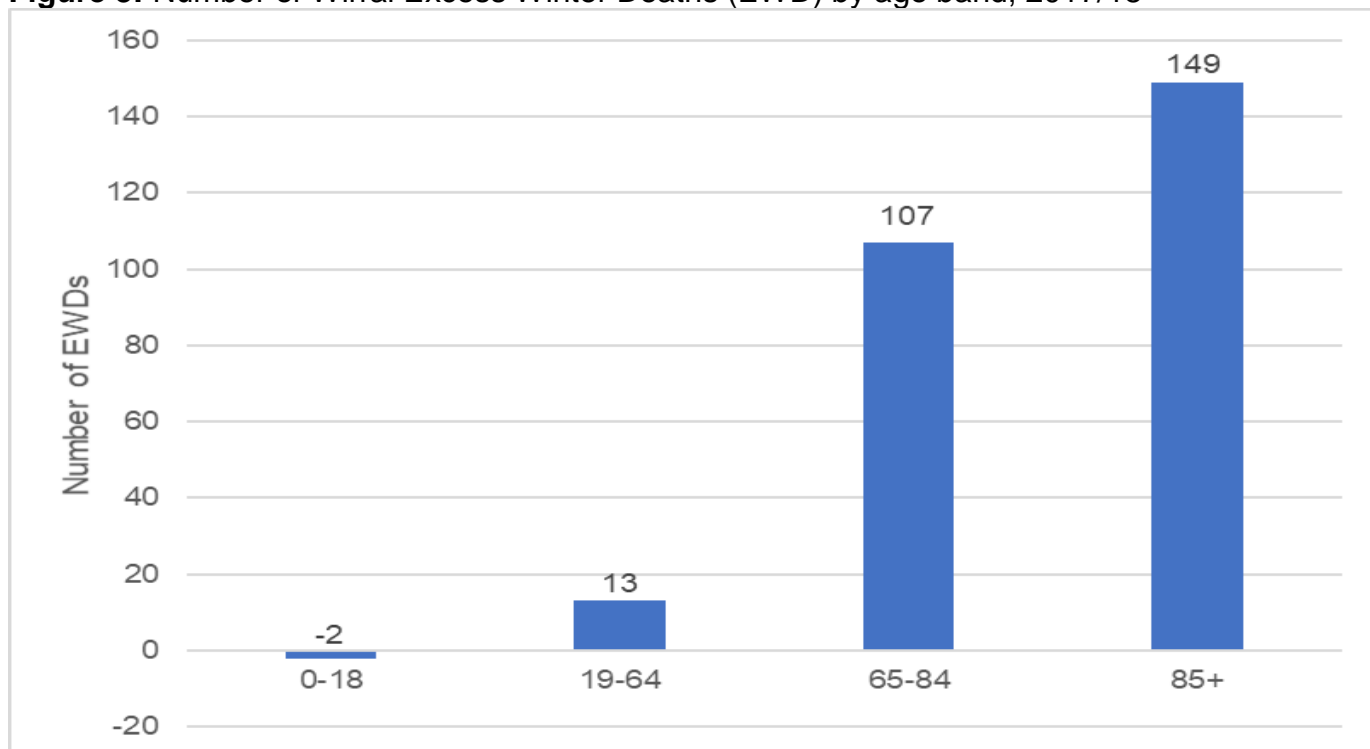


Source: [ONS](#), 2018

Age

Wirral has an ageing population and Figure 3 (below) highlights that early winter deaths increase with age; those aged 85+ are most vulnerable age group during winter months. The total number of excess winter deaths was 149 for this age group in 2017/18.

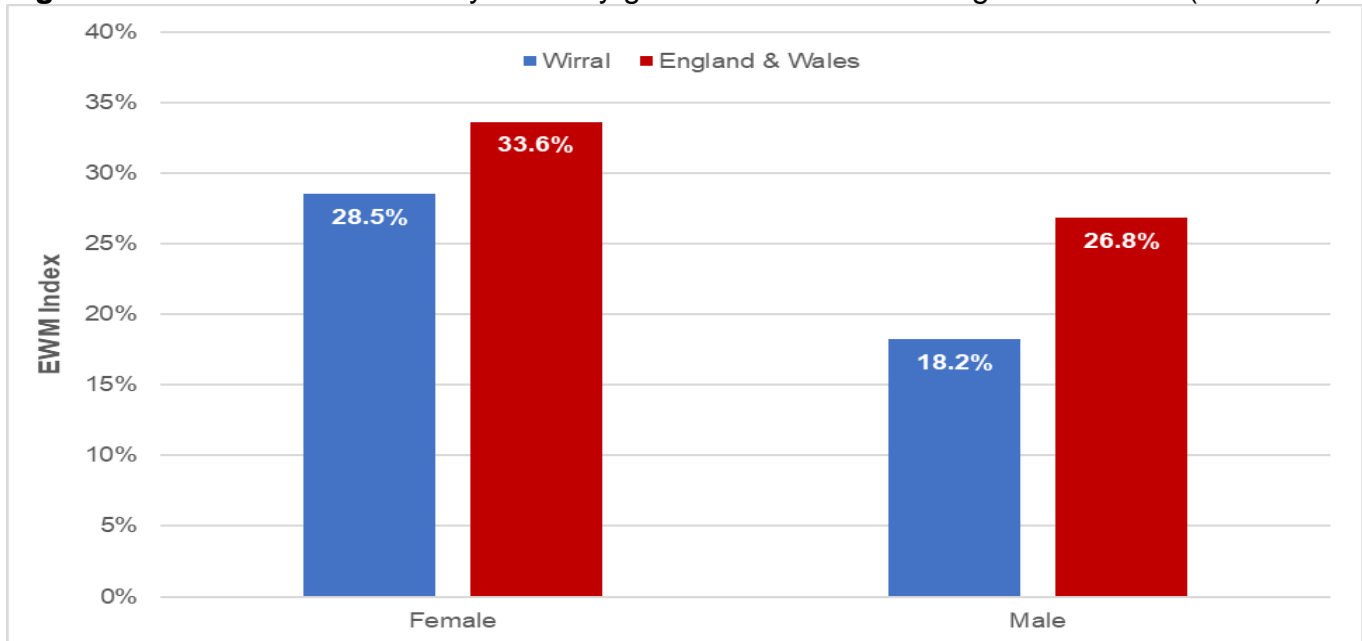
Figure 3: Number of Wirral Excess Winter Deaths (EWD) by age band, 2017/18



Source: Public Health Mortality Files, Wirral Council, 2018

Note: The number -2 in the 0-18 age band denotes that there were 2 less deaths than might be expected during the Winter months in this group

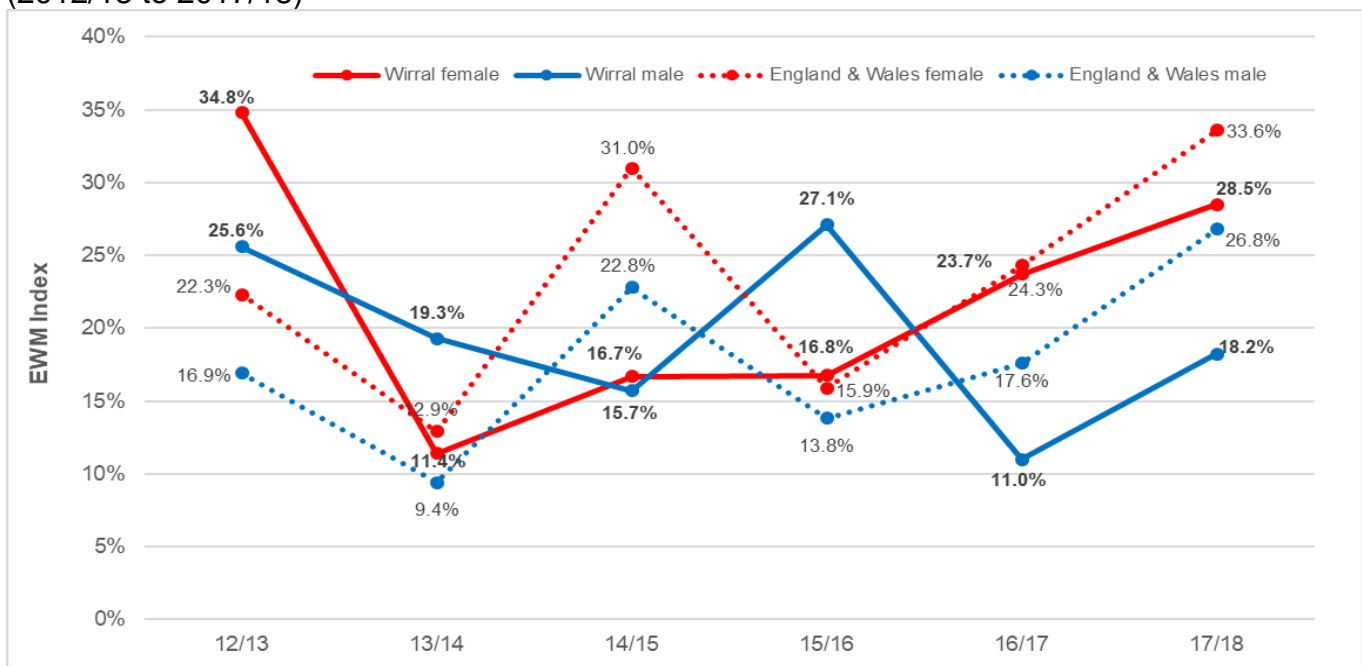
Figure 4: Excess Winter Mortality Index by gender for Wirral and England & Wales (2017/18)



Source: Public Health Mortality Files, Wirral Council, 2016 and [ONS](#), 2018

Figure 4 shows that Wirral has a lower Excess Winter Mortality Index (EWMI) than England and Wales in both males and females. In both England & Wales and Wirral, females had a higher EWMI than males (females aged 85+ typically having the highest EWMI of all). This trend was also evident in 2016/17, when females had an EWMI of 23.7% and males, 11.0% (ONS, 2018).

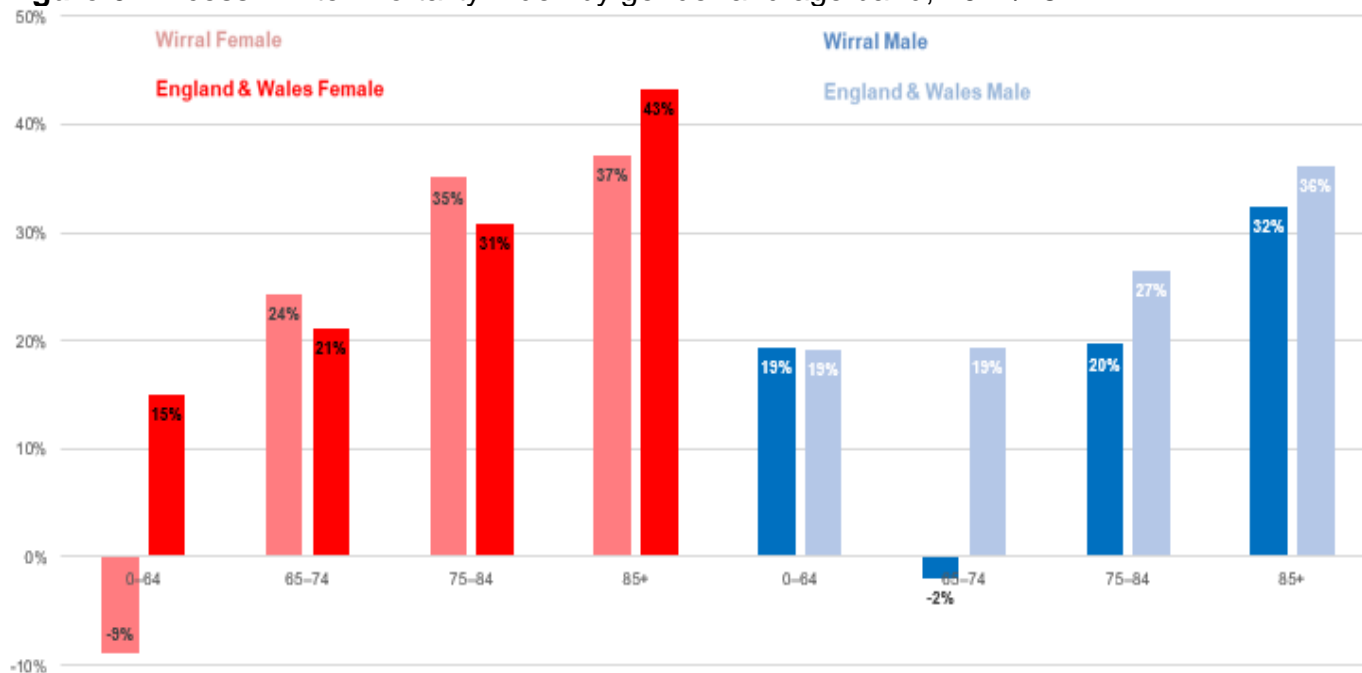
Figure 5: Trend in Excess Winter Mortality Index by gender in Wirral and England and Wales (2012/13 to 2017/18)



Source: Public Health Mortality Files, Wirral Council, 2018

Figure 5 shows that there has been some fluctuation in the EWMI in both males and females over the past 6 years in Wirral. At the start of the period, females had a much higher EWM Index than men (12/13). Over the next 3 years males (13/14 and 15/16) had higher rates than females until 16/17 where females EWMI has surpassed the males for the last two reported years creating a horseshoe effect in the chart above.

Figure 6: Excess Winter Mortality Index by gender and age band, 2017/18



Source: Public Health Mortality Files, Wirral Council, 2018

Figure 6 splits the EWMI by age bands and gender. As the chart shows, female EWMI in Wirral was lower in the 65-74 and 75-84 age bands and lower in the two age bands at either end of the age spectrum (0-64 and 85+) compared to England and Wales. Overall, Wirral was 5% lower than the England and Wales EWMI.

It was a completely different picture for men. Wirral males had lower EWMI than England & Wales in 3 of the 4 age bands with the exception of the 0-64 bracket (0.2% higher). The greatest difference between the Wirral and England & Wales EWMI was in males aged 65-74 (-2% vs 19% or a 21% difference) as shown above.

This breakdown by age band reinforces the findings in Figure 5, where Wirral shows a similar trend to the national picture over the latest two reported years, i.e. female EWMI was higher than England and Wales, while male EWMI was lower.

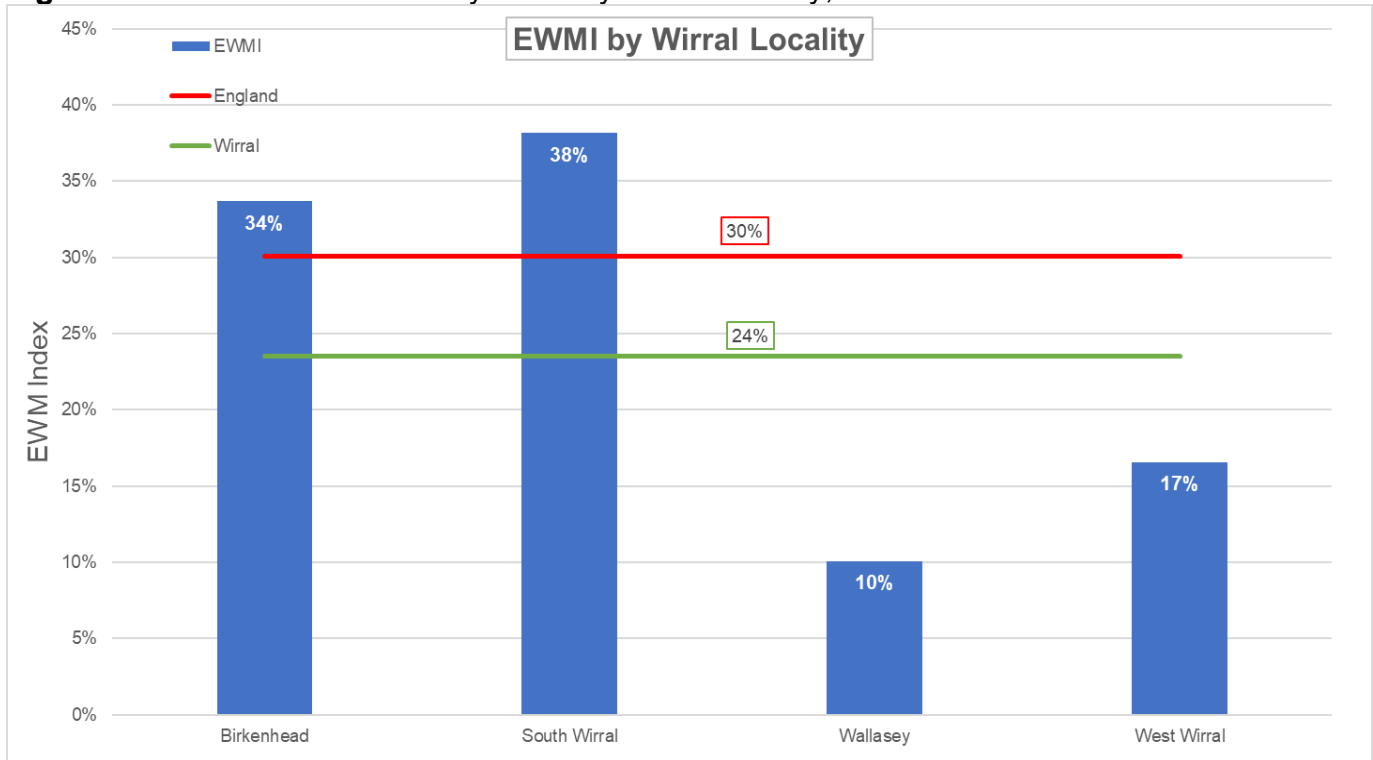
Geography

Figure 7 (below) shows that 2 constituencies in Wirral had a higher EWMI than the national figure in 2017/18. Birkenhead and South Wirral localities had the highest EWMI rates (34% and 38%), in Wirral. Wallasey and West Wirral constituencies had lower EWMI rates (10% and 17%) and were both lower than the national average.

This indicates that the causes of Excess Winter Deaths are complex and not confined to deprivation, given that Birkenhead is the most deprived Constituency in Wirral, while South Wirral is one of the least deprived, yet they both have similarly high EWMI rates. South Wirral Locality does, however, have an older age profile than Wirral overall.

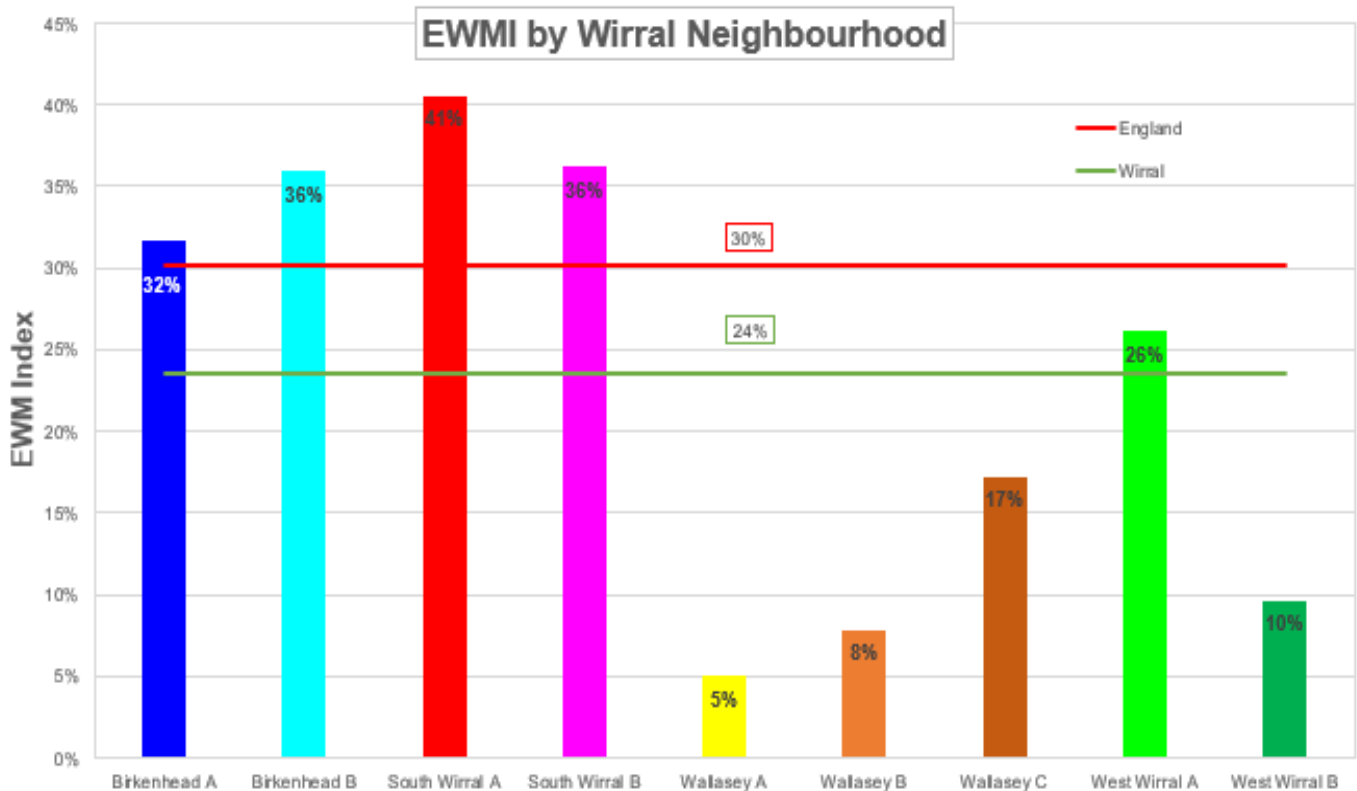
See Appendix 2 for EWMI by Wirral ward for 2015/18 pooled years.

Figure 7: Excess Winter Mortality Index by Wirral Locality, 2017/18



Source: Public Health Mortality Files, Wirral Council, 2018

Figure 8: Excess Winter Mortality Index by Wirral Neighbourhood, 2017/18



Source: Public Health Mortality Files, Wirral Council, 2018

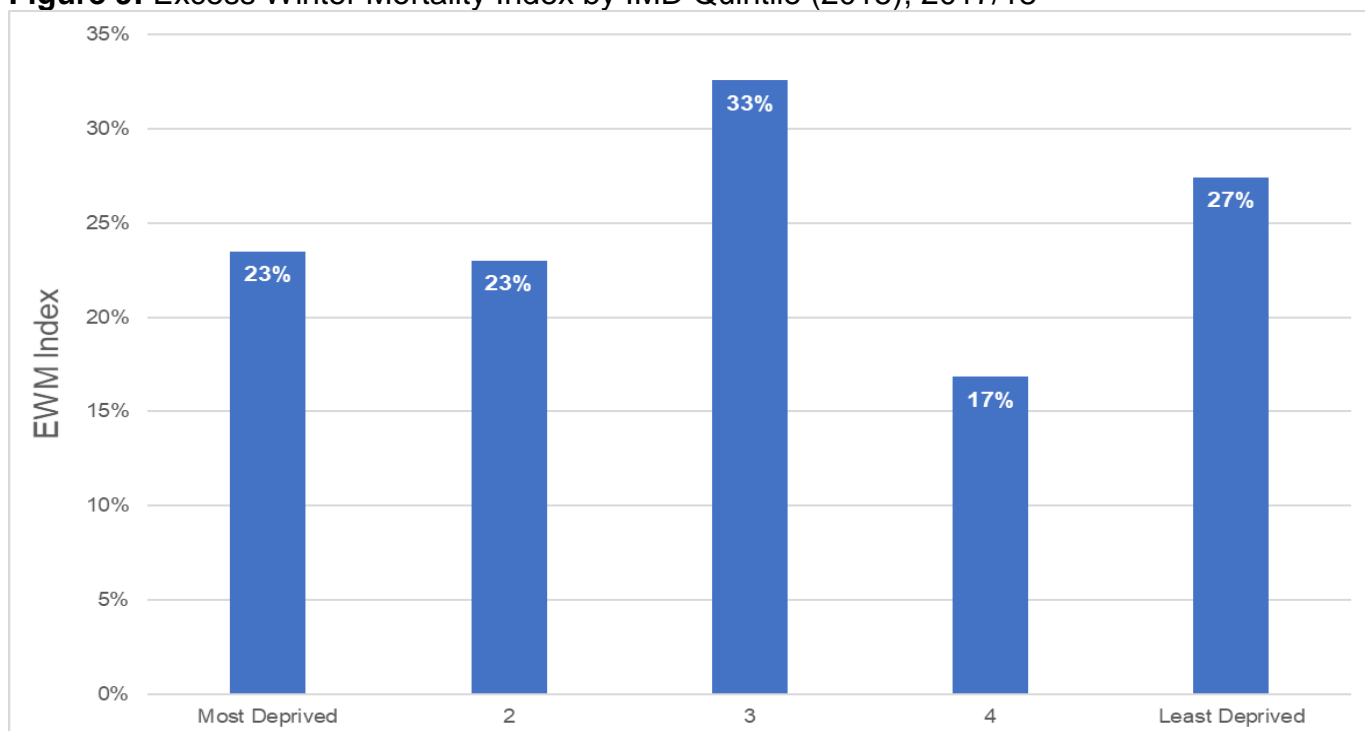
Figure 8 (above) shows that 4 of the 9 Neighbourhoods in Wirral had a higher EWM Index than the national figure of 30% in 2017/18. South Wirral A, South Wirral B and Birkenhead B neighbourhood areas had the highest EWM Index rates (41% and 36%) in Wirral.

Wallasey A, Wallasey B and West Wirral B neighbourhoods had the lowest EWMI rates (5%, 8% and 10%). When looking at the results in these smaller geographies, it is again apparent that the causes of excess winter deaths are complex and not confined to deprivation, as West Wirral A is an affluent area and Birkenhead A is a deprived area but have similarly high results (26% and 36%) respectively. See Appendix 4 for a map showing the boundaries of the Wirral GP Neighbourhood Localities.

Deprivation & Housing

Figure 9 shows EWMI by deprivation quintile (as defined by the Index of Multiple Deprivation (IMD) 2015) and shows a mixed picture regarding deprivation and Excess Winter Deaths in Wirral in 2017/18.

Figure 9: Excess Winter Mortality Index by IMD Quintile (2015), 2017/18



Source: Public Health Mortality Files, Wirral Council, 2018

The least deprived quintile had a higher EWMI than the most and second most deprived quintiles, but not the third deprived quintile (which had the highest index). This does, however, reflect the national finding that there is no clear-cut relationship between deprivation and excess winter deaths.

One explanation for this lack of a clear association with deprivation may be due to the greater energy efficiency of social housing and lower income families being more likely to live in social housing. Nonetheless, the Kings Fund (2014) suggested that investment in housing interventions could save the NHS money over a 10 year period (see figure 10).

The Wirral Stock Modelling Report produced by BRE (2018) stated that the average “Simple SAP” rating (a scale of 1-100 for energy efficiency, where 100 is the most energy efficient) for social housing was 64, whereas for privately owned properties it was 59 and for privately rented properties was 61.

Figure 10: Potential return on investment from housing interventions

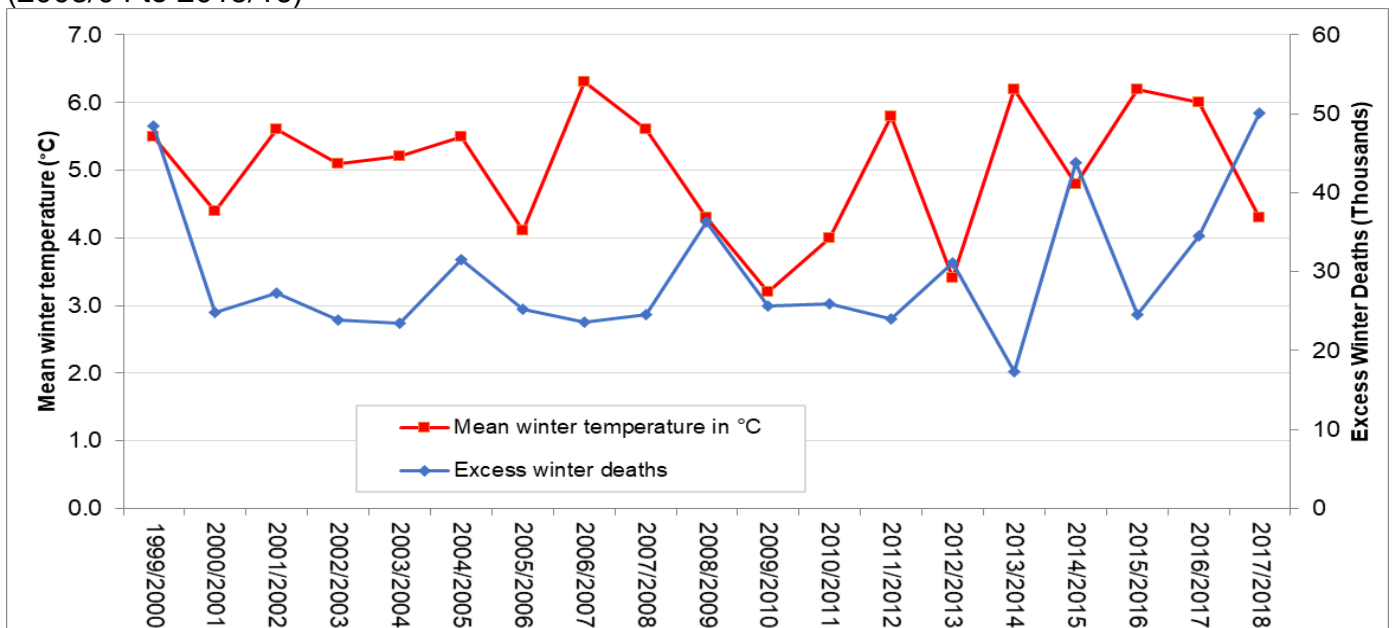


Source: Kings Fund (2014) Making the case for Public Health interventions, Sept 2014

ONS (2014) stated that a “greater proportion of homes in England now have measures to improve energy efficiency [...] compared with 2001” meaning homes are becoming more energy efficient; they are easier to heat and keep warm. Between 2008 and 2012, over 51,000 insulation improvements were made to existing homes in Wirral. In 2001, 86.7% of homes had central heating; by 2011 the rate had increased to 96.7% (Census data 2001 and 2011, ONS).

Winter Temperature

Figure 11: Excess Winter Deaths and Average Winter Temperature for England & Wales (2003/04 to 2015/16)



Source: ONS, 2018

Figure 11 (above) shows that there is little relationship between temperature and number of excess winter deaths in England & Wales. In fact, in some years, such as 2013/14, it could be said that a relationship appears observable; a higher average temperature and a low number of excess deaths.

However, this is not always the case, e.g. 2009/10 had an average temperature of only 3.2°C, yet experienced a level of excess winter deaths similar to those of milder winters. It is therefore apparent that whilst cold weather may be a factor, it is just one of a number of factors in excess winter deaths. Temperature alone, does not explain excess winter deaths (see appendix 3 for the 2017/18 monthly average temperatures for North West England & Wales).

Causes of Winter Deaths

The three major causes of death which contribute most to the burden of Excess Winter Deaths according to ONS are:

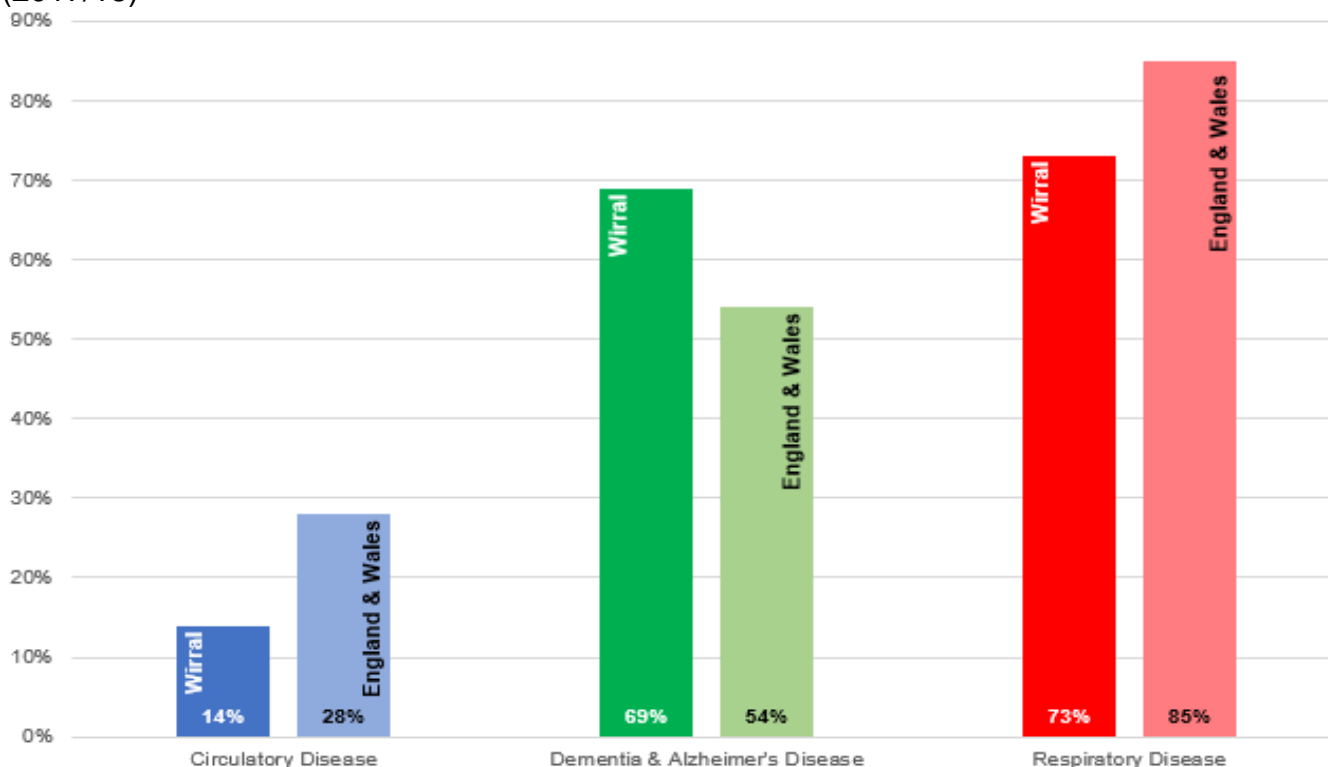
- Respiratory disease,
- Circulatory disease and
- Dementia and Alzheimer’s disease.

In England and Wales (ONS 2016), respiratory diseases caused the largest proportion of excess winter deaths in 2017/18, followed by Dementia and Alzheimer’s disease and then Circulatory Disease.

An Excess Winter Mortality Index (EWMI) of 85% for Respiratory disease in England and Wales means that there were 85% more deaths from this cause in the winter period, compared to the non-winter period.

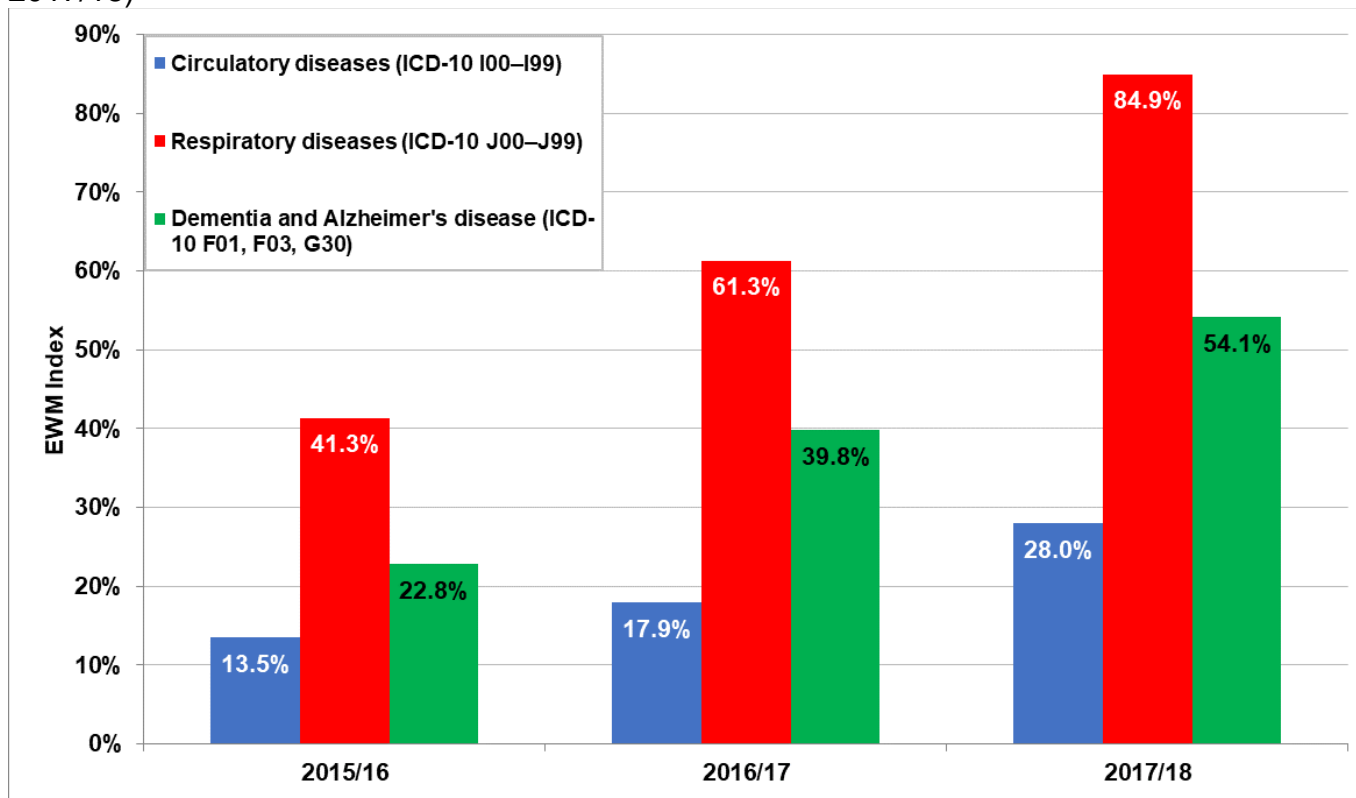
The picture was similar in Wirral, where Respiratory disease was the largest contributor to the EWMI, closely followed by Dementia and Alzheimer’s disease. The EWMI in Wirral for Dementia and Alzheimer’s disease was 69% in 2017/18 in Wirral, compared to 54% in England and Wales. Reasons for this are unclear but may be due to the added vulnerability of people with Dementia and Alzheimer’s (See Figure 12).

Figure 12: Excess Winter Mortality Index by three major causes of death: Respiratory disease, Circulatory disease and Dementia and Alzheimer’s disease, Wirral and England & Wales (2017/18)



Source: Public Health Mortality Files, Wirral Council, 2018 & ONS, 2018

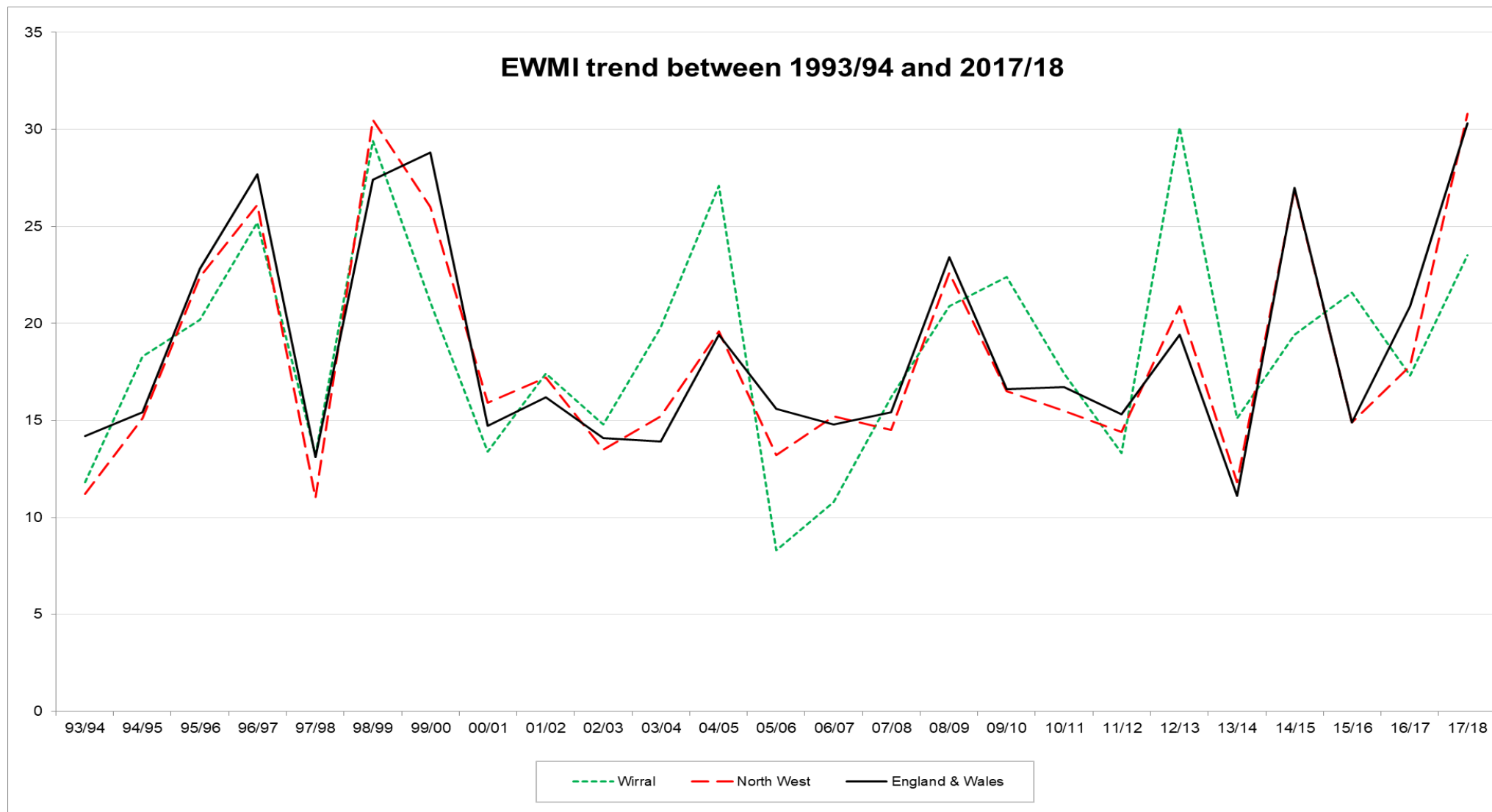
Figure 13: Trend in EWMI in England & Wales, by three major causes of death (2015/16 to 2017/18)

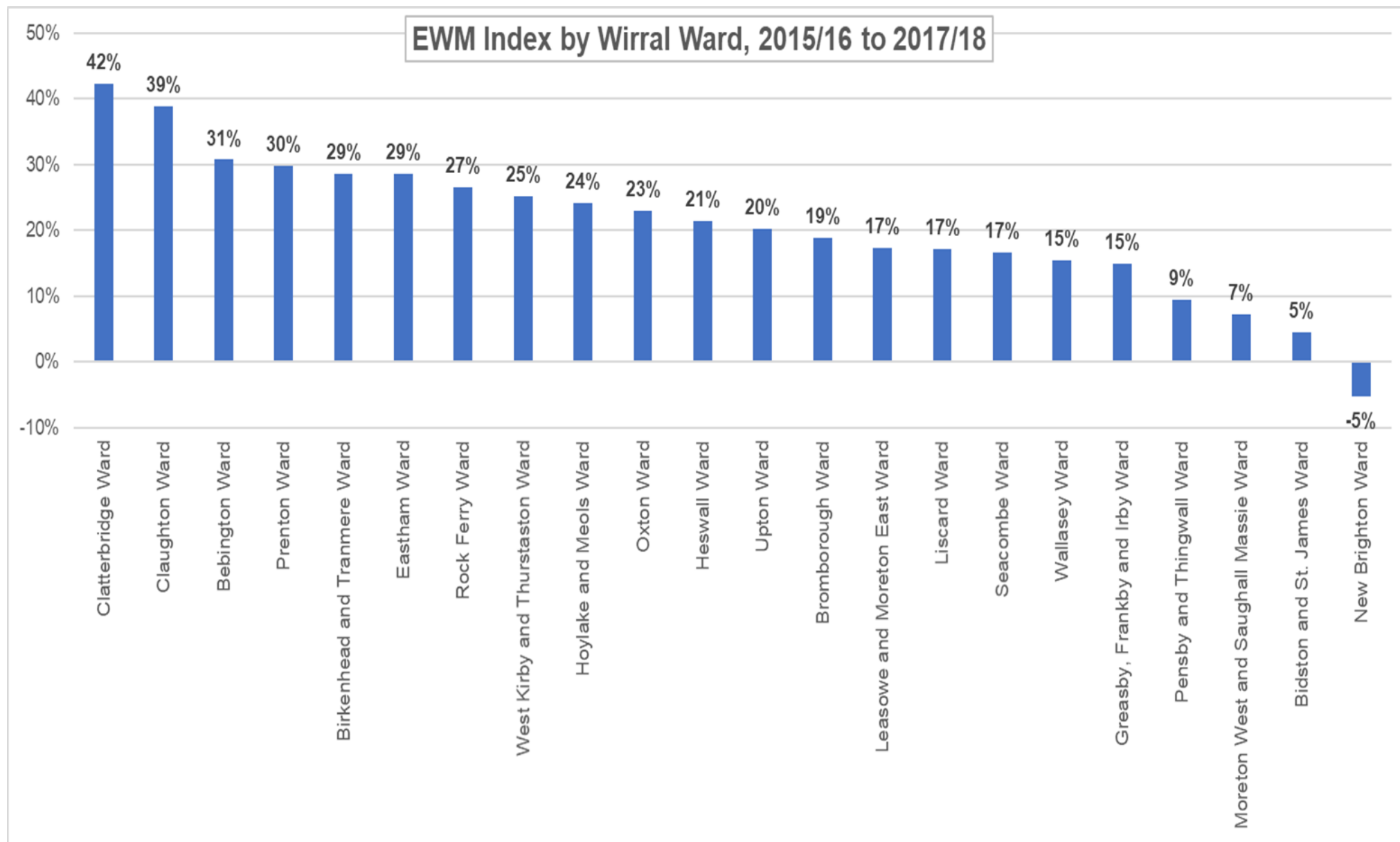


Source: [ONS](#), 2016

The last 3 years' worth of data for England & Wales (Figure 13) shows that while the EWMI has steadily increased for each of the 3 conditions during the period shown, the pattern has remained broadly similar, with respiratory disease showing the highest EWMI in every time period.

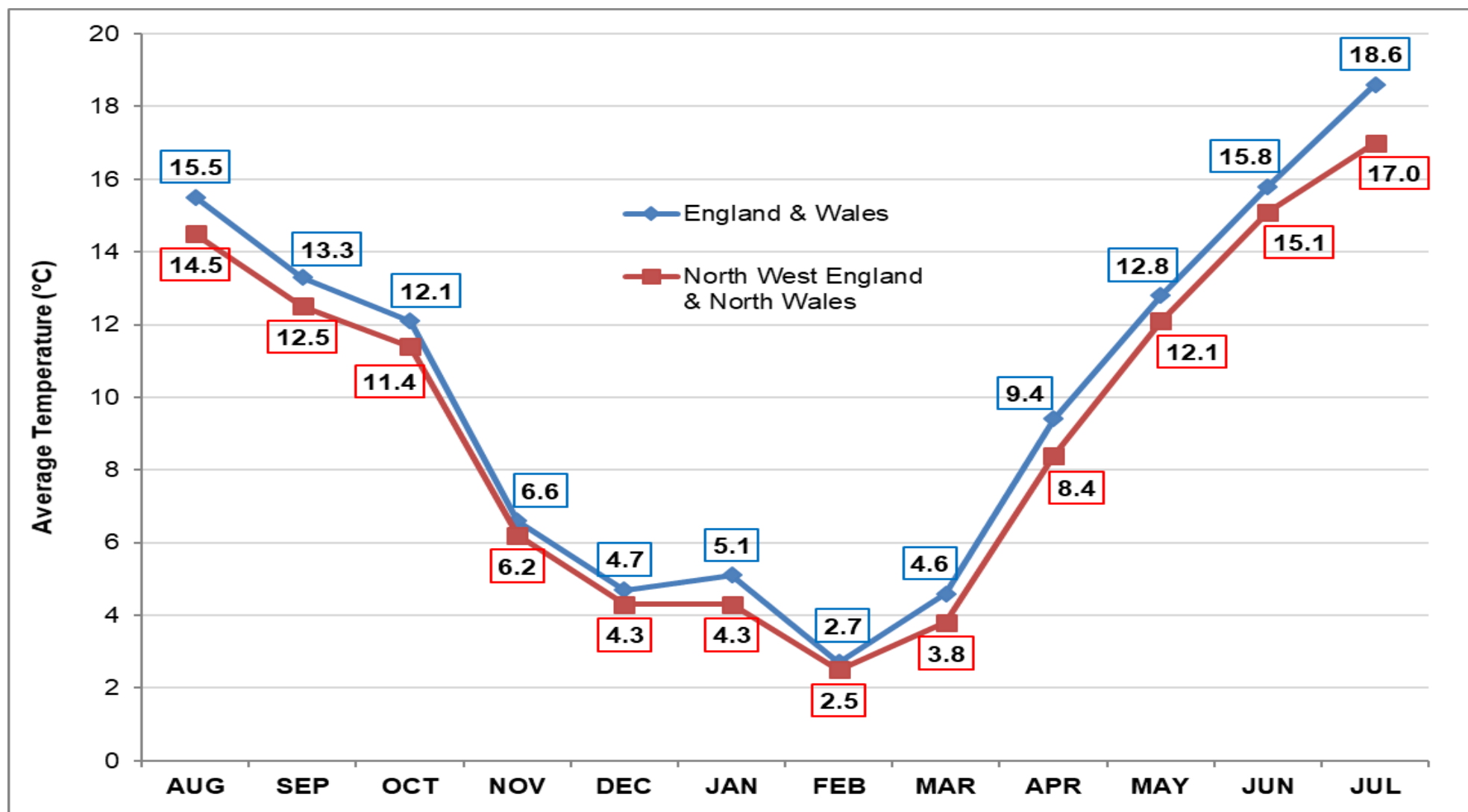
Dementia and Alzheimer's was the second largest cause, followed by Circulatory diseases for all three time periods.



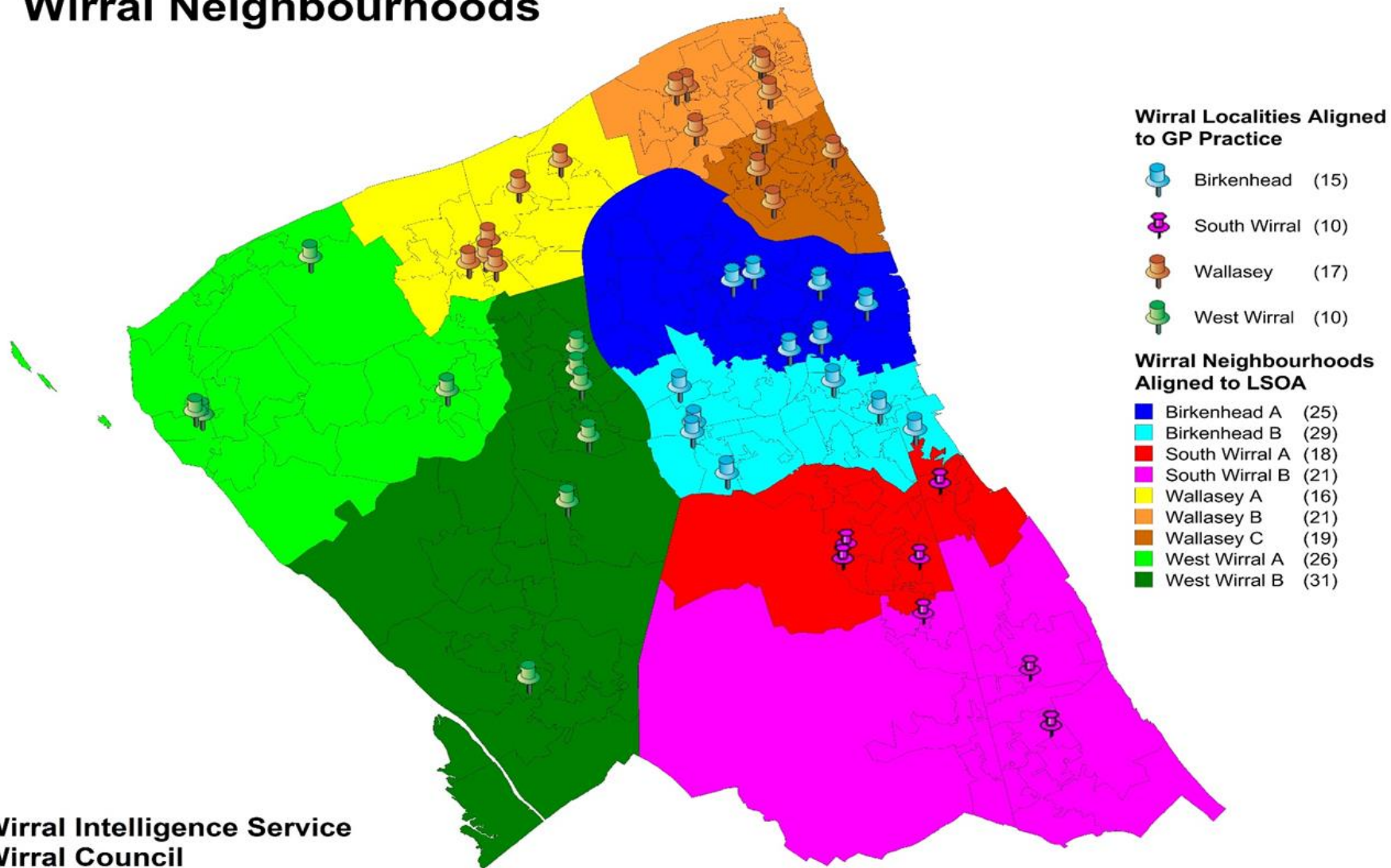


Appendix 3

Appendix 3 shows that during 2017/18, average monthly minimum temperatures were very similar between the North West & North Wales when compared to England & Wales.



Wirral Neighbourhoods



Wirral Intelligence Service
Wirral Council

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- Met Office Weather statistics <http://www.metoffice.gov.uk/climate/uk/summaries/datasets> Accessed on 04/09/17

Further Reading / Links

- [NICE Guidance \(NG6\) Excess winter deaths and illness and the health risks associated with cold homes](#)
- [Quantification of the impact of indoor dampness and mould on asthma onset in children and hospital spells due to respiratory problems in children and adults in Wirral PCT](#)
- [Excess winter deaths in Europe: a multi-country descriptive analysis \(2014\)](#)
- [EuroMOMO \(European monitoring of excess mortality for Public Health action\)](#)
- [Home Energy Conservation Act 1995 – Biennial Progress Report \(Wirral, 2019\)](#)
- [Cold Weather Plan, Wirral Community Trust, 2013/14](#)
- [Cold Weather Plan \(CWP\) for England, PHE](#)

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