



**WIRRAL
INTELLIGENCE
SERVICE**

Excess Winter Deaths in Wirral: 2018/19 update

Wirral Intelligence Service

April 2020

Excess Winter Deaths in Wirral: 2018/19 update

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Version History	Date	Author	Reviewer	Actions
V1-2	April 2020	Matthew Ray	Sarah Kinsella John Highton	Various tables and charts updated and amended.

Report Overview

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

Key Findings

- Published data for 2018/19 showed a decrease in Excess Winter Deaths both nationally, regionally and locally compared to 2017/18.
- Wirral (17.1%) had a higher Excess Winter Mortality Rate (EWMI) than the North West (13.2%) and England (14.2%) in 2018/19. This was a decrease compared to 2017/18 however, when the Wirral EWMI was 23.5%
- In Wirral, males (15.4%) had a lower EWMI than females (18.5%). This replicated the trend in England, where males also had a lower EWMI (13.2%) than females (15.3%) in 2018/19
- When split by age and gender, females aged 90+ (41%) had the highest EWMI in Wirral. The second highest EWMI was in males aged 84-89, followed by males aged 90+ (37% and 22% respectively)
- Overall, Wirral's Females were 17% higher than the England's Female EWMI
- In England, 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. In 2018/19 however, all three diseases decreased in both England and for Wirral.
- South Wirral Locality (32.5%) had the highest EWMI of the four Wirral Localities, followed by West Wirral (18.8%)
- Of the main causes of death groupings, respiratory disease had the highest EWMI for both Wirral (45.7%) and England (48.2%)
- 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 of this report. Ward level data should be used with caution, as small numbers can lead to significant fluctuations for single year data.

Euro MOMO (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:

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

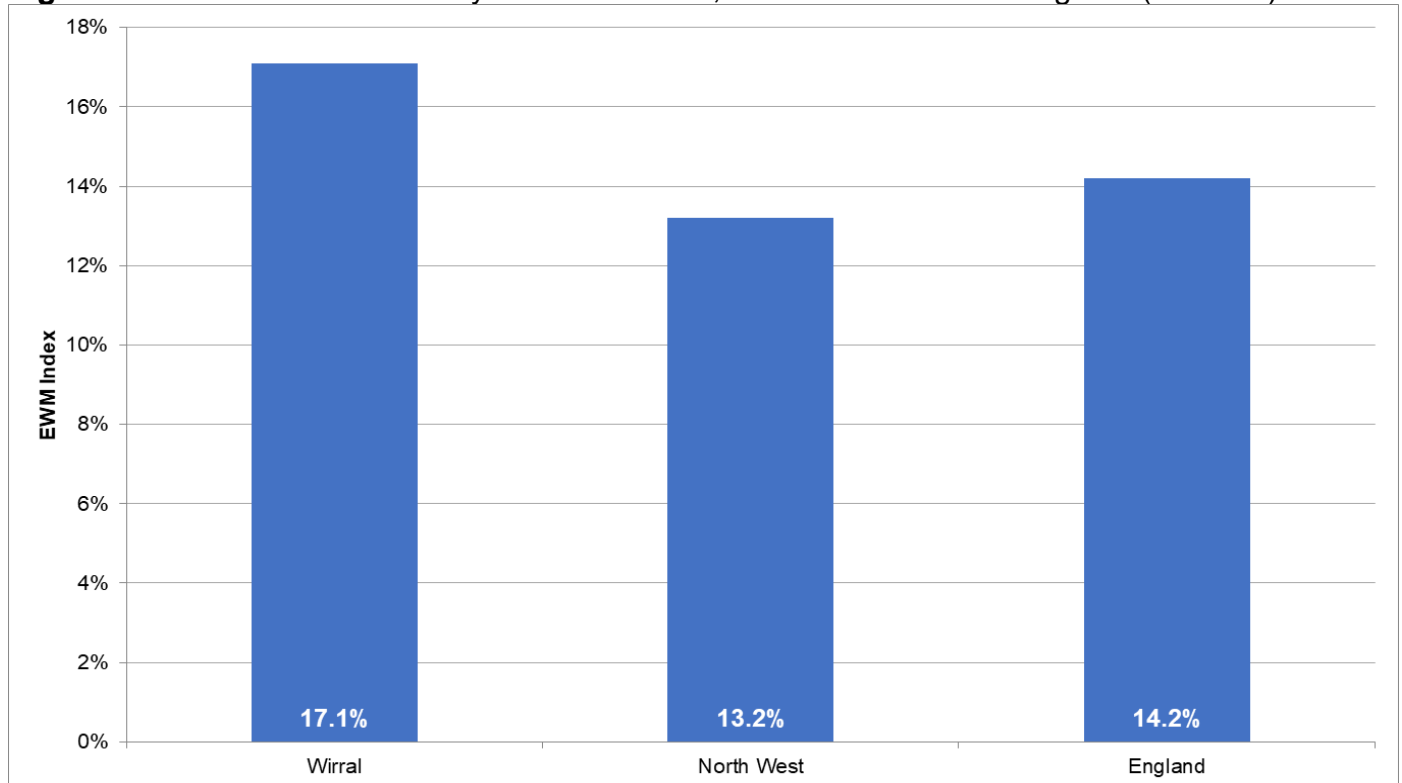
ONS focuses its EWMI report on the following areas:

- 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 (2018/19)



Source: [ONS](#), 2019

Figure 1 shows that Wirral had a higher EWMI than both the North West and England in 2018/19

The Excess Winter Mortality Index (EWMI) for all areas decreased significantly from 2017/18 to 2018/19. England EWMI decreased by 52.0% (29.6% to 14.2%), the North West decreased by 56.0% (30.0% to 13.2%) and Wirral's decreased by 27.2% (23.5% to 17.1%) for the same time period, although that did follow an increase in Wirral in 2017/18 as well as national and regional figures.

Trend in Excess Winter Mortality Index

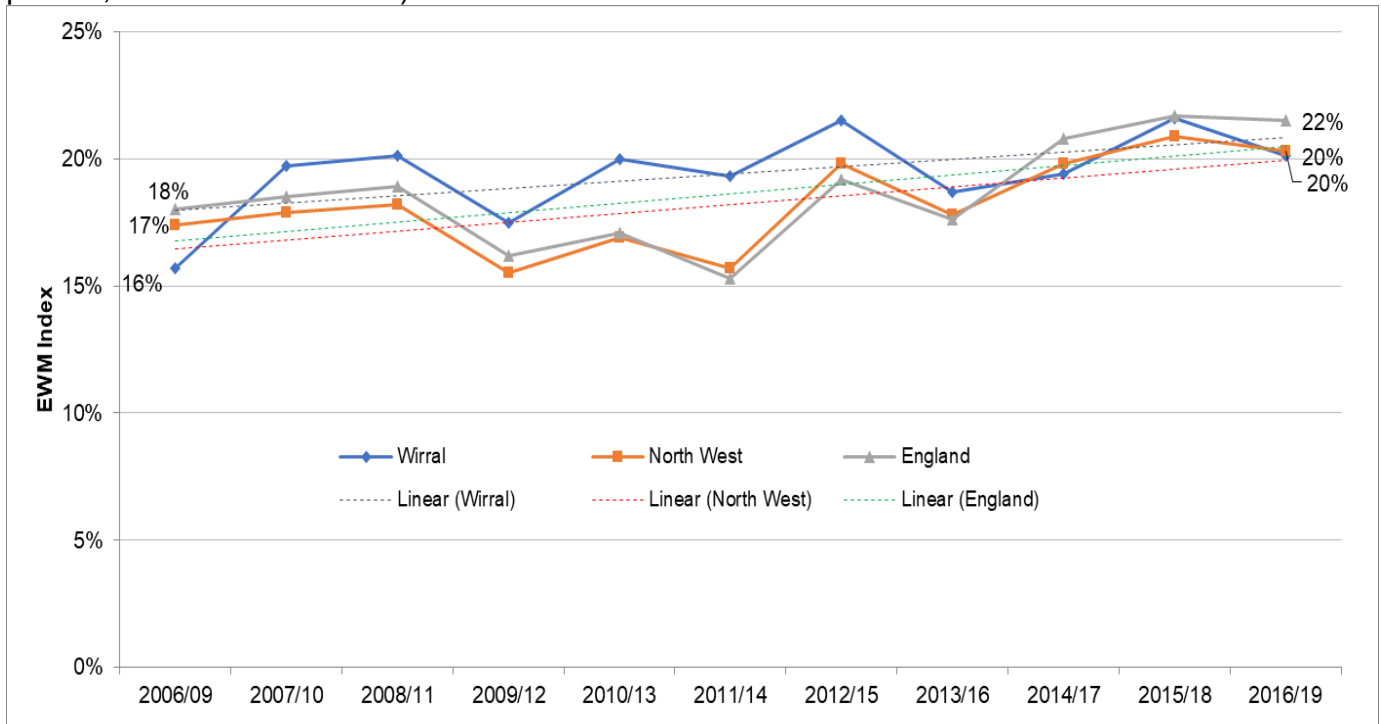
EWMI can fluctuate dramatically between years ([see Appendix 1](#)), so to smooth out the yearly variations, 3-year averages have been calculated for EWMI in Wirral, North West and England (**Figure 2 below**).

Between 2006-09 and 2016-19, the excess winter mortality 3-year pooled average has fluctuated between 16% (the lowest for Wirral in 2006/09) 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 but consistently had a higher average than both the North West and England and Wales between 2006-09 and 2014-17. From 2014-17 onwards, this was not the case and Wirral has been below England's 3 year average (and fluctuated above and below the North West average – currently below the North West average).

Figure 2: Trend in Excess Winter Mortality Index in Wirral, North West and England (3 years pooled, 2006-09 to 2016-19)

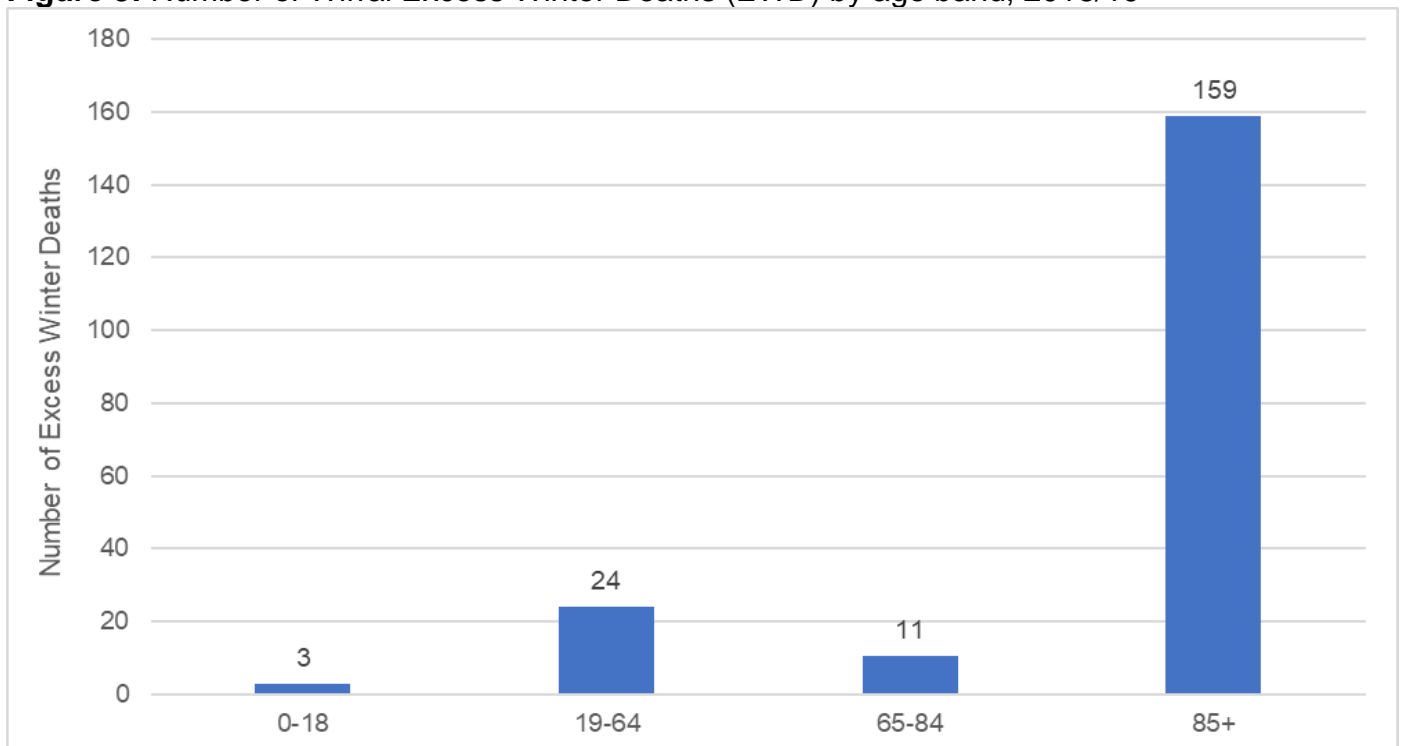


Source: [ONS](#), 2019

Age

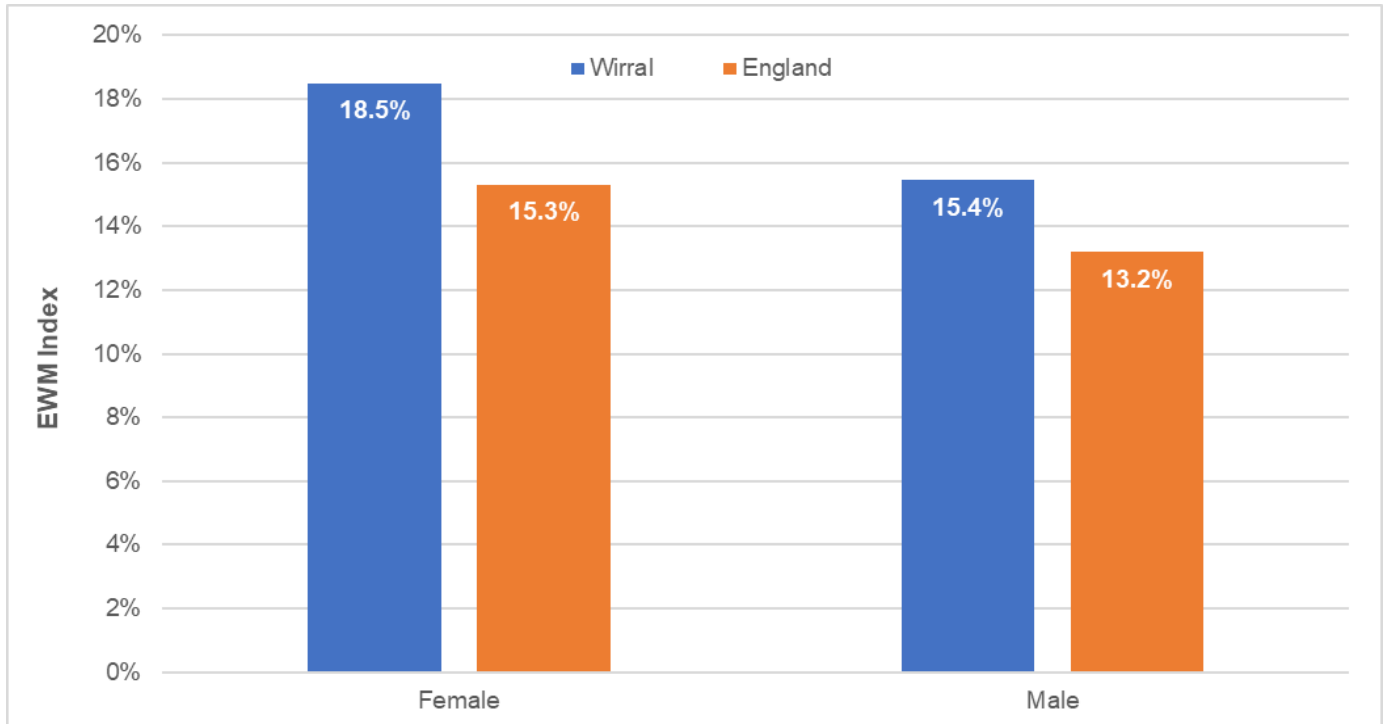
Wirral has an ageing population and **figure 3** highlights that early winter deaths increase with age; those aged 85+ are the most vulnerable age group during winter months. The total number of excess winter deaths was 159 for this age group in 2018/19.

Figure 3: Number of Wirral Excess Winter Deaths (EWD) by age band, 2018/19



Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

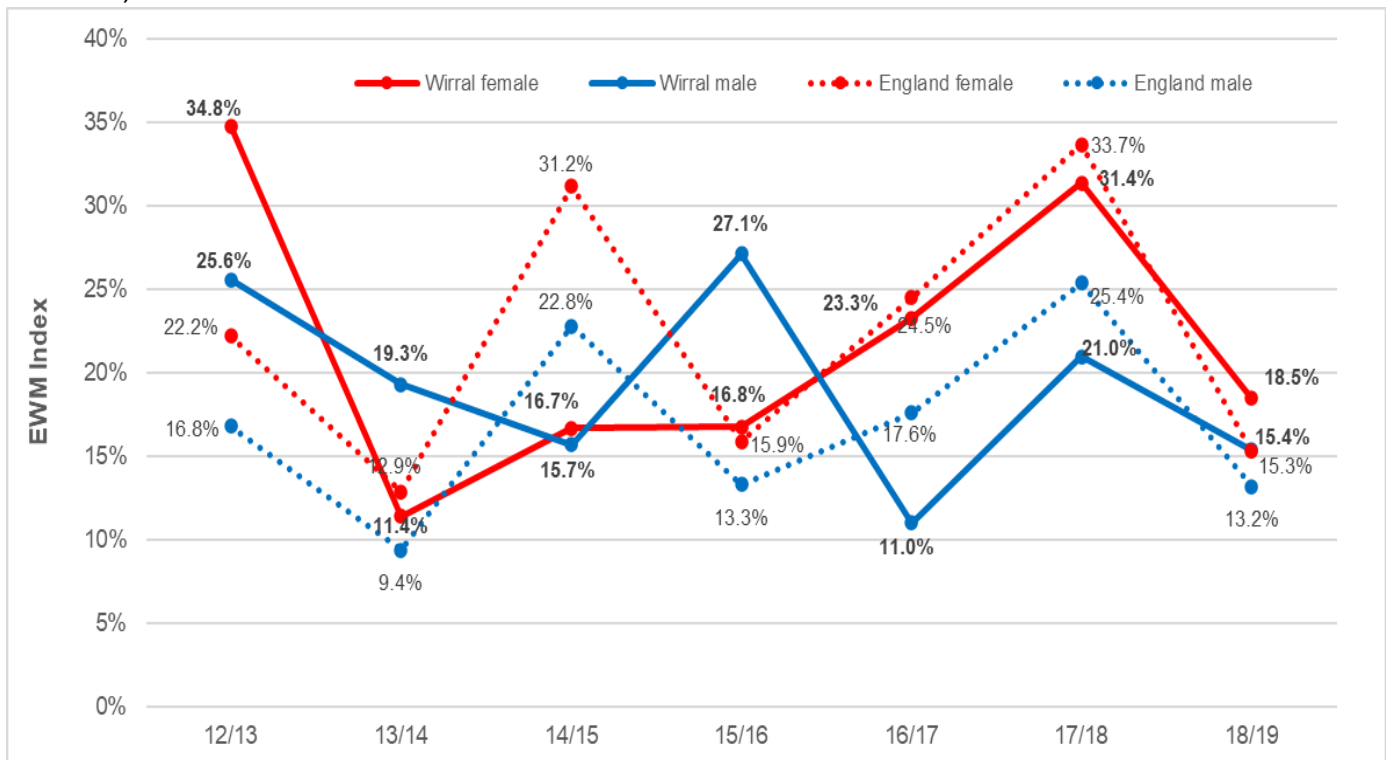
Figure 4: Excess Winter Mortality Index by gender for Wirral and England (2018/19)



Source: Public Health Mortality Files, Wirral Council, 2019 (not published) and [ONS](#), 2019

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

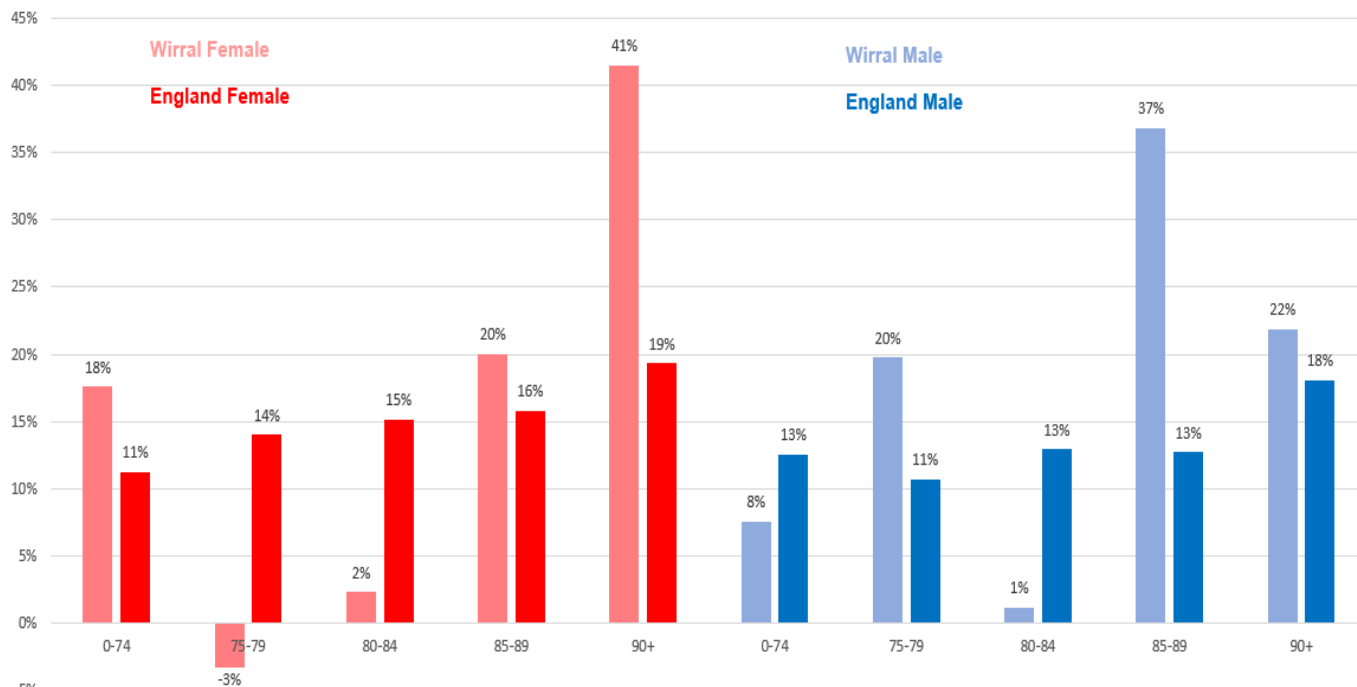
Figure 5: Trend in Excess Winter Mortality Index by gender in Wirral and England (2012/13 to 2018/19)



Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

Figure 5 shows that there has been some fluctuation in the EWMI in both males and females over the past 7 years in Wirral. At the start of the period, females had a much higher EWM Index than men (2012/13). The next 2 out of 3 years males (2013/14 and 2015/16) had higher rates than females until 2016/17 where females EWMI has surpassed the males for the last three reported years showing a sustained trend although the EWMI has decreased in 2018/19 for both males and females from 2017/18.

Figure 6: Excess Winter Mortality Index by gender and age band, 2018/19



Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

Figure 6 splits the EWMI by age bands and gender. As the chart shows, female EWMI in Wirral was higher in the 0-74, 85-89 and 90+ age bands and lower in the two age bands in the middle of the spectrum (75-79 and 80-84) compared to England. Overall, Wirral was 17% higher than the England's EWMI.

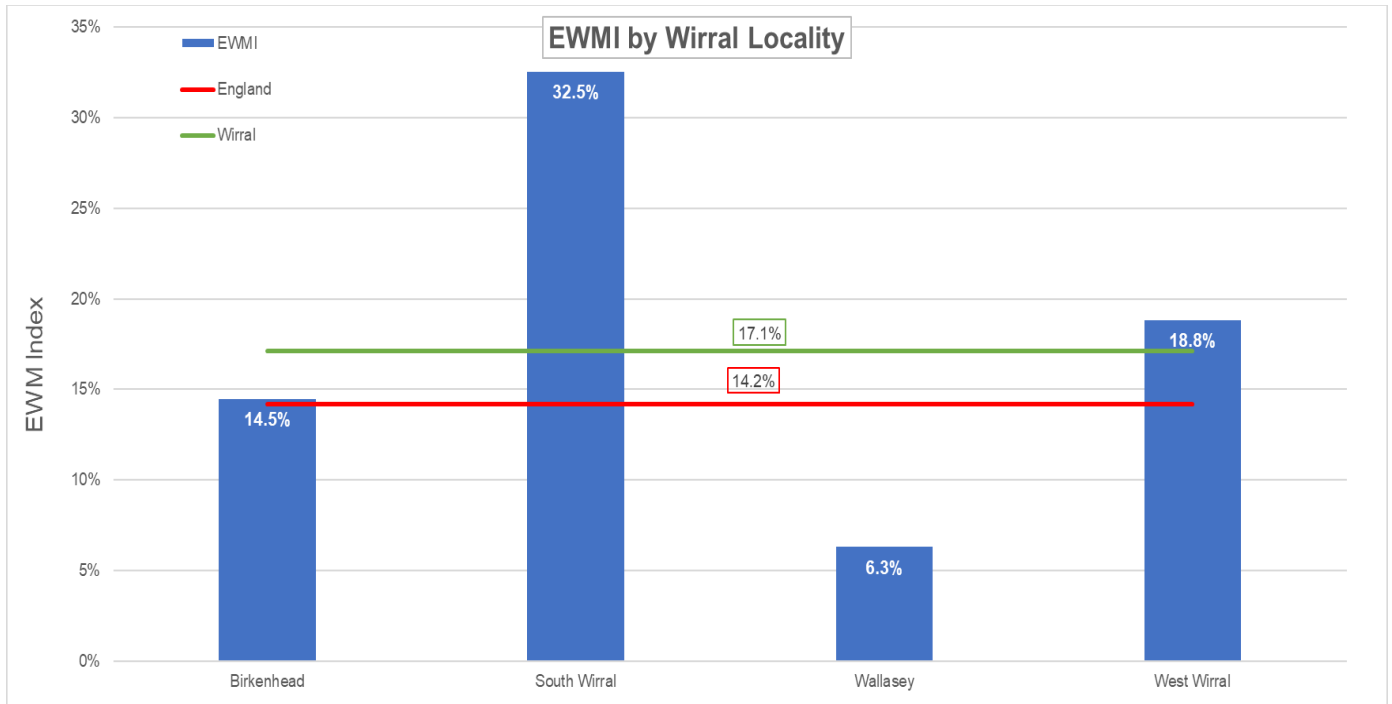
It was a slightly different picture for men. Wirral males had lower EWMI than England & Wales only 1 of the 5 age bands (80-84). All other age bands males in Wirral had a higher EWMI than England with the greatest difference between the Wirral and England EWMI was in males aged 85-89 (37% vs 13% or a 24% 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 but this latest year shows the gap has closed between the sexes.

Geography

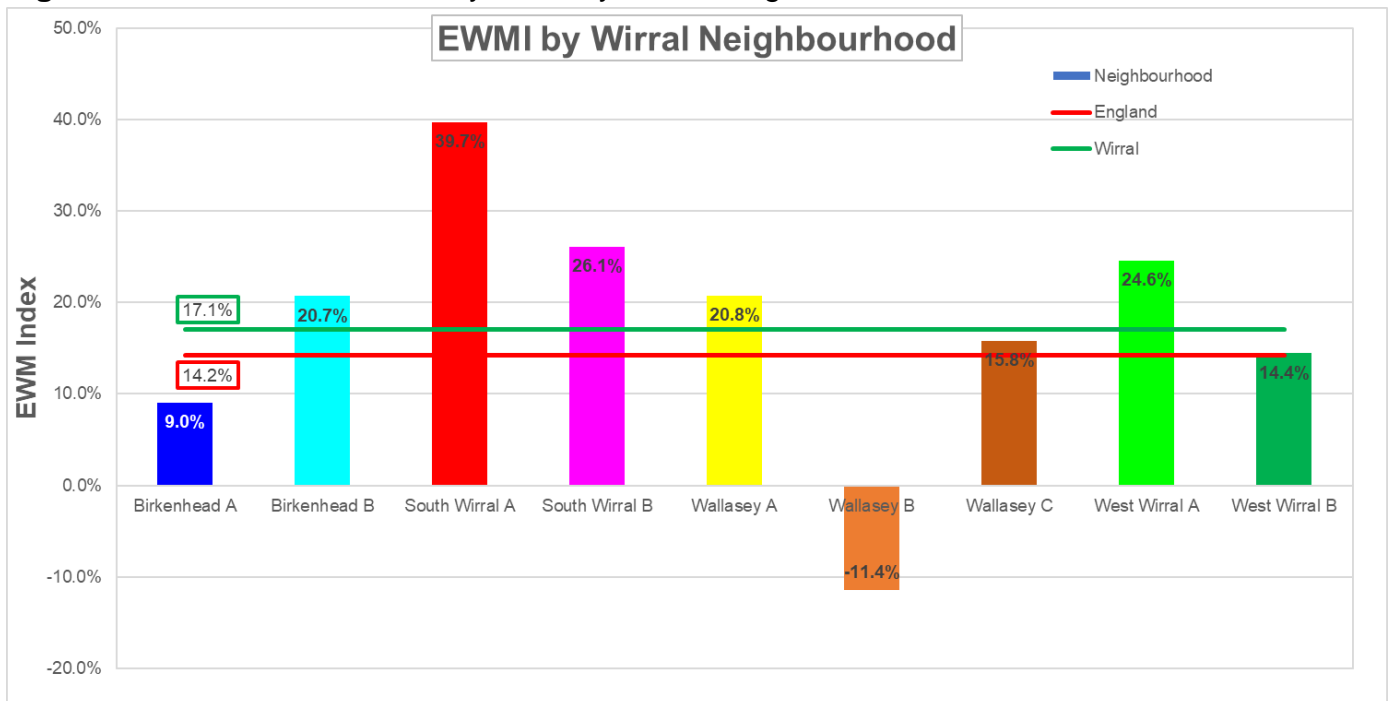
Figure 7 (below) shows that 3 constituencies in Wirral had a higher Excess Winter Mortality Index (EWMI) than the national figure in 2018/19. South Wirral, West Wirral and Birkenhead localities had the highest EWMI rates (32.5%, 18.8% and 14.5%), in Wirral. Wallasey had lower EWMI rates (6.3%) and was 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, 2018/19



Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

Figure 8: Excess Winter Mortality Index by Wirral Neighbourhood, 2018/19



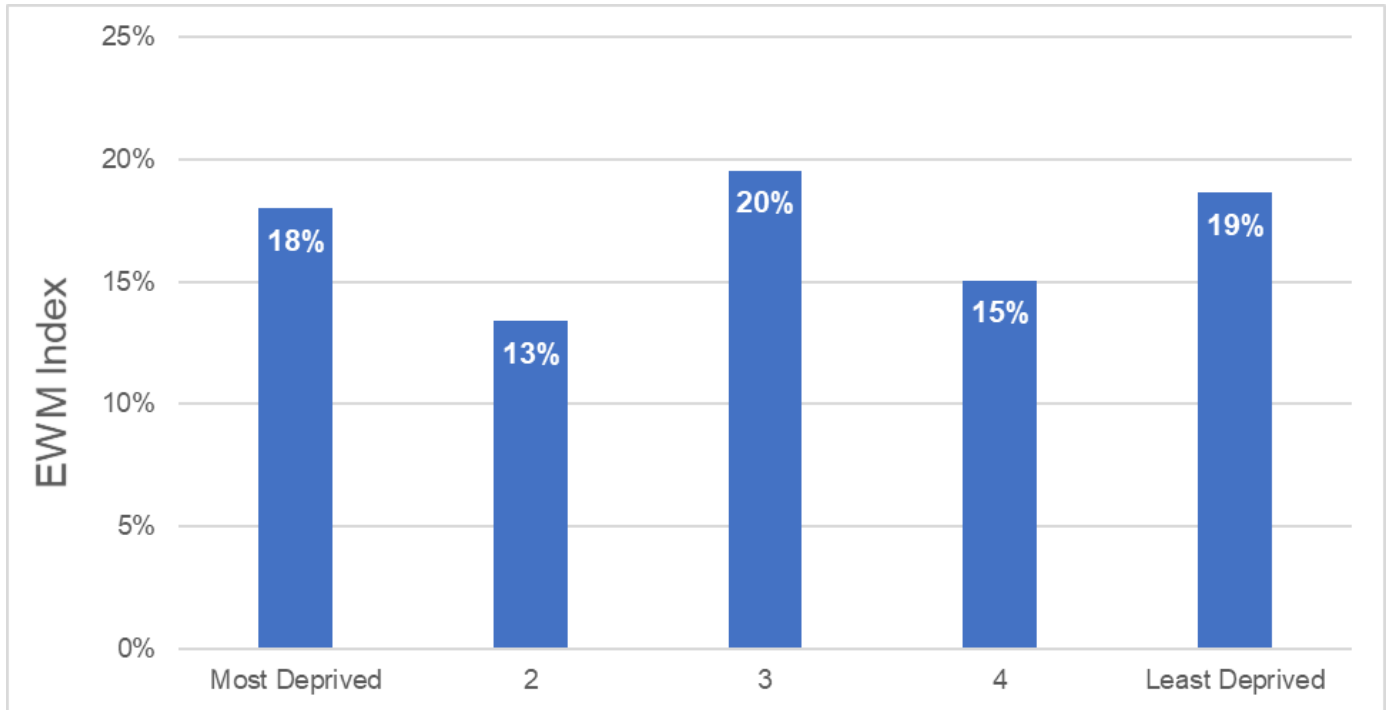
Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

Figure 8 (above) shows that 7 of the 9 Neighbourhoods in Wirral had a higher EWMI than the national figure of 14.2% in 2018/19. South Wirral A, South Wirral B and West Wirral A neighbourhood areas had the highest EWMI rates (39.7%, 26.1% and 24.6%) in Wirral.

Birkenhead A and, Wallasey B Neighbourhoods had the lowest Excess Winter Mortality Index (EWMI) rates (9.0% and -11.4% - a minus figure indicates the area had a lower number of deaths in this period than would be expected). 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 (14.4% and 9.0%) respectively. See [Appendix 3](#) for a map showing the boundaries of the Wirral GP Neighbourhood Localities.

Figure 9 shows Excess Winter Mortality Index (EWMI) by deprivation quintile (as defined by the Index of Multiple Deprivation (IMD) 2019) and shows a mixed picture regarding deprivation and Excess Winter Deaths in Wirral in 2018/19.

Figure 9: Excess Winter Mortality Index by IMD Quintile (2019), 2018/19



Source: Public Health Mortality Files, Wirral Council, 2019 (not published)

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 below**).

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



Return on Investment

Housing interventions to keep people warm, safe and free from cold and damp are an efficient use of resources. Every £1 spent on improving homes saves the NHS £70 over 10 years.

TheKingsFund

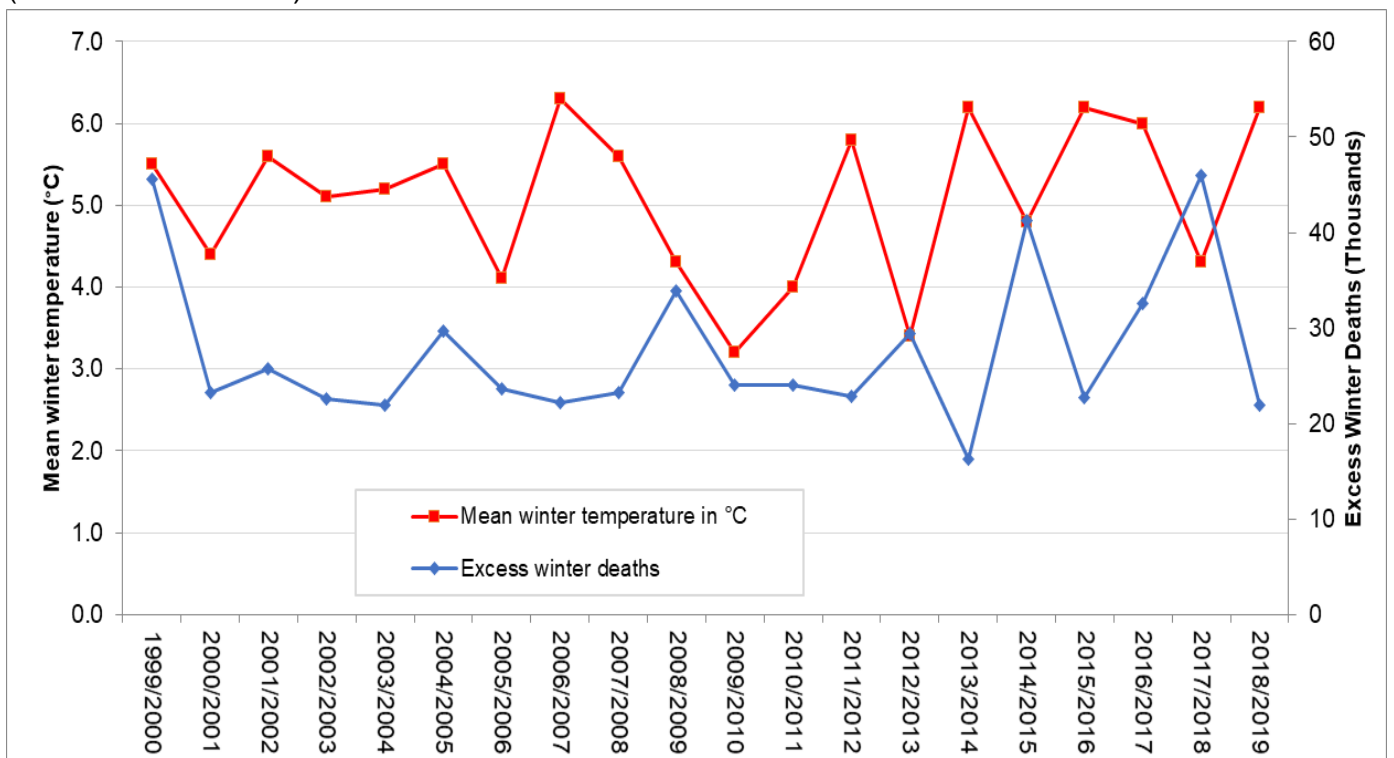


Source: Kings Fund (2014) Making the case for Public Health interventions, September 2014

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).

Temperature & Weather

Figure 11: Excess Winter Deaths and Average Winter Temperature for England & Wales (1999/00 to 2018/19)



Source: ONS, 2019

Figure 11 (above) shows that there is little relationship between temperature and number of excess winter deaths in England. In some years, such as 2013/14 and 2018/19, 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 4](#) for 2018/19 Wirral and other area comparative temperatures).

Causes of Winter Deaths

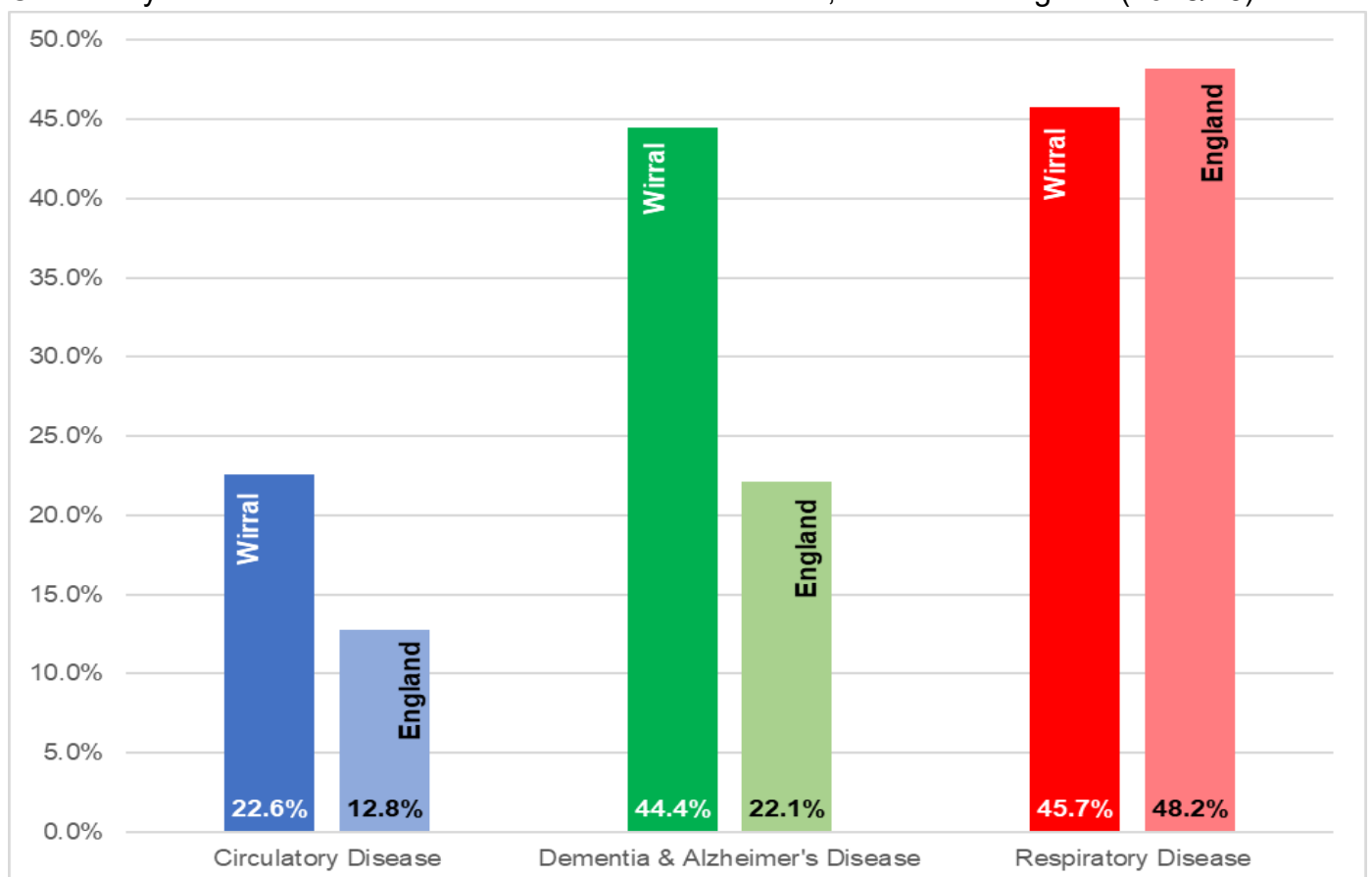
The three major causes of death which contribute most to the burden of Excess Winter Deaths according to ONS are Respiratory disease, Circulatory disease and Dementia and Alzheimer’s disease.

In England (ONS 2016), respiratory diseases caused the largest proportion of excess winter deaths in 2018/19, followed by Dementia and Alzheimer’s disease and then Circulatory Disease.

An EWMI of 48.2% for Respiratory disease in England means that there were 48.2% more deaths from this cause in the winter period, compared to the non-winter period.

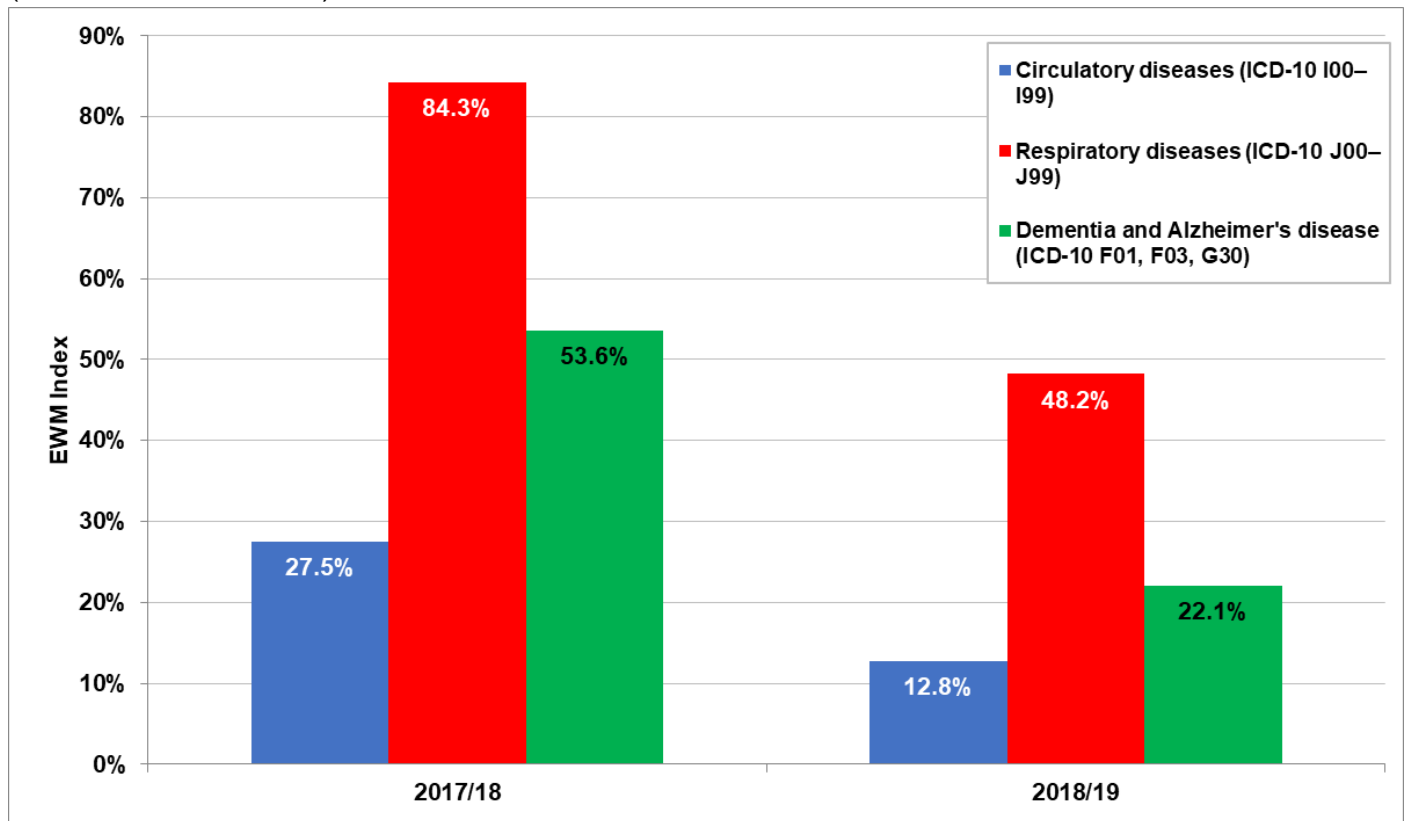
The picture was similar in Wirral, where Respiratory disease was the largest contributor to the EWMI, closely followed by Dementia and Alzheimer’s disease. The EWMI in Wirral for Dementia and Alzheimer’s disease was 44.4% in 2018/19 in Wirral, compared to 22.1% in England. Reasons for this are unclear 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 (2018/19)



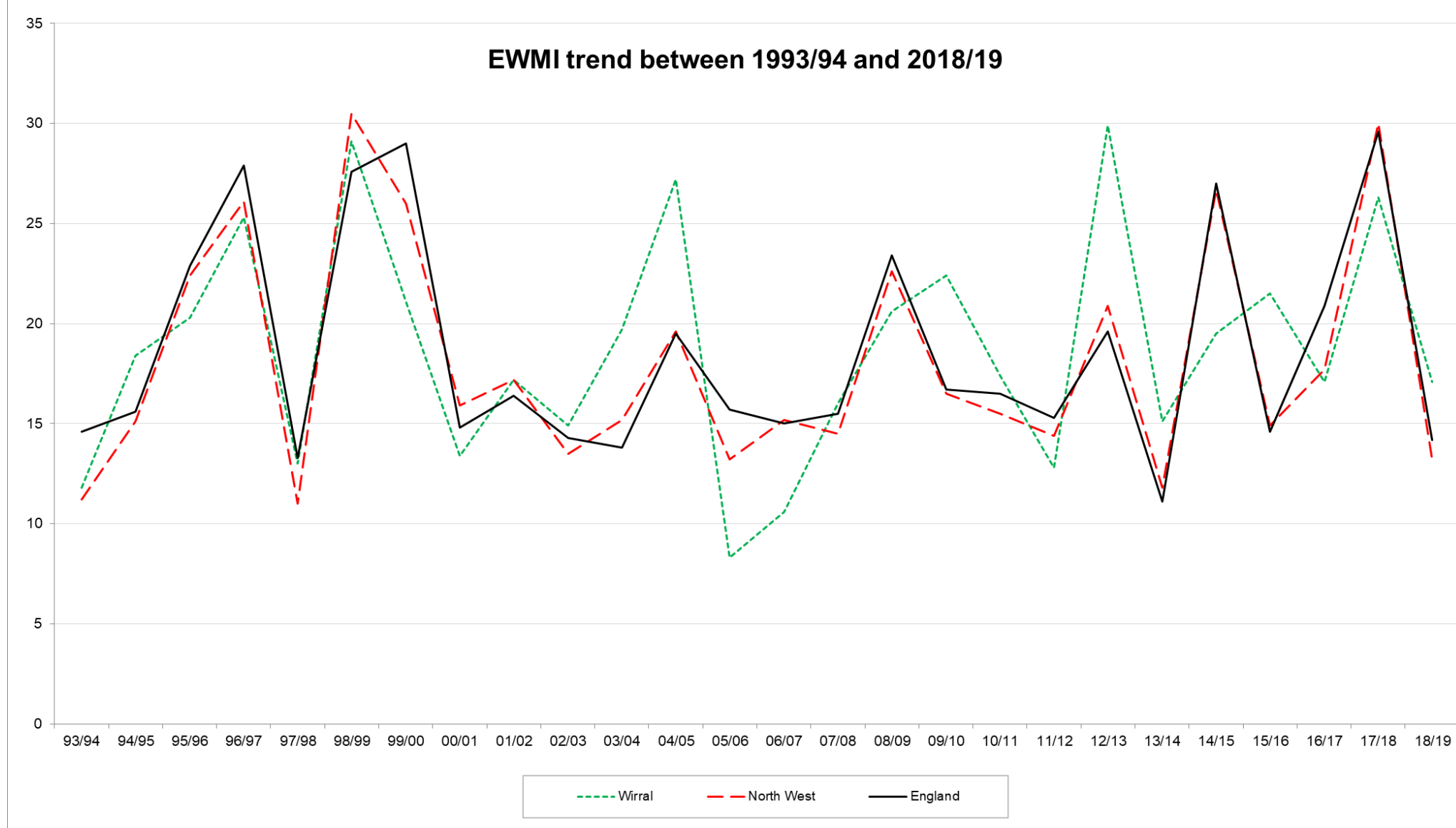
Source: Public Health Mortality Files, Wirral Council, 2019 (not published) and [ONS](#), 2019

Figure 13: Trend in Excess Winter Mortality Index in England, by three major causes of death (2017/18 and 2018/19)

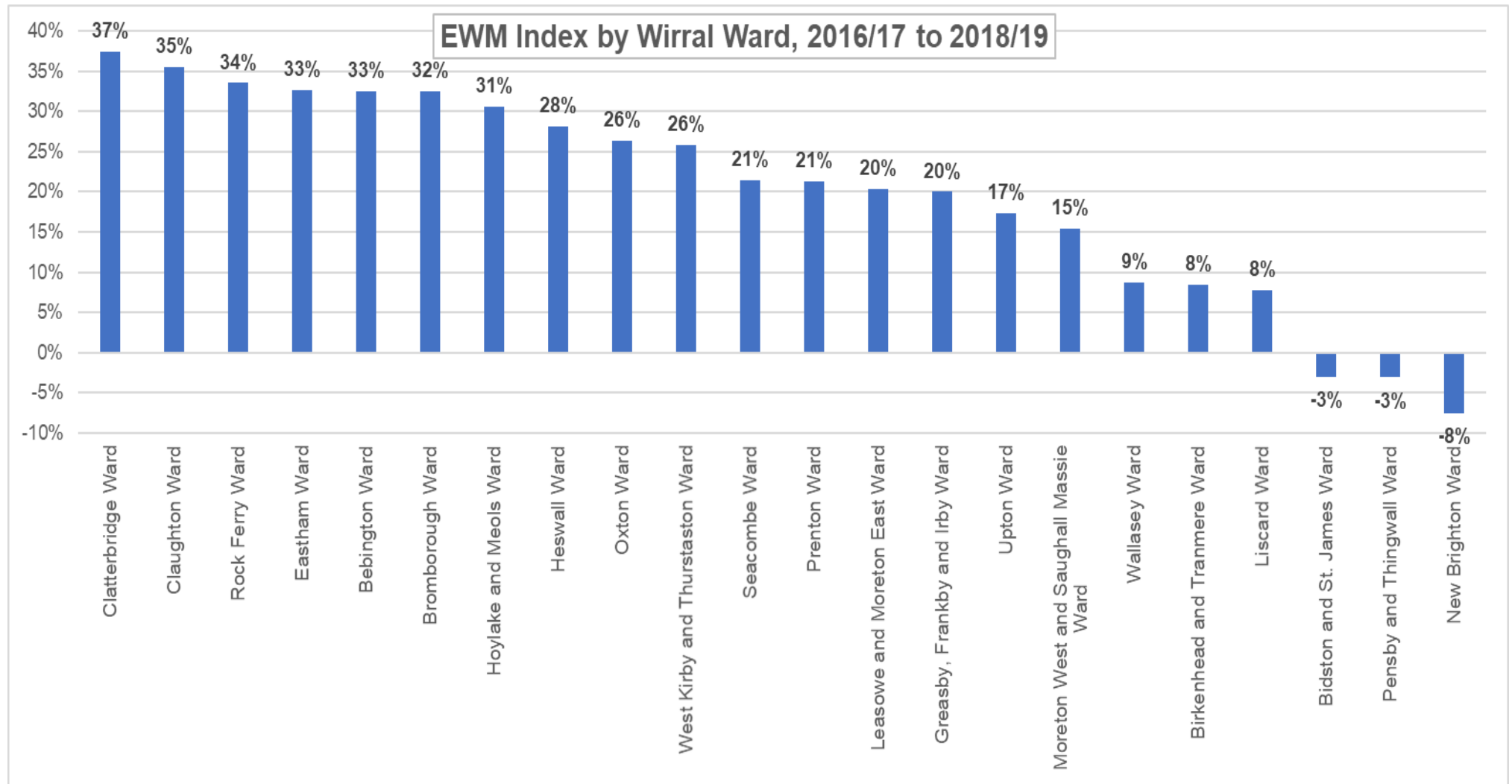


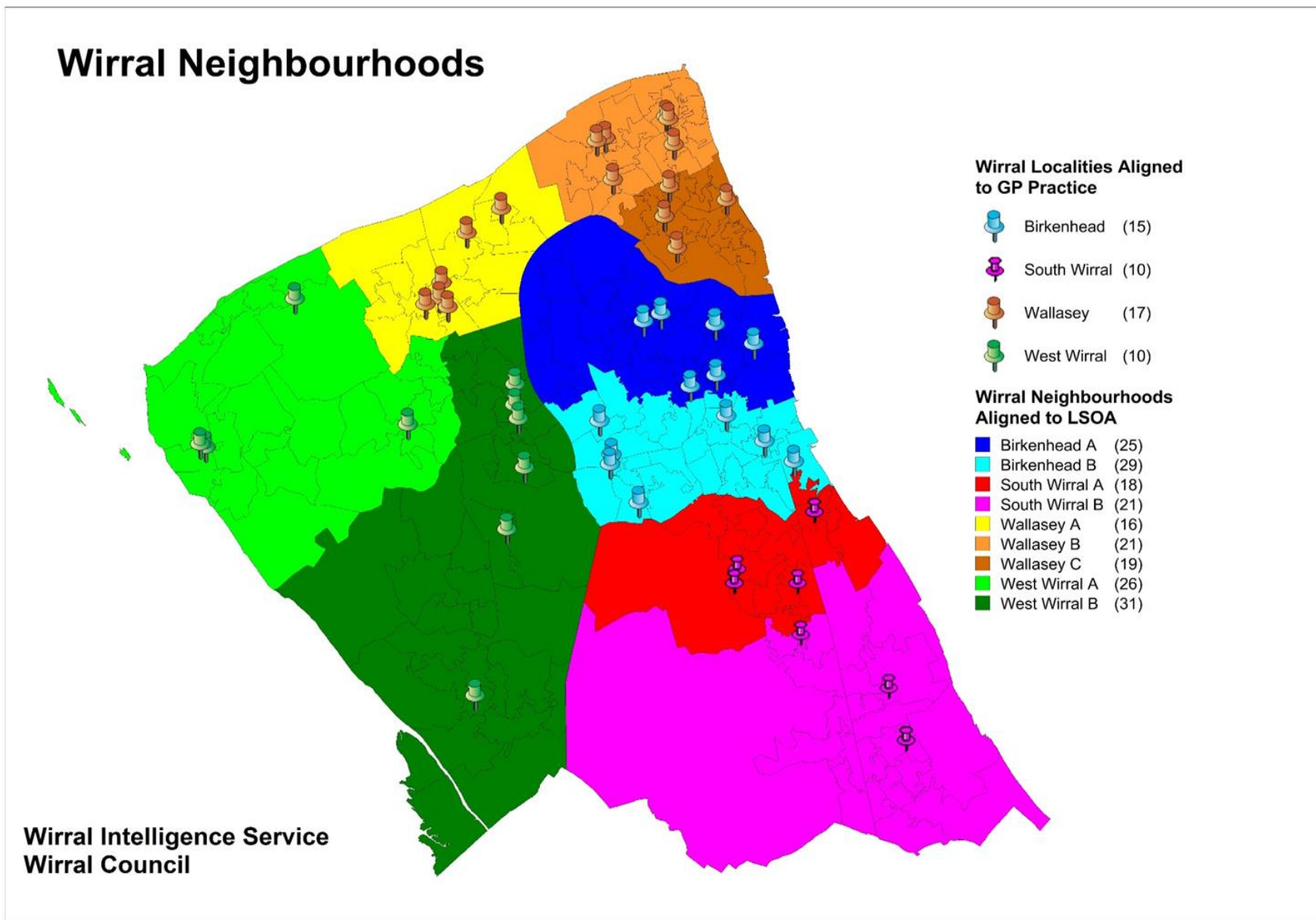
Source: [ONS](#), 2019

Figure 13 above shows the last 2 years' data for England shows that while the Excess Winter Mortality Index (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.



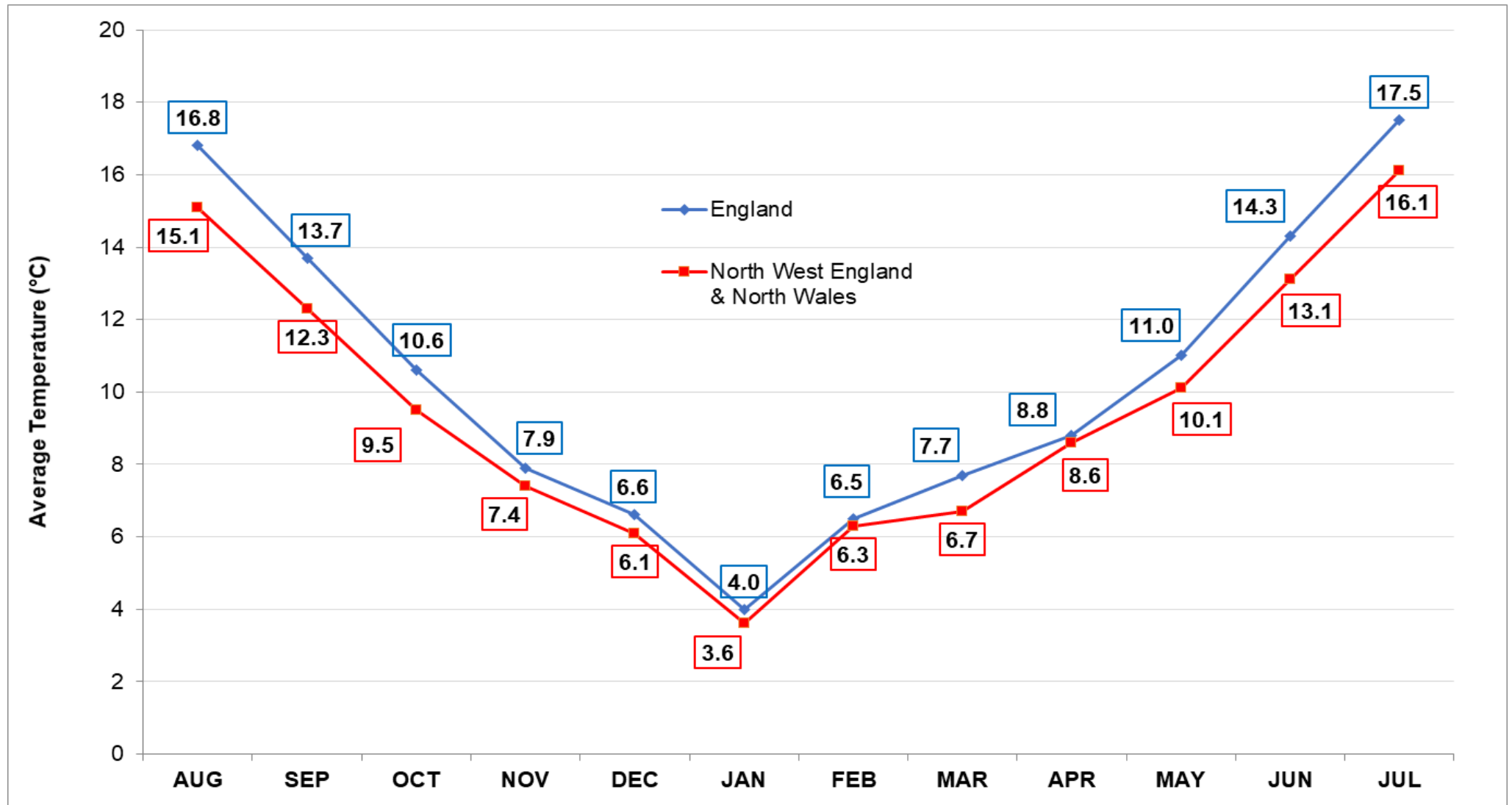
Appendix 2





Appendix 4

This chart shows that during 2018/19, average monthly minimum temperatures were very similar between North West England and North Wales when compared to England.



References

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- The King's Fund (2014) *Making the case for public health interventions*, Local Government Association [online] Available at: <http://www.kingsfund.org.uk> Accessed on 08/01/2016
- Met Office Weather statistics <http://www.metoffice.gov.uk/climate/uk/summaries/datasets> Accessed on 04/03/20

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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