
Winter Mortality in Scotland 2016/17

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Main points

The main points in this report are:

- There were 20,930 deaths registered in Scotland in the four months of winter 2016/17 (December to March), compared with 20,509 in winter 2015/16.
- Comparing the number of deaths in the four winter months with the average for the two adjacent four-month periods, the seasonal increase in mortality in winter 2016/17 was 2,720. This was 130 fewer than the corresponding value of 2,850 for the previous winter.
- The seasonal increase in mortality has been calculated for every winter from 1951/52. The seasonal increase of 2,720 in winter 2016/17 was smaller than in most of the previous 65 winters, but exceeded the level seen in 10 of the previous 20 winters, and in 5 of the previous 10 winters.
- The long-term trend in the seasonal increase in mortality in the winter has clearly been downward: although there have been unusually large figures in some years (including 4,060 in winter 2014/15, which had the largest value since winter 1999/2000), the height of the peaks has generally been falling.
- The 5-year moving average, which smoothes out much of the year to year fluctuation, had tended to decline, but has risen recently (due to for example winter 2014/15 entering the calculation). While the latest value (2,646) is the thirteenth lowest ever, it is greater than 11 of the previous 12 values – but, in several cases, the difference is at most a couple of hundred. Overall, and broadly speaking, the 5-year moving average has not changed much since the early 2000s.
- The latest 17 winters have had 7 out of the 10 lowest seasonal increases in mortality ever recorded. Over the 66 years covered by these statistics, the lowest seasonal increase in mortality was for winter 2011/12 (1,420), the second lowest was for winter 2013/14 (1,600), the third lowest was for winter 2005/06 (1,780), the fourth lowest was for winter 2001/02 (1,840), and the fifth lowest was for winter 2012/13 (2,000). The eighth and ninth lowest seasonal increases in mortality were for winter 2007/08 (2,180) and winter 2000/01 (2,220).

1. Introduction

- 1.1 This release presents provisional data for the seasonal increase in mortality in Scotland in winter 2016/17. The Tables and Figures provide overall data for Scotland for 66 years, breakdowns by age-group for Scotland as a whole for 27 years and for each NHS Board and Local Authority area for 10 years, and the numbers of 'additional' deaths by age-group and cause for 11 years. They also give recent years' numbers of deaths registered for Scotland and for NHS Board and Local Authority areas.
- 1.2 The seasonal increase in mortality in the winter is defined as the difference between the number of deaths in the four-month 'winter' period (December to March, inclusive) and the average number of deaths in the two four-month periods which precede winter (August to November, inclusive) and follow winter (April to July, inclusive).
- 1.3 There is no single cause of 'additional' deaths in winter. Very few are caused by hypothermia. The underlying causes of most of the 'additional' deaths are circulatory system diseases (such as coronary heart disease), respiratory system diseases (such as pneumonia), dementia, and Parkinson's, Alzheimer's and other degenerative nervous system diseases. In only a small proportion of deaths is influenza recorded as the underlying cause.

2. Commentary

- 2.1 [Table 1](#) shows recent trends in the seasonal increase in mortality in the winter for Scotland as a whole. It is estimated that there were about 2,720 'additional' deaths in Scotland during winter 2016/17. This was 130 fewer than the corresponding figure of 2,850 for the previous winter. The series starts with winter 1951/52. The seasonal increase of 2,720 in winter 2016/17 was smaller than in 47 of the previous 65 winters, and smaller than the average for those 65 winters (which was roughly 3,860). However, the figure for winter 2016/17 exceeded the level seen in 10 of the previous 20 winters, and in 5 of the previous 10 winters.
- 2.2 [Table 1](#) also shows the extent to which the seasonal increase in mortality in the winter affects the elderly, particularly those aged 75 and over. In the past ten winters, the percentage of the additional deaths accounted for by people aged 75 to 84 ranged between 29% (in 2010/11) and 40% (in 2007/08), and people aged 85 and over accounted for between 34% (in 2015/16) and 56% (in 2012/13) of the additional deaths. Overall, taking the average of the ten winters' percentages, around 32% of the additional deaths were of people who were aged 75 to 84, and 43% were of people aged 85 and over. The right-hand part of the table shows the number of additional deaths per 1,000 population in each age-group. It is clear that the seasonal increase in mortality is greatest for those aged 85 and over. For example, winter 2014/15 had almost 17 deaths of people who were aged 85 and over (when they died) per 1,000 people who were aged 85 and over (at mid-2014). On this basis, the worst winters (of those shown in the table) were 1998/99 and 1999/2000, which both had over 20 additional deaths aged 85 and over per 1,000 population aged 85 and over at mid-year. Over the period covered by the table, increases in the size of the population in the older age-groups mean that lower 'additional death' rates for each age-group will lead to a particular number of additional deaths. For example, the seasonal increases in mortality in winter

1991/92 and winter 2015/16 were almost the same (2,890 and 2,850, respectively), even though winter 2015/16 had much lower 'additional death' rates per 1,000 population in the older age-groups (for example, for those aged 85 and over, 8.38 for winter 2015/16 compared with 13.52 for winter 1991/92).

2.3 [Figure 1](#) shows the seasonal increase in mortality for each winter from 1951/52 individually (the bars) and as a 5-year moving average (the black line) - the latter should give a better guide to the overall trend, as it 'smoothes out' most (but not all) of the effect of year-to-year fluctuations in the figures. The chart shows that there has been an overall downward trend in the number of 'additional' winter deaths over the past 65-or-so years. Although there have been unusually large figures in some years (including 4,060 in winter 2014/15, which was the largest seasonal increase since the 5,190 in winter 1999/2000), the height of the peaks has generally appeared to be falling, and the 5-year moving average had tended to decline. However, there are fluctuations around the overall long-term downward trend, such as the short-term rise in the moving average towards the end of the 1990s, and it has risen recently (due to for example winter 2014/15 entering the calculation). While the latest 5-year moving average (2,646) is the thirteenth lowest value ever, it is greater than 11 of the previous 12 values – but, in several cases, the difference is at most a couple of hundred. Until its latest four values were calculated, the 5-year moving average appeared to have more-or-less 'levelled off' since the early 2000s: the average of the nine values (before the latest four) was 2,509, and seven of those nine values had been within 100 of 2,500. The latest value of the 5-year moving average (2,646) is slightly above the top of that range. It follows that, overall, and broadly speaking, the 5-year moving average has not changed much since the early 2000s.

2.4 [Table 2](#) gives the figures for the 66 winters for which these statistics are available. The 1,420 'additional' deaths in winter 2011/12 is the lowest figure in the whole series. Winter 2013/14 had the second lowest seasonal increase in mortality (1,600) recorded since the series started in 1951/52. Winter 2005/06 had the third lowest number (1,780), winter 2001/02 had the fourth lowest (1,840), and winter 2012/13 had the fifth lowest (2,000). The winters of 2007/08 and 2000/01 had the eighth and ninth lowest figures (2,180 and 2,220, respectively). As a result, the latest 17 winters have had 7 of the 10 lowest seasonal increases in mortality in the 66 years for which these statistics are available. In addition, as the twelfth and thirteenth lowest figures were 2,450 in winter 2010/11 and 2,510 in winter 2002/03, the latest 17 winters have had 9 of the 13 lowest seasonal increases in mortality. The other winters which had seasonal increases in mortality which were among the 13 lowest such figures were 1966/67 (2,020 - sixth lowest), 1988/89 (2,160 - seventh lowest), 1994/95 (2,310 - tenth lowest) and 1990/91 (2,430 - eleventh lowest).

2.5 [Table 3](#) gives a more detailed breakdown of the seasonal increase in mortality in the winter by age and NHS Board area. There are some negative figures: these are cases where a particular age-group had fewer deaths in the winter period than the average of the two adjacent non-winter periods. This happens sometimes because the number of deaths may fluctuate 'randomly' during the year. The 'all ages' figures for the seasonal increase in mortality in the winter take account of any negative values for individual age-groups. In this publication, the statistics for each NHS Board area are based on the boundaries which apply with effect from 1 April 2014. The figures for earlier years show what the numbers would have been,

had the new boundaries applied in those years. [Table 6](#) provides the same kinds of figures, but for each Local Authority area.

- 2.6 [Table 8](#) shows the numbers of ‘additional’ deaths for various categories of underlying causes of death. They are defined using the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). There may be some apparently very large Increased Winter Mortality Index values, which are based on small unrounded numbers of deaths. For example, a certain winter would have an Index value of 200 (per cent) for a particular cause of death / age-group ‘cell’ if it had two ‘additional’ deaths and there was, on average, only one death per four month non-winter period. The figures for the latest winter are provisional, and therefore subject to revision, because National Records of Scotland (NRS) has yet to receive final information about the causes of some of the deaths which were registered between January and July of the latest year. However, based on a comparison of ‘provisional’ and ‘final’ figures for winter 2014/15, it seems likely that only a small percentage of the (rounded) numbers of additional deaths will change by more than 10. The categories for which the numbers are most likely to change by more than 10 are ‘other external causes of death’ and ‘ill-defined and unknown causes’: categories for which NRS is more likely to receive further information which changes the classification of the cause of death. (The Index values may have more changes, including apparently large percentage changes, between their provisional and final versions, due to small revisions to the unrounded numbers from which they are calculated.)
- 2.7 The underlying causes of most of the 2,720 ‘additional’ deaths in winter 2016/17 were circulatory system diseases (330 additional deaths from coronary heart disease, 230 from cerebrovascular disease, and 270 from other circulatory system diseases), respiratory system diseases (390 additional deaths from chronic lower respiratory diseases, 310 from influenza and pneumonia, and 140 from other respiratory system diseases), dementia (460 additional deaths) and Parkinson’s, Alzheimer’s and other degenerative nervous system diseases (250 additional deaths). Taken together, those medical conditions caused 88% of the additional deaths in winter 2016/17 (and between 73% and 95% in each of the other winters shown in the table) even though they are responsible for only about half of all deaths registered in Scotland.
- 2.8 As the seasonal increase in mortality may fluctuate greatly from winter to winter, the number of ‘additional’ deaths from a particular cause could vary even more (in percentage terms) between one year and the next. In addition, changes in the software that is used for coding the causes of death have broken the continuity of the figures for certain causes of death. More information about this is available from [Section 4](#) (paragraphs 4.8 and 4.9). So, great caution is required when interpreting apparent changes or trends in the figures for individual causes of death, especially those that are mentioned in [Section 4](#).
- 2.9 The other tables provide the numbers of deaths registered each winter, and in the adjacent four-month periods, for Scotland, NHS Board areas and Local Authority areas. They also show the seasonal increase in mortality in the winter (which is sometimes referred to as the ‘seasonal difference’) that is calculated from those numbers of deaths: [Section 4](#) explains how it is done.

3. Relationship with Overall Mean Winter Temperature and the Level of Influenza Activity

3.1 In general, there are more deaths in colder months, and mortality tends to rise as temperatures fall. As well as figures for the seasonal increase in mortality, [Table 2](#) also gives the Met Office's overall mean winter temperature for Scotland for each of the years (based on data for December to February, rather than December to March). [Figure 2](#) shows that there may be a very slight tendency for the seasonal increase in mortality in the winter to be higher when the overall mean winter temperature is lower, but there is not a clear relationship. Part (a) shows this for all the winters for which figures are available; part (b) does so for the latest 20 winters alone. Here are a couple of examples of winters for which the expected relationship did (more-or-less) apply:

- winter 2013/14 was the fourth warmest of the 63 winters for which (at that time) these figures were available, with a mean temperature of 4.15°C, and had the second lowest seasonal increase in mortality (1,600);
- winter 2014/15 was, perhaps, a fairly 'typical' winter (in terms of its average temperature): it was the 35th coldest out of the 64 winters for which figures were available at that time, and had the 28th largest seasonal increase in mortality in the whole period. (However, the relationship is less clear if one looks only at what were, at that time, the latest twenty winters: in that period, winter 2014/15 was only the eighth coldest but it had had the third largest seasonal increase in mortality.)

On the other hand, there are also examples of winters for which the expected relationship did not apply:

- in terms of its average temperature, winter 2010/11 was the fifth coldest in the 60 years from 1951/52 to 2010/11, inclusive: it had a mean winter temperature of 1.28°C. Only four of the 59 preceding winters had a lower mean temperature (1962/63: 0.16°C; 1976/77: 1.02°C; 1978/79: 0.45°C; and 2009/10: 0.39°C) and the average of the mean temperatures for those 59 winters was 2.57°C. Therefore, one might have expected a relatively high seasonal increase in mortality in winter 2010/11. However, the seasonal increase in mortality in winter 2010/11 was (at that time) the ninth lowest figure recorded since the series started in 1951/52;
- winter 2011/12 was quite mild, with a mean temperature of 3.56°C. Eight of the preceding 60 winters had higher mean temperatures (ranging from 3.61°C in winter 2007/08 to 5.12°C in winter 1988/89), yet winter 2011/12 had by far the lowest seasonal increase in mortality.

3.2 There may be a number of reasons for the lack of a clear association, for example, over the years, improvements in home insulation and the spread of central heating will have altered the relationship between the weather outdoors and temperatures indoors. In addition, the overall mean winter temperature may not be a good indicator of the severity of a winter because it is an average over three months: it could therefore suggest that a winter with some extremely cold weeks (in, say, January) was 'mild' if the average for the three months were raised by unusually warm weather in, say, December or February.

3.3 [Table 2](#) also includes indicators of the level of influenza activity, which NRS has calculated from figures for the peak weekly rate (per 100,000 population) for General Practitioner (GP) consultations for influenza-like illnesses (ILI) which were supplied by Health Protection Scotland (HPS). The 'fluspotter' surveillance

scheme ran from 1971 to 2008. Since 2009/10 the Scottish Influenza Surveillance Reporting Scheme (SISRS) has provided aggregate level data on GP consultation for ILI, based on automated software extracts from 99% of Scottish GP practices. These data are now used for routine surveillance of ILI in Scotland. (Data from the Pandemic Influenza Primary Care Reporting [PIPeR] sentinel scheme, which started in 2004, have been used retrospectively to calculate comparable historical rates for SISRS for the period 2003/04 to 2008/09.) NRS has expressed each indicator (of the peak weekly rate for GP consultations for ILI over the relevant influenza season) in the form of an index, with the 2004/05 value being 100 in each case (one might expect differences between the two series' index values for the other years which they have in common, because different measuring systems may produce different results).

3.4 [Figure 3](#) suggests that the seasonal increase in mortality in the winter is likely to be higher when the peak weekly rate for GP consultations for ILI is higher: part (a) shows this using the 'fluspotter' data; part (b) does so using the 'SISRS' data. However, it will be seen that the relationship between the two numbers is not particularly strong, because there are some winters which had apparently similar levels of influenza activity (measured in terms of the peak weekly rate for GP consultations for ILI) but which had markedly different seasonal increases in mortality. This may be because the peak weekly rate may sometimes be a poor indicator of the total volume of influenza activity. For example, an 'influenza season' with a below-average peak weekly rate could have more cases than a 'normal' season if it lasted much longer than usual. In addition, the time of the year when influenza is at its highest may not be within the four winter months (as defined for the purpose of these statistics), which may reduce the statistical correlation between influenza activity and the seasonal increase in mortality. This can be seen from HPS's regular [Influenza Updates](#) (available on their website) which include a chart comparing the latest and the previous influenza seasons' GP consultation rates for flu. For example, the updates produced in April 2010 show that influenza in the 2009/10 season peaked in early November 2009 - which was before the start of what is defined as 'winter 2009/10' for the statistics of the seasonal increase in mortality in the winter.

3.5 Some of the winters which had particularly high seasonal increases in mortality were in periods with apparently unusually high levels of influenza activity (for example 1975/76 and 1989/90), but there have also been occasions when the relationship was less clear. Examples of the latter are winter 1971/72, which had a very high level of influenza activity, but its seasonal increase in mortality did not differ greatly from the 5-year moving average; and winter 2014/15, which had a relatively low level of influenza activity, when measured in terms of the peak rate for GP consultations, but a seasonal increase in mortality that was unusually high for the 21st century. The large seasonal increase in mortality in winter 2014/15 is believed to be due to the impact of the main influenza strain that was circulating at that time (influenza A H3N2), for three reasons. First, older people have demonstrated increased susceptibility to this strain and are more vulnerable to increased winter mortality. Second, the 2014/15 'influenza season' (as determined by the results of laboratory testing of swabs from sentinel general practices) was much longer than normal (around 20 weeks, rather than the usual 6-8 weeks). Third, while the vaccine which the World Health Organisation recommended (in February 2014) for use in Northern hemisphere countries over winter 2014/15 provided protection against a number of influenza strains, it was less successful in

protecting against H3N2. The vaccine was less effective than anticipated because the majority of the influenza A H3N2 viruses that were found to have circulated in Europe during the 2014/15 'influenza season' had 'drifted' from the vaccine strain. The mismatch between the vaccine and what turned out to be the dominant influenza strain was revealed by early and sustained pressure on elderly residential care settings with high uptake of seasonal influenza vaccine due to outbreaks of influenza H3N2. The patterns of influenza rates and changes in mortality rates seen in Scotland in winter 2014/15 were similar to those of a number of other EU countries.

3.6 The last winter with an apparently high level of influenza incidence was winter 1999/2000, when the seasonal increase in mortality was 5,190. Since then, the number of 'additional' deaths in winter had tended to fluctuate around about half of that level (this has, very broadly, been between roughly 2,000 and 3,000), with some exceptions (such as the values of 3,510 in winter 2008/09, 1,420 in winter 2011/12, 1,600 in winter 2013/14 and 4,060 in winter 2014/15).

3.7 Influenza may increase the mortality rate for vulnerable people, such as the elderly and those with long-term health conditions, like cancer and chronic obstructive pulmonary disease (COPD), by making them more vulnerable to the effects of existing health problems. Influenza and other respiratory system diseases may affect the circulatory system and trigger coronary heart disease or cerebrovascular disease. In such cases, the medical condition (for example COPD or heart disease) may be recorded as the cause of death, as influenza itself is mentioned on relatively few death certificates. Information about the numbers of deaths from different causes is given in the [Vital Events Reference Tables](#) on the NRS website. There, Table 6.01 shows that, in most years, relatively few deaths are registered for which the underlying cause is recorded as influenza (ICD-10 codes J09-J11): for example, 10 in 2008, 12 in 2010, 19 in 2012 and 23 in 2014. In recent years, the largest such figure was 94 deaths registered in 2015 (which is small in relation to the seasonal increase in mortality of 4,060 in winter 2014/15 – refer to [Table 1](#)); the second-largest was 79 in 2016 (again small relative to the seasonal increase of 2,850 in winter 2015/16); and the third-largest number of influenza deaths registered in recent years was 62 in 2009 (also small in relation to the seasonal increase in mortality of 3,510 in winter 2008/09). That figure of 62 includes all the deaths for which the underlying cause was H1N1/'swine' flu that were registered in 2009. H1N1/'swine' flu accounted for only a small proportion of winter 2009/10's seasonal increase in mortality. The HPS [Influenza Update](#) dated 15 April 2010 stated that 'the total number of reports received of deaths among those with confirmed Influenza A H1N1v in Scotland remains at 69', a figure which covers the period since H1N1/'swine' flu started in Scotland in Spring 2009, so the number of H1N1/'swine' flu deaths included in the figure for the seasonal increase in mortality in winter 2009/10 will be less than that.

4. How the Seasonal Increase in Mortality in the Winter is Calculated

- 4.1 The seasonal increase in mortality in the winter is defined as the difference between the number of deaths in the four-month 'winter' period (December to March, inclusive) and the average number of deaths in the two four-month periods which precede winter (August to November) and follow winter (April to July). This is a standard definition which is used by the Office for National Statistics, the World Health Organisation and others (who may describe it as – for example - 'excess winter deaths' or 'excess winter mortality').
- 4.2 Some of the previous editions of this publication were called 'Increased Winter Mortality' and 'Excess Winter Mortality'. The title was changed to reduce the likelihood of misunderstandings (because someone seeing, say, 'Increased Winter Mortality in Scotland, 2009/10' might wrongly infer that there had been an increase in winter mortality in that year).
- 4.3 The numbers of deaths registered each winter, and in the adjacent four-month periods, are provided in [Table 4](#), along with figures for the seasonal increase in mortality in the winter (sometimes referred to as the 'seasonal difference') which have been calculated from those numbers of deaths.
- 4.4 [Table 4](#) shows that 20,930 deaths were registered in Scotland in the four months of winter 2016/17 (December 2016 to March 2017). This was more than in the preceding 4-month period (August 2016 to November 2016: 18,335 deaths) and in the following 4-month period (April 2017 to July 2017: 18,095 deaths). Comparing the four winter months with the average of the 4-month periods before and after the winter, and rounding the result to the nearest ten, gives a figure for increased winter mortality of 2,720 for winter 2016/17. The corresponding figures for the other winters were calculated using the same method.
- 4.5 [Table 5](#) provides the same kind of information as [Table 4](#) but for each NHS Board area for the latest four years, in order to provide examples of the calculation of the seasonal increase in mortality for NHS Board areas; [Table 7](#) does the same for each Local Authority area.
- 4.6 The figures in [Table 4](#) may be used to compare winters in terms of their actual numbers of deaths as well as on the basis of their seasonal increases in mortality. In terms of the numbers of deaths registered in Scotland, winter 2014/15 was unusually bad compared to the previous 14 and subsequent two winters. The 22,013 deaths registered in the four months of winter 2014/15 was the highest number that had been recorded since winter 1999/2000 (when 23,379 deaths were registered). In contrast, the 18,675 deaths registered in Scotland in the four months of the previous winter (2013/14) was the lowest number for any of the 27 winters that are shown in [Table 4](#). It was also the lowest value for any of the 66 winters for which those values have been calculated, which start with winter 1951/52. This is because, of the winters from 1951/52 to 1989/90 (which are not shown in [Table 4](#)), the one with the fewest deaths was winter 1966/67, when 21,431 deaths were registered.
- 4.7 In terms of the number of deaths registered, winter 2016/17 (with 20,930) was closer than winters 2013/14 and 2014/15 to the annual average for the other 15 winters in the 21st century (which was 20,413 for the winters from 1999/2000 to

2012/13, inclusive, plus winter 2015/16). On this basis, winter 2016/17 was the fifth worst of the 18 winters so far this century,. Five of this century's other winters had broadly similar numbers of deaths to winter 2016/17 (between 20,509 and 21,058), two (including winter 2014/15) had at least 500 more deaths than winter 2016/17, and ten (including winter 2013/14) had at least 500 fewer deaths than winter 2016/17.

4.8 The seasonal increase in deaths from a particular cause is calculated as described in paragraph 4.1, but using only figures for deaths with that underlying cause. However, from time to time, changes in the automatic cause of death coding software used by NRS have caused breaks in the continuity of the statistics for some causes of death. The figures in [Table 8](#) are affected by coding changes which were made with effect from the start of 2011 and 2017. They broke the continuity of the seasonal increase in mortality for some causes of death around winter 2010/11 and around winter 2016/17, because the seasonal increases for (for example)

- winter 2009/10 were calculated wholly from data coded by the 'old' software (that used for deaths that were registered up to the end of 2010);
- winter 2010/11 were calculated from some data coded by the 'old' software (for deaths registered from August 2010 to December 2010) and some coded by the 'new' software (for deaths registered from January 2011 to July 2011);
- winter 2011/12 were calculated wholly from data coded by the 'new' software (that used for deaths that were registered from the start of 2011).

4.9 Papers on the software changes (available from the [Death Certificates and Coding the Causes of Death](#) page of the NRS website) describe the causes of death most affected by the changes in the coding software. From such information, it is clear that (of the causes of death shown in [Table 8](#)) the ones most affected by, and the effect on their numbers from, the changes in the software are as follows:

- 2011 changes:
 - influenza and pneumonia – reduction in numbers due to the change;
 - other respiratory system diseases – reduction;
 - dementia – increase;
 - other mental and behavioural disorders – reduction;
 - Parkinson's, Alzheimer's and other degenerative nervous system diseases – increase;
 - genitourinary system diseases – reduction;
 - other external causes of death – increase;
- 2017 changes:
 - other respiratory system diseases – reduction;
 - dementia – increase;
 - Parkinson's, Alzheimer's and other degenerative nervous system diseases – increase.

The above causes are listed in the order in which they appear in [Table 8](#). It is not possible to quantify the effect on their figures because (in general) the papers' estimates of such effects are for different causes (or groups thereof). From the papers, one can determine which of [Table 8](#)'s categories would be affected markedly by the software changes, and whether their numbers would have increased or decreased as a result, but not by how much their seasonal increases might have changed (which, in any case, could well be small relative to some of the year-to-year fluctuations in the seasonal increase in mortality).

5. Background: about these statistics

- 5.1 This is an annual publication. National Records of Scotland (NRS) collects the underlying data on a daily basis, as and when each event is registered. The statistics for the latest winter are all new. The figures for the previous winter may have been revised very slightly.
- 5.2 Information about (for example) the sources, methods, definitions and reliability of these statistics is available from the following NRS web site pages [general background information on Vital Events statistics](#) and [background information on points which are specific to statistics about deaths](#). These figures are directly comparable with those for other parts of the United Kingdom (UK), there are no significant differences across the UK in how Vital Events data are collected and processed.
- 5.3 The figures for the latest winter, and the subsequent four month period, given here are provisional. They were produced from the information that NRS held about deaths which had been registered by (roughly) five weeks before the date on which this release was published. By law, a death which occurs in Scotland must be registered within eight days. Therefore, hardly any deaths which occurred in the winter (December to March), or in the subsequent four month period (April to July), will not have been registered in time to be included in NRS's statistical database before the tables for this release were produced. However, the figures could change slightly, because 'late' registrations occur occasionally, in unusual circumstances. NRS does not 'freeze' its statistical data for a given year until it starts to prepare the final statistics for the calendar year as a whole, which are published in the following summer.
- 5.4 Statistics of the seasonal increase in mortality in the winter inform public debate and the development of government policy on matters such as the health of the elderly population, fuel poverty and whether there is a need to improve the housing stock in terms of central heating and thermal insulation.
- 5.5 A separate document, [Increased Winter Mortality - Background Note](#) (PDF 39 Kb), published in October 2010 (available on the NRS website), gives information about some of the medical causes of the seasonal increase in mortality in the winter, describes some research studies' findings on factors that influence it, reports on a comparison of the figures for a number of European countries, mentions previous publications on this topic, and provides references to the sources of the material. The main points to note are:
- high cold-related mortality is associated with low indoor temperatures, and with people not wearing appropriate clothing when outdoors in cold weather;
 - increased winter mortality was at the same level in Scotland as the overall mean for the 14 European countries covered by a comparative study; and
 - the seasonal increase in mortality in the winter is higher in countries with a warmer winter climate, probably because their homes tend to be poorly insulated and their populations tend not to dress well for cold weather.
- 5.6 The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

5.7 Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

5.8 Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

Table 1: The Seasonal Increase in Mortality in the Winter by age group, Scotland, 1990/91 to 2016/17

	Seasonal increase in mortality ^{1, 2} by age at death					Seasonal increase per 1,000 population at the mid-year before the winter ³				
	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+	All ages
1990/91	230	580	750	880	2,430	0.05	1.33	2.88	13.06	0.48
1991/92	350	560	1,020	950	2,890	0.08	1.27	3.94	13.52	0.57
1992/93	280	550	950	960	2,740	0.06	1.23	3.71	13.24	0.54
1993/94	350	440	990	800	2,590	0.08	0.97	3.97	10.71	0.51
1994/95	240	380	930	760	2,310	0.06	0.83	3.82	9.91	0.45
1995/96	250	860	1,420	1,120	3,650	0.06	1.91	5.65	14.09	0.72
1996/97	320	630	1,350	1,350	3,640	0.07	1.41	5.27	16.65	0.71
1997/98	170	730	950	760	2,610	0.04	1.64	3.65	9.19	0.51
1998/99	380	790	1,660	1,920	4,750	0.09	1.77	6.33	22.65	0.94
1999/2000	650	970	1,820	1,750	5,190	0.15	2.18	6.88	20.32	1.02
2000/01	260	370	820	760	2,220	0.06	0.83	3.08	8.67	0.44
2001/02	80	230	820	710	1,840	0.02	0.51	3.02	8.00	0.36
2002/03	350	300	940	920	2,510	0.08	0.67	3.37	10.78	0.50
2003/04	320	510	840	1,170	2,840	0.08	1.13	2.97	14.00	0.56
2004/05	200	430	1,030	1,090	2,760	0.05	0.94	3.59	13.16	0.54
2005/06	330	280	550	610	1,780	0.08	0.61	1.92	6.89	0.35
2006/07	190	410	980	1,180	2,750	0.04	0.90	3.42	12.57	0.54
2007/08	130	320	880	850	2,180	0.03	0.70	3.04	8.79	0.42
2008/09	370	590	1,170	1,370	3,510	0.09	1.27	4.00	13.88	0.67
2009/10	460	370	890	1,040	2,760	0.11	0.78	3.01	10.27	0.53
2010/11	410	430	720	890	2,450	0.09	0.90	2.40	8.57	0.47
2011/12	230	110	440	650	1,420	0.05	0.23	1.44	6.07	0.27
2012/13	90	190	600	1,120	2,000	0.02	0.37	1.94	10.25	0.38
2013/14	140	210	530	730	1,600	0.03	0.40	1.69	6.59	0.30
2014/15	270	610	1,240	1,940	4,060	0.06	1.14	3.89	16.96	0.76
2015/16	450	530	910	970	2,850	0.10	0.97	2.83	8.38	0.53
2016/17 provisional	200	280	810	1,430	2,720	0.05	0.50	2.51	12.01	0.50

Footnotes

- 1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December to March) and the average of the numbers of deaths in the preceding (August to November) and following (April to July) non-winter four-month periods.
- 2) Because of the approximate nature of this measure, numbers have been rounded independently to the nearest 10. The sum of the age group figures may, therefore, differ from the 'all ages' total.
- 3) For example the (rounded) seasonal increase in mortality for those who died aged 85+ in winter 1990/91, expressed per 1,000 population aged 85+ in mid-1990. There is a minor discrepancy between the numerator and the denominator, because they cover slightly different populations. For example, some of the people who died aged 85+ in winter 1990/91, or in the preceding and subsequent four-month non-winter periods, would have been aged only 84 at mid-1990, and so would have been counted in the '75-84 at mid-1990' age-group (rather than in the '85+ at mid-1990' age-group). However, this should not affect greatly the rates per 1,000 population, and so should not alter significantly the main patterns shown by the figures or the conclusions that may be drawn from them.

Table 2: The Seasonal Increase in Mortality in the Winter, mean winter temperature and indicators of level of influenza activity, Scotland, 1951/52 to 2016/17

Year	Seasonal increase in mortality in the winter ¹		Mean winter temperature ² (deg. C.)	Indicators of influenza activity ³ (Index: 2004/05 = 100)	
	Additional deaths (Dec-Mar)	5-year moving average		'Fluspotter'	'SISRS'
1951/52	5,240		1.89		
1952/53	5,890		2.94		
1953/54	4,770	5,634	2.70		
1954/55	5,820	5,140	1.41		
1955/56	6,450	4,854	1.52		
1956/57	2,770	5,734	3.47		
1957/58	4,460	5,388	2.06		
1958/59	9,170	5,166	1.66		
1959/60	4,090	5,630	2.12		
1960/61	5,340	6,160	2.56		
1961/62	5,090	5,068	2.13		
1962/63	7,110	5,092	0.16		
1963/64	3,710	5,294	3.09		
1964/65	4,210	4,680	1.87		
1965/66	6,350	4,378	1.60		
1966/67	2,020	4,596	3.00		
1967/68	5,600	5,162	1.91		
1968/69	4,800	4,434	1.55		
1969/70	7,040	5,024	1.52		
1970/71	2,710	4,720	3.41		
1971/72	4,970	4,322	3.56	3,412	
1972/73	4,080	3,606	3.23	1,286	
1973/74	2,810	4,352	3.50	2,081	
1974/75	3,460	4,064	3.88	1,144	
1975/76	6,440	4,218	3.72	2,951	
1976/77	3,530	4,494	1.02	656	
1977/78	4,850	4,336	1.77	2,214	
1978/79	4,190	3,802	0.45	951	
1979/80	2,670	4,356	2.47	967	
1980/81	3,770	4,300	2.97	800	
1981/82	6,300	4,020	1.36	1,542	
1982/83	4,570	4,112	2.49	1,309	
1983/84	2,790	4,300	2.53	1,698	
1984/85	3,130	3,688	2.12	705	
1985/86	4,710	3,292	1.28	1,107	
1986/87	3,240	3,166	2.00	847	
1987/88	2,590	3,632	3.14	337	
1988/89	2,160	3,176	5.12	819	
1989/90	5,460	3,106	3.34	2,753	
1990/91	2,430	3,136	1.99	319	
1991/92	2,890	3,222	3.94	928	
1992/93	2,740	2,592	3.42	979	
1993/94	2,590	2,836	1.77	2,053	
1994/95	2,310	2,986	2.89	219	
1995/96	3,650	2,960	1.76	907	

Table 2, continued

Year	Seasonal increase in mortality in the winter ¹		Mean winter temperature ² (deg. C.)	Indicators of influenza activity ³ (Index: 2004/05 = 100)	
	Additional deaths (Dec-Mar)	5-year moving average		'Fluspotter'	'SISRS'
1996/97	3,640	3,392	2.48	1,763	
1997/98	2,610	3,968	4.51	272	
1998/99	4,750	3,682	3.26	718	
1999/00	5,190	3,322	3.03	1,973	
2000/01	2,220	3,302	2.16	144	
2001/02	1,840	2,920	3.39	95	
2002/03	2,510	2,434	2.96	98	
2003/04	2,840	2,346	3.20	321	107
2004/05	2,760	2,528	3.94	100	100
2005/06	1,780	2,462	3.35	77	92
2006/07	2,750	2,596	4.34	367	221
2007/08	2,180	2,596	3.61	116	94
2008/09	3,510	2,730	2.60		230
2009/10	2,760	2,464	0.39		147
2010/11	2,450	2,428	1.28		174
2011/12	1,420	2,046	3.56		13
2012/13	2,000	2,306	2.49		37
2013/14	1,600	2,386	4.15		15
2014/15	4,060	2,646	2.87		32
2015/16	2,850		3.62		21
2016/17 prov.	2,720		4.42		16

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods.

2) The mean winter temperature for Scotland (for December to February), as obtained from the Met Office website (for the relevant page click: Home - Public - Weather - UK Climate - Climate Summaries - Download regional values, and then select the link for 'Scotland Mean Temp' which appears under the 'Year ordered statistics' heading).

3) Indicators of the numbers of General Practitioner (GP) consultations for influenza-like illness, calculated from figures which were supplied by Health Protection Scotland (HPS).

The index values have been calculated from the maximum rate (per 100,000 population) in each flu season.

The 'fluspotter' surveillance scheme, which ran from 1971 to 2008, was superseded by the Pandemic Influenza Primary Care Reporting (PIPeR) sentinel scheme, which started in 2004. However, due to a change in the software used by GP practices, it was not possible to use PIPeR for the surveillance of GP consultation rates for influenza-like illnesses (ILI) with effect from winter 2011/12.

Since 2009/10 the Scottish Influenza Surveillance Reporting Scheme (SISRS) has provided aggregate level data on GP consultation for ILI, based on automated software extracts from 99 per cent of Scottish GP practices. These data are now used for routine surveillance of ILI in Scotland, and data from the PIPeR sentinel scheme have been used retrospectively to calculate comparable historical rates for SISRS for the period 2003/04 to 2008/09. A technical guide providing more details on SISRS data is available from the HPS website on seasonal influenza surveillance.

Please note that since the 'fluspotter' and 'SISRS' systems measure activity using different methods and definitions, their results are not directly comparable.

Table 3: The Seasonal Increase in Mortality in the Winter and the Increased Winter Mortality Index, by age group and NHS Board area of usual residence, 2007/08 to 2016/17

Scotland

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	2,180	130	320	880	850	12	3	9	16	17
2008/09	3,510	370	590	1,170	1,370	21	10	18	22	28
2009/10	2,760	460	370	890	1,040	16	13	11	17	21
2010/11	2,450	410	430	720	890	14	12	13	14	17
2011/12	1,420	230	110	440	650	8	7	3	8	12
2012/13	2,000	90	190	600	1,120	11	3	6	11	20
2013/14	1,600	140	210	530	730	9	4	6	10	14
2014/15	4,060	270	610	1,240	1,940	23	8	18	23	33
2015/16	2,850	450	530	910	970	16	13	16	17	17
2016/17 (P)	2,720	200	280	810	1,430	15	6	8	15	24

Ayrshire & Arran

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	140	-10	30	40	90	10	.	9	8	23
2008/09	380	30	50	160	140	29	11	19	42	35
2009/10	190	10	10	90	70	14	4	5	23	19
2010/11	200	20	30	70	90	15	6	13	15	22
2011/12	70	-10	20	60	-10	5	.	9	16	.
2012/13	150	-30	10	80	90	10	.	4	17	21
2013/14	160	50	10	20	80	11	19	3	5	19
2014/15	300	10	30	120	130	21	6	10	27	29
2015/16	180	0	60	90	30	13	0	20	23	7
2016/17 (P)	240	0	30	40	170	17	1	12	8	40

Borders

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	80	20	10	0	40	19	32	19	0	36
2008/09	100	10	20	40	30	24	15	23	34	21
2009/10	50	-10	10	20	30	12	.	9	18	25
2010/11	70	10	20	10	30	19	21	39	6	22
2011/12	40	-10	20	20	10	9	.	26	19	4
2012/13	70	0	-10	40	40	16	.	.	31	24
2013/14	10	-10	-10	10	20	3	.	.	11	11
2014/15	120	10	20	30	60	28	23	30	19	36
2015/16	70	0	20	20	30	19	5	31	19	19
2016/17 (P)	60	10	20	0	20	14	21	28	3	14

Dumfries & Galloway

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	90	30	10	30	20	16	37	7	13	15
2008/09	140	20	30	40	40	25	23	29	25	24
2009/10	100	10	10	30	50	18	12	12	17	27
2010/11	50	20	10	10	20	8	17	7	4	9
2011/12	20	-20	-20	10	40	3	.	.	6	19
2012/13	40	0	-10	20	40	7	.	.	10	18
2013/14	110	20	30	20	40	19	24	28	10	21
2014/15	160	10	30	50	60	26	18	23	28	29
2015/16	130	20	30	20	50	23	30	28	13	27
2016/17 (P)	130	-10	30	60	50	22	.	29	34	21

Table 3, continued

Fife

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	210	10	10	80	110	17	3	3	21	33
2008/09	280	10	60	80	130	23	6	25	21	36
2009/10	190	30	40	60	60	16	14	17	16	16
2010/11	90	30	-10	50	20	7	13	.	12	6
2011/12	120	20	50	-10	60	10	8	23	.	15
2012/13	140	-10	60	30	70	11	.	27	7	16
2013/14	40	0	-10	0	50	3	2	.	1	13
2014/15	250	0	30	90	130	20	2	14	24	31
2015/16	230	30	40	110	50	18	15	17	30	12
2016/17 (P)	160	0	30	60	70	12	.	11	16	16

Forth Valley

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	110	20	-10	50	60	12	9	.	15	21
2008/09	280	40	40	90	110	32	21	23	32	45
2009/10	100	20	20	-10	70	11	14	10	.	25
2010/11	140	30	30	30	40	15	16	18	11	17
2011/12	60	0	-10	40	30	6	.	.	13	10
2012/13	90	10	-20	30	60	9	7	.	11	22
2013/14	70	-10	10	30	50	8	.	4	11	16
2014/15	230	30	20	60	130	25	15	10	18	46
2015/16	150	40	-10	100	30	15	19	.	33	10
2016/17 (P)	70	10	0	20	40	7	4	1	5	14

Grampian

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	250	20	50	100	70	15	7	16	19	14
2008/09	270	20	50	60	150	16	5	16	11	30
2009/10	210	40	30	50	100	13	12	10	9	18
2010/11	250	20	40	80	120	15	6	15	15	22
2011/12	180	40	10	70	70	11	14	2	13	12
2012/13	170	30	30	-10	120	10	9	10	.	22
2013/14	230	20	50	60	110	14	6	18	10	20
2014/15	430	10	60	100	260	24	4	19	18	44
2015/16	270	30	40	50	140	15	9	14	11	24
2016/17 (P)	280	20	-30	110	180	16	6	.	21	29

Greater Glasgow & Clyde⁵

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	560	50	90	230	200	14	5	10	18	19
2008/09	740	100	140	180	320	19	11	18	15	31
2009/10	540	120	60	200	160	14	14	8	17	15
2010/11	560	130	90	140	210	14	14	12	12	20
2011/12	250	40	30	60	120	6	4	4	5	10
2012/13	410	40	20	100	250	10	4	2	8	22
2013/14	300	0	100	110	90	8	.	14	9	8
2014/15	950	110	170	290	390	24	13	24	24	33
2015/16	560	120	70	180	190	14	15	9	15	17
2016/17 (P)	530	30	40	180	280	13	4	6	15	24

Table 3, continued

Highland⁵

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	80	0	0	-10	80	7	0	1	.	26
2008/09	150	0	40	30	70	13	1	18	10	23
2009/10	200	40	30	50	80	19	20	13	15	25
2010/11	110	10	40	20	40	10	3	22	6	12
2011/12	90	20	-10	40	40	8	10	.	11	11
2012/13	140	20	10	60	60	13	9	4	19	15
2013/14	100	0	30	40	40	10	0	15	13	11
2014/15	130	-40	30	50	90	11	.	12	14	22
2015/16	290	60	60	60	110	27	30	29	20	30
2016/17 (P)	190	10	10	70	100	17	3	6	21	26

Lanarkshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	280	-20	40	190	70	13	.	10	29	12
2008/09	520	90	100	200	140	26	19	23	33	27
2009/10	460	110	60	170	120	22	24	14	26	24
2010/11	330	50	70	90	120	16	12	16	14	23
2011/12	210	50	-20	60	110	10	12	.	10	18
2012/13	300	30	60	110	110	14	6	14	15	18
2013/14	210	20	0	80	110	10	5	0	12	18
2014/15	510	20	120	170	210	23	4	27	23	33
2015/16	360	30	100	100	130	17	7	24	15	21
2016/17 (P)	340	70	30	110	140	15	15	6	15	21

Lothian

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	220	10	50	90	70	9	3	13	11	9
2008/09	420	30	70	170	150	18	5	17	24	20
2009/10	380	40	60	110	170	17	9	14	15	25
2010/11	390	90	50	150	100	17	19	11	22	14
2011/12	210	80	10	30	90	8	16	2	4	11
2012/13	290	-10	50	100	140	12	.	12	14	17
2013/14	280	40	0	110	130	12	10	.	16	17
2014/15	480	30	50	160	240	20	7	12	22	28
2015/16	320	50	120	80	80	13	10	27	11	10
2016/17 (P)	320	30	60	60	170	13	7	15	8	20

Orkney

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	0	0	-10	10	0	1	16	.	30	13
2008/09	10	0	10	-10	10	14	9	42	.	51
2009/10	0	0	0	0	0	.	9	.	8	.
2010/11	10	10	0	10	0	19	58	.	37	11
2011/12	-10	0	0	-10	0	.	5	4	.	19
2012/13	10	0	0	0	0	9	8	.	13	15
2013/14	10	10	0	0	-10	11	100	14	10	.
2014/15	10	0	0	10	10	17	27	.	33	24
2015/16	0	0	0	10	0	6	4	8	41	.
2016/17 (P)	0	0	10	-10	0	.	4	46	.	.

Table 3, continued

Shetland

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	10	0	0	10	0	10	4	.	50	5
2008/09	0	-10	0	0	10	2	.	29	.	28
2009/10	10	0	0	0	10	17	29	.	12	28
2010/11	10	0	0	10	0	17	36	25	43	.
2011/12	-10	0	0	0	0	.	.	.	.	.
2012/13	0	-10	0	10	0	.	.	13	44	.
2013/14	0	0	0	0	10	6	3	.	.	54
2014/15	20	0	0	10	10	23	10	.	32	45
2015/16	10	0	0	10	0	8	36	.	26	.
2016/17 (P)	10	0	0	0	10	17	38	26	.	37

Tayside

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	150	-20	50	70	50	10	.	19	14	11
2008/09	220	40	0	90	100	16	15	.	20	22
2009/10	300	30	50	100	130	22	11	20	23	28
2010/11	220	0	40	70	110	16	0	17	16	24
2011/12	180	10	20	70	80	12	4	8	16	16
2012/13	190	20	-10	40	140	13	7	.	8	28
2013/14	80	0	10	40	20	6	1	6	10	5
2014/15	430	40	50	130	210	30	17	20	30	41
2015/16	240	60	10	70	110	16	22	2	16	22
2016/17 (P)	340	30	30	110	180	23	11	10	25	34

Western Isles

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007/08	10	10	0	20	-10	5	23	.	48	.
2008/09	10	-10	0	20	-10	8	.	12	61	.
2009/10	40	10	10	20	0	35	53	29	84	.
2010/11	0	0	0	0	-10	.	.	24	3	.
2011/12	30	10	10	0	10	20	53	22	.	29
2012/13	20	10	10	0	10	15	52	37	.	15
2013/14	-10	0	-10	10	0	.	.	.	21	.
2014/15	30	20	0	10	10	31	94	17	30	14
2015/16	40	10	10	10	10	38	44	59	27	32
2016/17 (P)	30	0	10	10	10	31	24	35	29	34

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods. A negative figure occurs when there were fewer deaths during the winter period than the average of the two 'non-winter' periods.

2) Because of the approximate nature of this measure, numbers have been rounded independently to the nearest 10. The sum of the age group figures may therefore appear to differ from the 'all ages' total.

3) The Increased Winter Mortality (IWM) Index is the (unrounded) number of 'additional' winter deaths divided by the (unrounded) average number of deaths in a four month 'non-winter' period, expressed as a percentage.

4) The IWM Index has not been calculated when the number of 'additional' winter deaths was negative.

5) The statistics for each board's area are based on the boundaries that apply with effect from 1 April 2014. Figures for earlier years show what the numbers would have been had the new boundaries applied in those years (and up to 2012-13 have been revised, where appropriate, from what was published up until Autumn 2013). Figures for 'Greater Glasgow & Clyde' and 'Highland' include deaths in the relevant parts of the former NHS Argyll and Clyde area.

(P) Data for the latest year are provisional.

Table 4: The Seasonal Increase in Mortality in the Winter – the underlying numbers of registrations of deaths, Scotland, 1990/91 to 2016/17

Period	Number of deaths registered			Seasonal increase in mortality in the winter (or seasonal difference) ¹	
	Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
1990/91	21,859	19,103	19,752	2,432	2,430
1991/92	22,217	19,305	19,352	2,889	2,890
1992/93	22,416	19,417	19,929	2,743	2,740
1993/94	22,504	21,104	18,732	2,586	2,590
1994/95	21,510	19,103	19,301	2,308	2,310
1995/96	22,821	19,074	19,260	3,654	3,650
1996/97	22,438	18,585	19,005	3,643	3,640
1997/98	21,320	18,311	19,105	2,612	2,610
1998/99	23,163	18,856	17,973	4,749	4,750
1999/2000	23,379	18,407	17,974	5,189	5,190
2000/01	20,388	18,061	18,281	2,217	2,220
2001/02	20,366	18,239	18,815	1,839	1,840
2002/03	21,058	18,599	18,499	2,509	2,510
2003/04	21,024	18,616	17,749	2,842	2,840
2004/05	20,658	18,064	17,736	2,758	2,760
2005/06	19,651	17,619	18,127	1,778	1,780
2006/07	20,384	17,526	17,739	2,752	2,750
2007/08	19,900	17,600	17,850	2,175	2,180
2008/09	20,532	17,075	16,969	3,510	3,510
2009/10	19,688	17,059	16,789	2,764	2,760
2010/11	19,626	17,397	16,958	2,449	2,450
2011/12	19,119	17,269	18,127	1,421	1,420
2012/13	19,908	17,773	18,045	1,999	2,000
2013/14	18,675	16,848	17,297	1,603	1,600
2014/15	22,013	17,493	18,410	4,062	4,060
2015/16	20,509	17,625	17,686	2,854	2,850
2016/17 provisional	20,930	18,335	18,095	2,715	2,720

Footnote

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods.

Table 5: The Seasonal Increase in Mortality in the Winter - the underlying numbers of registrations of deaths, by NHS Board area of usual residence, 2013/14 to 2016/17

NHS Board area ²	Period	Number of deaths registered			Seasonal increase in mortality in the winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
Ayrshire & Arran						
	2013/14	1,552	1,398	1,395	156	160
	2014/15	1,752	1,398	1,508	299	300
	2015/16	1,587	1,436	1,377	181	180
	2016/17 provisional	1,660	1,460	1,374	243	240
Borders						
	2013/14	414	372	431	13	10
	2014/15	569	439	451	124	120
	2015/16	467	382	405	74	70
	2016/17 provisional	476	420	416	58	60
Dumfries & Galloway						
	2013/14	697	554	615	113	110
	2014/15	746	579	602	156	160
	2015/16	701	556	587	130	130
	2016/17 provisional	723	567	617	131	130
Fife						
	2013/14	1,217	1,174	1,179	41	40
	2014/15	1,493	1,186	1,295	253	250
	2015/16	1,477	1,208	1,285	231	230
	2016/17 provisional	1,501	1,293	1,384	163	160
Forth Valley						
	2013/14	1,002	943	916	73	70
	2014/15	1,177	916	974	232	230
	2015/16	1,134	980	992	148	150
	2016/17 provisional	1,076	1,053	960	70	70
Grampian						
	2013/14	1,905	1,669	1,676	233	230
	2014/15	2,192	1,721	1,809	427	430
	2015/16	2,016	1,786	1,707	270	270
	2016/17 provisional	2,028	1,774	1,725	279	280
Greater Glasgow & Clyde						
	2013/14	4,126	3,756	3,892	302	300
	2014/15	4,881	3,855	4,002	953	950
	2015/16	4,430	3,792	3,950	559	560
	2016/17 provisional	4,558	4,020	4,027	535	530

Table 5, continued

NHS Board area ²	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
Highland						
	2013/14	1,141	1,007	1,067	104	100
	2014/15	1,322	1,111	1,268	133	130
	2015/16	1,352	1,137	993	287	290
	2016/17 provisional	1,346	1,191	1,116	193	190
Lanarkshire						
	2013/14	2,305	2,062	2,126	211	210
	2014/15	2,751	2,176	2,304	511	510
	2015/16	2,549	2,205	2,168	363	360
	2016/17 provisional	2,611	2,294	2,251	339	340
Lothian						
	2013/14	2,606	2,307	2,349	278	280
	2014/15	2,929	2,437	2,460	481	480
	2015/16	2,773	2,426	2,478	321	320
	2016/17 provisional	2,800	2,518	2,444	319	320
Orkney						
	2013/14	76	68	69	8	10
	2014/15	78	57	76	12	10
	2015/16	75	67	75	4	0
	2016/17 provisional	82	77	91	-2	0
Shetland						
	2013/14	69	66	64	4	0
	2014/15	96	74	82	18	20
	2015/16	84	87	68	7	10
	2016/17 provisional	85	78	67	13	10
Tayside						
	2013/14	1,461	1,373	1,392	79	80
	2014/15	1,882	1,439	1,462	432	430
	2015/16	1,726	1,472	1,492	244	240
	2016/17 provisional	1,843	1,479	1,519	344	340
Western Isles						
	2013/14	104	99	126	-9	-10
	2014/15	145	105	117	34	30
	2015/16	138	91	109	38	40
	2016/17 provisional	141	111	104	34	30

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods. A negative figure occurs when there were fewer deaths during the winter period than the average of the two 'non-winter' periods.

2) The statistics for each board's area are based on the boundaries that apply with effect from 1 April 2014. Figures for 2013/14 show what the numbers would have been had the new boundaries applied then.

Table 6: The Seasonal Increase in Mortality in the Winter and the Increased Winter Mortality Index, by age group and Local Authority area of usual residence, 2007/08 to 2016/17

Aberdeen City

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	70	30	10	30	10	10	21	4	15	3
2008-09	130	40	10	20	60	20	28	8	9	34
2009-10	30	20	10	-10	0	4	15	9	.	1
2010/11	120	10	10	40	60	19	7	9	18	32
2011/12	90	40	0	10	40	14	33	1	7	17
2012/13	80	20	20	-20	60	12	12	16	.	31
2013/14	110	0	30	30	50	17	0	25	16	25
2014/15	160	20	20	30	90	23	13	18	17	37
2015/16	100	20	0	30	40	14	15	1	19	17
2016/17 (P)	60	0	-20	40	30	8	1	.	21	13

Aberdeenshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	120	-10	40	50	40	16	.	33	22	17
2008-09	90	-20	20	30	50	13	.	16	16	24
2009-10	120	20	0	40	60	17	13	1	16	28
2010/11	90	0	20	30	40	13	.	18	14	17
2011/12	70	-10	10	50	20	10	.	8	24	7
2012/13	80	10	10	20	50	11	4	5	7	20
2013/14	60	10	20	0	30	8	8	15	.	13
2014/15	180	-10	20	40	130	23	.	14	16	49
2015/16	110	10	30	0	60	14	8	24	1	24
2016/17 (P)	160	20	-10	50	100	22	18	.	22	39

Angus

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	30	0	10	30	-10	6	1	7	25	.
2008-09	70	10	0	30	20	17	19	7	20	18
2009-10	100	0	20	30	50	25	.	31	28	38
2010/11	30	-10	0	0	40	8	.	2	.	37
2011/12	40	10	-10	20	20	10	10	.	15	15
2012/13	70	0	10	0	60	16	7	12	.	42
2013/14	20	0	0	0	10	5	4	5	2	9
2014/15	120	10	10	20	80	28	14	8	15	55
2015/16	60	10	0	30	20	13	7	2	26	10
2016/17 (P)	110	0	10	40	60	25	.	10	33	41

Argyll & Bute

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	40	0	0	0	30	11	.	3	4	32
2008-09	40	10	0	-10	40	13	24	.	.	36
2009-10	60	10	10	30	20	17	13	10	27	14
2010/11	10	-10	10	0	10	3	.	21	.	9
2011/12	30	10	0	10	10	9	16	.	12	10
2012/13	50	10	0	20	20	15	33	0	18	15
2013/14	40	10	10	20	0	11	13	19	20	.
2014/15	70	0	10	20	30	18	6	22	17	22
2015/16	70	10	10	20	20	20	27	16	19	20
2016/17 (P)	70	10	-10	30	40	22	16	.	36	31

Table 6, continued

City of Edinburgh ⁵

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	160	20	30	50	50	11	9	13	12	11
2008-09	210	-20	20	80	120	15	.	10	20	28
2009-10	210	30	20	40	120	16	11	11	10	28
2010/11	190	50	30	80	30	14	19	15	19	7
2011/12	80	20	10	10	40	6	6	5	2	8
2012/13	160	0	20	30	120	11	.	7	6	24
2013/14	150	10	-10	70	90	11	3	.	18	19
2014/15	310	10	40	130	140	23	6	17	33	28
2015/16	190	20	70	60	40	14	8	30	17	7
2016/17 (P)	180	20	30	20	100	13	9	16	4	20

Clackmannanshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	0	-10	0	0	10	2	.	7	.	36
2008-09	80	10	10	30	30	50	26	27	66	67
2009-10	10	0	10	-10	10	9	10	57	.	21
2010/11	10	0	0	0	10	5	.	3	.	24
2011/12	0	0	0	0	0	1	.	.	2	5
2012/13	20	0	0	20	0	8	2	.	31	.
2013/14	-10	-10	-10	0	0	.	.	.	.	5
2014/15	40	0	0	20	30	26	2	.	38	66
2015/16	20	10	0	10	0	13	34	0	12	8
2016/17 (P)	20	0	10	-10	20	12	4	23	.	35

Dumfries & Galloway

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	90	30	10	30	20	16	37	7	13	15
2008-09	140	20	30	40	40	25	23	29	25	24
2009-10	100	10	10	30	50	18	12	12	17	27
2010/11	50	20	10	10	20	8	17	7	4	9
2011/12	20	-20	-20	10	40	3	.	.	6	19
2012/13	40	0	-10	20	40	7	.	.	10	18
2013/14	110	20	30	20	40	19	24	28	10	21
2014/15	160	10	30	50	60	26	18	23	28	29
2015/16	130	20	30	20	50	23	30	28	13	27
2016/17 (P)	130	-10	30	60	50	22	.	29	34	21

Dundee

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	60	-20	30	20	30	10	.	25	10	21
2008-09	90	10	0	50	20	17	10	4	32	16
2009-10	110	20	20	30	40	20	16	17	18	28
2010/11	50	0	10	20	30	8	.	5	11	17
2011/12	70	-10	10	40	20	12	.	12	23	15
2012/13	80	10	0	30	50	16	11	.	18	29
2013/14	40	10	20	10	0	8	10	20	7	2
2014/15	150	20	20	70	40	28	17	23	44	23
2015/16	90	30	10	20	30	17	23	11	15	19
2016/17 (P)	150	20	10	60	70	29	14	15	37	39

Table 6, continued

East Ayrshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	30	-10	-10	10	30	6	.	.	8	28
2008-09	110	10	20	40	40	27	13	24	31	38
2009-10	40	20	-10	30	10	10	19	.	21	8
2010/11	80	10	20	20	20	18	12	26	17	18
2011/12	20	0	0	20	-10	5	4	3	16	.
2012/13	20	-50	0	40	30	5	.	.	32	23
2013/14	60	30	20	10	0	14	32	20	9	2
2014/15	130	10	10	40	70	29	13	7	29	59
2015/16	40	0	20	20	10	8	.	20	12	4
2016/17 (P)	90	20	20	10	40	19	19	24	6	32

East Dunbartonshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	70	20	10	30	10	22	43	20	25	7
2008-09	70	10	0	20	30	23	20	8	21	36
2009-10	30	0	-10	20	10	8	1	.	20	13
2010/11	70	10	10	30	20	23	19	15	34	20
2011/12	-10	0	-20	10	0	.	.	.	12	.
2012/13	80	0	0	30	50	24	6	.	30	46
2013/14	30	0	10	10	10	9	.	11	9	13
2014/15	60	0	10	20	40	18	.	10	15	33
2015/16	100	20	10	20	50	29	40	21	18	37
2016/17 (P)	50	0	-10	20	40	15	7	.	15	28

East Lothian

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	20	10	-20	10	20	7	19	.	9	17
2008-09	60	10	20	20	10	19	18	30	22	11
2009-10	80	10	10	20	40	26	27	16	23	35
2010/11	60	10	0	30	30	21	9	.	35	30
2011/12	50	10	10	20	20	15	18	9	17	14
2012/13	30	0	0	20	20	9	.	1	18	12
2013/14	50	20	0	10	20	16	44	2	14	14
2014/15	80	10	0	30	50	25	14	.	28	41
2015/16	40	0	20	0	20	11	1	39	.	14
2016/17 (P)	70	10	20	0	40	20	10	31	5	33

East Renfrewshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	50	20	0	20	10	18	44	.	23	13
2008-09	30	10	0	10	20	11	11	4	6	18
2009-10	40	10	-10	20	20	14	19	.	21	20
2010/11	50	0	10	0	40	19	.	18	3	50
2011/12	-10	0	0	10	-10	.	.	.	9	.
2012/13	30	0	0	10	20	11	.	0	8	23
2013/14	20	-10	10	10	0	6	.	26	17	1
2014/15	90	20	10	30	30	33	47	20	38	30
2015/16	40	10	0	10	20	16	41	7	13	14
2016/17 (P)	10	-10	10	-10	20	3	.	19	.	15

Table 6, continued

Falkirk

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	30	10	0	20	10	7	5	.	13	7
2008-09	90	10	20	10	50	19	14	18	6	43
2009-10	60	10	10	10	30	12	15	12	5	18
2010/11	100	30	20	20	20	19	34	21	14	15
2011/12	60	10	-10	20	30	13	11	.	14	24
2012/13	40	10	-10	20	30	8	7	.	9	18
2013/14	40	10	0	0	30	9	10	2	.	24
2014/15	130	0	20	40	70	26	2	22	22	48
2015/16	90	20	-10	60	20	17	18	.	41	14
2016/17 (P)	30	0	-10	20	20	6	3	.	10	11

Fife

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	210	10	10	80	110	17	3	3	21	33
2008-09	280	10	60	80	130	23	6	25	21	36
2009-10	190	30	40	60	60	16	14	17	16	16
2010/11	90	30	-10	50	20	7	13	.	12	6
2011/12	120	20	50	-10	60	10	8	23	.	15
2012/13	140	-10	60	30	70	11	.	27	7	16
2013/14	40	0	-10	0	50	3	2	.	1	13
2014/15	250	0	30	90	130	20	2	14	24	31
2015/16	230	30	40	110	50	18	15	17	30	12
2016/17 (P)	160	0	30	60	70	12	.	11	16	16

Glasgow

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	250	20	0	130	90	11	4	0	20	17
2008-09	460	40	110	140	160	22	8	27	22	33
2009-10	300	80	30	100	90	15	16	6	17	19
2010/11	280	100	0	80	100	14	19	0	13	20
2011/12	220	50	40	50	80	11	11	11	7	14
2012/13	240	30	30	80	90	12	6	8	13	18
2013/14	180	-10	40	70	80	9	.	11	12	15
2014/15	410	70	90	130	120	20	15	23	23	20
2015/16	260	30	50	90	100	13	6	13	15	18
2016/17 (P)	340	40	40	100	150	17	8	11	17	29

Highland

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	40	0	0	-10	50	5	2	1	.	23
2008-09	100	-10	40	40	30	14	.	29	18	17
2009-10	140	30	20	20	70	20	25	14	10	31
2010/11	100	20	30	20	30	13	10	22	10	13
2011/12	50	10	-10	20	30	7	8	.	10	12
2012/13	90	0	10	40	40	12	2	5	19	15
2013/14	70	-10	20	20	40	10	.	12	9	17
2014/15	70	-40	10	30	60	8	.	8	12	22
2015/16	220	40	50	40	90	30	31	36	21	35
2016/17 (P)	120	0	20	40	70	15	.	14	15	23

Table 6, continued

Inverclyde

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	70	10	20	10	20	21	12	41	12	29
2008-09	50	10	0	10	30	16	15	.	9	41
2009-10	30	10	10	0	0	8	17	23	1	.
2010/11	50	0	20	10	20	16	.	33	10	26
2011/12	0	0	-10	-10	10	.	4	.	.	9
2012/13	40	20	-10	0	30	15	56	.	4	29
2013/14	20	20	10	-10	0	7	22	23	.	.
2014/15	100	0	30	40	40	33	4	50	37	39
2015/16	60	20	10	10	10	18	40	24	9	10
2016/17 (P)	40	0	0	20	20	11	.	.	26	15

Midlothian

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	30	-10	20	20	0	10	.	35	24	.
2008-09	30	10	10	10	0	10	10	15	15	3
2009-10	-10	-10	-10	20	-10	.	.	.	24	.
2010/11	10	0	0	0	10	5	1	.	4	16
2011/12	40	20	0	0	10	16	52	5	1	18
2012/13	20	0	10	20	-10	7	.	22	29	.
2013/14	30	0	10	10	0	10	7	16	18	2
2014/15	40	10	0	0	30	15	26	.	2	35
2015/16	40	10	20	0	10	15	18	47	1	10
2016/17 (P)	10	-10	0	10	10	2	.	3	13	5

Moray

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	60	10	0	20	30	21	11	7	22	36
2008-09	50	0	20	10	30	17	.	31	6	34
2009-10	70	0	20	20	30	24	5	32	19	38
2010/11	50	10	10	10	10	15	23	19	10	13
2011/12	20	10	-10	0	10	7	28	.	0	13
2012/13	10	10	0	-10	10	4	12	8	.	10
2013/14	70	10	10	30	20	23	18	11	29	25
2014/15	90	0	20	20	50	30	4	32	23	44
2015/16	70	0	10	20	40	21	.	18	18	37
2016/17 (P)	60	0	0	20	50	19	.	.	22	44

Na h-Eileanan Siar

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	10	10	0	20	-10	5	23	.	48	.
2008-09	10	-10	0	20	-10	8	.	12	61	.
2009-10	40	10	10	20	0	35	53	29	84	.
2010/11	0	0	0	0	-10	.	.	24	3	.
2011/12	30	10	10	0	10	20	53	22	.	29
2012/13	20	10	10	0	10	15	52	37	.	15
2013/14	-10	0	-10	10	0	.	.	.	21	.
2014/15	30	20	0	10	10	31	94	17	30	14
2015/16	40	10	10	10	10	38	44	59	27	32
2016/17 (P)	30	0	10	10	10	31	24	35	29	34

Table 6, continued

North Ayrshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	80	0	30	10	50	15	4	27	3	33
2008-09	130	0	40	60	30	25	.	37	43	22
2009-10	60	-20	20	30	20	12	.	22	19	18
2010/11	60	20	10	20	20	13	20	12	9	12
2011/12	20	-10	0	30	0	4	.	3	20	0
2012/13	80	0	20	30	20	15	2	21	20	15
2013/14	10	0	-10	0	30	2	.	.	2	19
2014/15	100	-20	10	70	30	19	.	9	45	20
2015/16	50	0	20	40	0	10	0	14	24	1
2016/17 (P)	70	-10	10	10	60	14	.	14	8	36

North Lanarkshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	150	-10	40	100	30	14	.	17	31	11
2008-09	230	40	50	110	30	22	17	21	33	13
2009-10	280	80	50	120	40	27	32	22	37	15
2010/11	180	50	50	30	50	17	20	21	9	20
2011/12	120	40	-10	40	50	11	15	.	12	19
2012/13	190	20	40	70	60	17	10	16	21	22
2013/14	70	-10	20	40	30	7	.	7	12	11
2014/15	230	20	70	70	80	20	8	29	19	27
2015/16	200	10	60	60	60	18	5	28	18	22
2016/17 (P)	210	50	40	50	80	19	19	15	13	28

Orkney

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	0	0	-10	10	0	1	16	.	30	13
2008-09	10	0	10	-10	10	14	9	42	.	51
2009-10	0	0	0	0	0	.	9	.	8	.
2010/11	10	10	0	10	0	19	58	.	37	11
2011/12	-10	0	0	-10	0	.	5	4	.	19
2012/13	10	0	0	0	0	9	8	.	13	15
2013/14	10	10	0	0	-10	11	100	14	10	.
2014/15	10	0	0	10	10	17	27	.	33	24
2015/16	0	0	0	10	0	6	4	8	41	.
2016/17 (P)	0	0	10	-10	0	.	4	46	.	.

Perth & Kinross

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	70	0	20	20	30	14	5	23	11	18
2008-09	70	10	-10	10	50	14	19	.	8	29
2009-10	100	20	10	40	40	21	22	14	26	21
2010/11	150	10	40	50	40	32	19	54	42	23
2011/12	70	10	20	20	30	15	12	20	11	17
2012/13	40	0	-10	20	30	7	2	.	9	17
2013/14	20	-10	-10	30	10	3	.	.	20	3
2014/15	160	20	20	40	90	33	20	29	26	46
2015/16	100	30	-10	10	60	19	36	.	9	35
2016/17 (P)	80	20	10	10	50	15	22	6	8	23

Table 6, continued

Renfrewshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	80	-20	30	30	30	13	.	29	18	21
2008-09	90	20	10	10	50	15	17	10	4	32
2009-10	80	10	20	40	10	12	9	13	18	8
2010/11	20	-10	30	20	-10	4	.	23	9	.
2011/12	30	0	0	0	30	5	2	0	.	15
2012/13	0	-10	0	-20	30	0	.	1	.	16
2013/14	50	10	20	10	-10	8	14	21	7	.
2014/15	160	0	30	30	100	26	1	23	14	57
2015/16	50	40	-10	10	10	8	38	.	5	6
2016/17 (P)	80	0	0	40	50	12	0	.	19	23

Scottish Borders

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	80	20	10	0	40	19	32	19	0	36
2008-09	100	10	20	40	30	24	15	23	34	21
2009-10	50	-10	10	20	30	12	.	9	18	25
2010/11	70	10	20	10	30	19	21	39	6	22
2011/12	40	-10	20	20	10	9	.	26	19	4
2012/13	70	0	-10	40	40	16	.	.	31	24
2013/14	10	-10	-10	10	20	3	.	.	11	11
2014/15	120	10	20	30	60	28	23	30	19	36
2015/16	70	0	20	20	30	19	5	31	19	19
2016/17 (P)	60	10	20	0	20	14	21	28	3	14

Shetland

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	10	0	0	10	0	10	4	.	50	5
2008-09	0	-10	0	0	10	2	.	29	.	28
2009-10	10	0	0	0	10	17	29	.	12	28
2010/11	10	0	0	10	0	17	36	25	43	.
2011/12	-10	0	0	0	0	.	.	.	.	.
2012/13	0	-10	0	10	0	.	.	13	44	.
2013/14	0	0	0	0	10	6	3	.	.	54
2014/15	20	0	0	10	10	23	10	.	32	45
2015/16	10	0	0	10	0	8	36	.	26	.
2016/17 (P)	10	0	0	0	10	17	38	26	.	37

South Ayrshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	30	-10	10	20	10	6	.	8	13	8
2008-09	140	20	-10	70	60	34	26	.	52	49
2009-10	90	10	0	40	40	21	21	1	29	27
2010/11	60	-10	0	30	50	14	.	.	18	37
2011/12	30	-10	20	20	0	6	.	25	12	.
2012/13	50	10	-10	0	40	10	14	.	1	25
2013/14	80	20	0	10	50	19	40	5	6	34
2014/15	70	20	10	10	30	15	31	17	3	17
2015/16	90	0	20	40	20	20	5	26	34	13
2016/17 (P)	80	0	0	10	80	19	.	.	8	52

Table 6, continued

South Lanarkshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	130	-10	10	90	40	12	.	2	28	13
2008-09	290	40	50	100	100	31	21	25	32	40
2009-10	180	30	20	50	90	18	15	7	15	32
2010/11	160	10	20	60	70	16	3	11	18	26
2011/12	100	20	0	20	60	9	8	.	7	18
2012/13	110	0	30	40	50	10	1	12	10	15
2013/14	140	40	-20	40	80	13	20	.	12	24
2014/15	280	0	50	100	130	25	.	25	28	39
2015/16	160	20	40	40	70	15	9	19	11	20
2016/17 (P)	130	20	-10	60	60	11	11	.	17	16

Stirling

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	70	20	0	20	30	30	58	.	32	38
2008-09	110	20	10	50	30	46	33	34	73	36
2009-10	30	10	-10	0	30	11	16	.	.	37
2010/11	30	0	10	10	10	13	.	22	12	17
2011/12	0	-10	0	10	-10	.	.	1	17	.
2012/13	30	0	-10	0	40	11	11	.	1	43
2013/14	40	-10	10	30	10	15	.	22	40	10
2014/15	60	20	0	0	30	22	56	4	4	35
2015/16	40	0	0	30	0	12	9	.	33	4
2016/17 (P)	20	0	0	0	10	6	5	6	6	8

West Dunbartonshire

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	60	0	20	10	30	17	2	29	4	41
2008-09	50	10	10	0	20	13	18	12	1	22
2009-10	70	0	20	20	20	22	6	36	22	30
2010/11	80	30	30	0	30	26	53	45	.	30
2011/12	20	-10	10	10	20	5	.	12	7	18
2012/13	10	-10	0	-10	30	3	.	.	.	33
2013/14	10	-10	10	10	10	4	.	8	5	7
2014/15	130	20	20	40	50	37	19	25	42	57
2015/16	50	-10	0	40	10	14	.	.	52	15
2016/17 (P)	20	0	0	10	10	6	0	2	7	12

Table 6, continued

West Lothian

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2007-08	10	-10	20	0	0	3	.	26	2	.
2008-09	120	30	20	60	10	28	27	26	42	12
2009-10	90	10	40	20	30	22	7	37	18	29
2010/11	120	40	20	40	30	29	33	19	33	28
2011/12	40	30	-10	10	20	9	30	.	3	15
2012/13	80	0	20	40	20	17	1	22	25	18
2013/14	50	10	0	20	20	12	13	2	11	19
2014/15	40	0	20	0	20	9	0	20	3	13
2015/16	60	20	0	10	20	12	17	4	9	16
2016/17 (P)	70	10	10	20	20	14	15	11	14	15

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods. A negative figure occurs when there were fewer deaths during the winter period than the average of the two 'non-winter' periods.

2) Because of the approximate nature of this measure, numbers have been rounded independently to the nearest 10. The sum of the age group figures may therefore appear to differ from the 'all ages' total.

3) The Increased Winter Mortality (IWM) Index is the (unrounded) number of 'additional' winter deaths divided by the (unrounded) average number of deaths in a four month 'non-winter' period, expressed as a percentage.

4) The IWM Index has not been calculated when the number of 'additional' winter deaths was negative.

5) The alphabetical order of the council areas has changed due to adoption of the preferred form of reference to the Edinburgh council area. Previous versions of this table used the form 'Edinburgh'. The preferred form is 'City of Edinburgh'.

(P) Data for the latest year are provisional.

Table 7: The Seasonal Increase in Mortality in the Winter - the underlying numbers of registrations of deaths, by Local Authority area of usual residence, 2013/14 to 2016/17

Local Authority	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
Aberdeen City						
	2013/14	767	630	681	112	110
	2014/15	858	685	710	161	160
	2015/16	763	670	666	95	100
	2016/17 provisional	746	712	670	55	60
Aberdeenshire						
	2013/14	786	740	720	56	60
	2014/15	935	738	781	176	180
	2015/16	866	774	743	108	110
	2016/17 provisional	914	750	749	165	160
Angus						
	2013/14	437	399	430	23	20
	2014/15	539	420	422	118	120
	2015/16	500	405	483	56	60
	2016/17 provisional	538	439	421	108	110
Argyll & Bute						
	2013/14	356	320	321	36	40
	2014/15	435	355	381	67	70
	2015/16	406	363	314	68	70
	2016/17 provisional	411	376	299	74	70
City of Edinburgh ²						
	2013/14	1,438	1,290	1,290	148	150
	2014/15	1,664	1,352	1,348	314	310
	2015/16	1,572	1,354	1,414	188	190
	2016/17 provisional	1,527	1,380	1,320	177	180
Clackmannanshire						
	2013/14	155	174	163	-14	-10
	2014/15	203	164	158	42	40
	2015/16	200	176	179	23	20
	2016/17 provisional	194	175	172	21	20
Dumfries & Galloway						
	2013/14	697	554	615	113	110
	2014/15	746	579	602	156	160
	2015/16	701	556	587	130	130
	2016/17 provisional	723	567	617	131	130

Table 7, continued

Local Authority	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
Dundee						
	2013/14	525	466	502	41	40
	2014/15	688	526	549	151	150
	2015/16	626	541	528	92	90
	2016/17 provisional	690	516	556	154	150
East Ayrshire						
	2013/14	505	438	451	61	60
	2014/15	571	425	462	128	130
	2015/16	465	416	443	36	40
	2016/17 provisional	551	495	430	89	90
East Dunbartonshire						
	2013/14	356	325	330	29	30
	2014/15	405	362	326	61	60
	2015/16	435	321	354	98	100
	2016/17 provisional	401	339	360	52	50
East Lothian						
	2013/14	373	314	331	51	50
	2014/15	405	318	328	82	80
	2015/16	364	338	316	37	40
	2016/17 provisional	397	330	330	67	70
East Renfrewshire						
	2013/14	299	286	277	18	20
	2014/15	373	284	276	93	90
	2015/16	311	263	272	44	40
	2016/17 provisional	312	286	319	10	10
Falkirk						
	2013/14	514	479	464	43	40
	2014/15	625	481	513	128	130
	2015/16	612	517	526	91	90
	2016/17 provisional	600	605	530	33	30
Fife						
	2013/14	1,217	1,174	1,179	41	40
	2014/15	1,493	1,186	1,295	253	250
	2015/16	1,477	1,208	1,285	231	230
	2016/17 provisional	1,501	1,293	1,384	163	160

Table 7, continued

Local Authority	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
Glasgow						
	2013/14	2,179	1,992	2,009	179	180
	2014/15	2,462	1,964	2,132	414	410
	2015/16	2,261	1,955	2,040	264	260
	2016/17 provisional	2,352	2,006	2,028	335	340
Highland						
	2013/14	785	687	746	69	70
	2014/15	887	756	887	66	70
	2015/16	946	774	679	220	220
	2016/17 provisional	935	815	817	119	120
Inverclyde						
	2013/14	325	292	317	21	20
	2014/15	402	296	308	100	100
	2015/16	363	300	315	56	60
	2016/17 provisional	391	339	365	39	40
Midlothian						
	2013/14	290	253	273	27	30
	2014/15	325	272	295	42	40
	2015/16	303	261	264	41	40
	2016/17 provisional	303	289	306	6	10
Moray						
	2013/14	352	299	275	65	70
	2014/15	399	298	318	91	90
	2015/16	387	342	298	67	70
	2016/17 provisional	368	312	306	59	60
Na h-Eileanan Siar						
	2013/14	104	99	126	-9	-10
	2014/15	145	105	117	34	30
	2015/16	138	91	109	38	40
	2016/17 provisional	141	111	104	34	30
North Ayrshire						
	2013/14	528	502	530	12	10
	2014/15	638	509	564	102	100
	2015/16	573	543	497	53	50
	2016/17 provisional	582	520	500	72	70

Table 7, continued

Local Authority	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
North Lanarkshire						
	2013/14	1,137	1,047	1,081	73	70
	2014/15	1,379	1,119	1,170	235	230
	2015/16	1,292	1,151	1,036	199	200
	2016/17 provisional	1,354	1,170	1,111	214	210
Orkney						
	2013/14	76	68	69	8	10
	2014/15	78	57	76	12	10
	2015/16	75	67	75	4	0
	2016/17 provisional	82	77	91	-2	0
Perth & Kinross						
	2013/14	499	508	460	15	20
	2014/15	655	493	491	163	160
	2015/16	600	526	481	97	100
	2016/17 provisional	615	524	542	82	80
Renfrewshire						
	2013/14	629	544	624	45	50
	2014/15	775	612	620	159	160
	2015/16	699	633	657	54	50
	2016/17 provisional	739	689	630	80	80
Scottish Borders						
	2013/14	414	372	431	13	10
	2014/15	569	439	451	124	120
	2015/16	467	382	405	74	70
	2016/17 provisional	476	420	416	58	60
Shetland						
	2013/14	69	66	64	4	0
	2014/15	96	74	82	18	20
	2015/16	84	87	68	7	10
	2016/17 provisional	85	78	67	13	10
South Ayrshire						
	2013/14	519	458	414	83	80
	2014/15	543	464	482	70	70
	2015/16	549	477	437	92	90
	2016/17 provisional	527	445	444	83	80

Table 7, continued

Local Authority	Period	Number of deaths registered			Seasonal Increase in Mortality in the Winter (or seasonal difference) ¹	
		Winter (Dec - Mar)	Preceding period (Aug - Nov)	Following period (Apr - Jul)	(actual)	(rounded)
South Lanarkshire						
	2013/14	1,168	1,015	1,045	138	140
	2014/15	1,372	1,057	1,134	277	280
	2015/16	1,257	1,054	1,132	164	160
	2016/17 provisional	1,257	1,124	1,140	125	130
Stirling						
	2013/14	333	290	289	44	40
	2014/15	349	271	303	62	60
	2015/16	322	287	287	35	40
	2016/17 provisional	282	273	258	17	20
West Dunbartonshire						
	2013/14	338	317	335	12	10
	2014/15	464	337	340	126	130
	2015/16	361	320	312	45	50
	2016/17 provisional	363	361	325	20	20
West Lothian						
	2013/14	505	450	455	53	50
	2014/15	535	495	489	43	40
	2015/16	534	473	484	56	60
	2016/17 provisional	573	519	488	70	70

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods. A negative figure occurs when there were fewer deaths during the winter period than the average of the two 'non-winter' periods.

2) The alphabetical order of the councils has changed due to adoption of the preferred form of reference to the Edinburgh council area. Previous versions of this table used the form 'Edinburgh'. The preferred form is 'City of Edinburgh'.

Table 8: Seasonal Increase in Mortality in the Winter and the Increased Winter Mortality Index, by age-group and underlying cause of death, Scotland, 2006/07 to 2016/17

Underlying cause of death⁵

Period

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	2,750	190	410	980	1,180	16	5	12	18	24
2007/08	2,180	130	320	880	850	12	3	9	16	17
2008/09	3,510	370	590	1,170	1,370	21	10	18	22	28
2009/10	2,760	460	370	890	1,040	16	13	11	17	21
2010/11	2,450	410	430	720	890	14	12	13	14	17
2011/12	1,420	230	110	440	650	8	7	3	8	12
2012/13	2,000	90	190	600	1,120	11	3	6	11	20
2013/14	1,600	140	210	530	730	9	4	6	10	14
2014/15	4,060	270	610	1,240	1,940	23	8	18	23	33
2015/16	2,850	450	530	910	970	16	13	16	17	17
2016/17 (P)	2,720	200	280	810	1,430	15	6	8	15	24

Coronary (ischaemic) Heart Disease (I20-I25)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	560	80	70	200	210	19	15	11	20	26
2007/08	290	0	100	140	50	10	.	16	14	7
2008/09	500	70	120	140	170	19	16	23	15	21
2009/10	550	90	130	190	140	22	22	25	22	18
2010/11	270	30	40	150	50	11	7	8	18	6
2011/12	180	40	40	90	20	7	9	7	11	3
2012/13	190	0	30	60	90	8	1	6	8	12
2013/14	220	20	60	90	60	10	6	14	12	8
2014/15	460	20	90	190	170	21	5	19	26	23
2015/16	340	60	70	90	120	16	16	16	14	17
2016/17 (P)	330	80	40	80	130	16	22	8	12	21

Cerebrovascular disease (I60-I69)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	310	-10	50	100	170	19	.	25	18	23
2007/08	280	10	30	110	140	17	6	11	19	20
2008/09	350	0	20	130	200	22	1	8	24	29
2009/10	290	20	40	110	130	19	13	20	21	19
2010/11	360	20	70	100	170	25	15	42	20	26
2011/12	90	0	0	70	30	7	.	.	14	5
2012/13	190	-10	-10	80	130	13	.	.	15	20
2013/14	140	10	0	50	90	10	6	.	10	15
2014/15	400	20	10	120	240	30	23	8	27	39
2015/16	210	20	50	60	80	17	16	30	15	14
2016/17 (P)	230	30	10	70	120	18	27	5	17	20

Other circulatory system diseases (other I00-I99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	140	0	30	50	60	11	.	12	13	14
2007/08	130	-10	20	70	40	11	.	10	19	10
2008/09	210	30	50	50	80	19	20	28	13	19
2009/10	190	30	30	70	60	17	20	14	20	14
2010/11	170	10	20	90	50	15	6	10	24	12
2011/12	80	10	0	40	30	6	6	0	10	6
2012/13	120	0	20	40	60	9	.	10	11	12
2013/14	150	10	10	30	110	12	3	5	8	23
2014/15	260	-10	50	80	140	19	.	23	18	25
2015/16	220	40	40	80	60	16	26	18	18	10
2016/17 (P)	270	40	40	90	110	20	19	18	22	18

Table 8, continued

Cancer (malignant neoplasms) (C00-C97)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	70	0	40	20	10	1	0	3	1	1
2007/08	50	30	-10	30	10	1	2	.	2	1
2008/09	290	10	60	170	50	6	1	5	11	6
2009/10	120	40	-20	50	50	2	4	.	3	6
2010/11	80	-20	60	10	20	2	.	4	1	3
2011/12	20	40	-40	-10	30	0	3	.	.	3
2012/13	-120	-20	-40	-30	-30	.	.	.	.	.
2013/14	50	10	20	20	0	1	1	1	1	0
2014/15	260	-20	110	90	70	5	.	7	5	7
2015/16	290	40	110	80	60	6	4	8	5	6
2016/17 (P)	120	20	20	10	70	2	2	2	0	7

Influenza and pneumonia (J09-J18)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	360	20	40	100	210	51	29	46	47	57
2007/08	350	20	30	100	210	53	33	46	47	60
2008/09	490	50	20	140	280	76	98	37	76	80
2009/10	280	20	20	60	180	41	28	35	30	51
2010/11	210	60	30	20	110	32	130	45	8	30
2011/12	180	10	20	50	100	28	16	38	30	27
2012/13	330	30	30	90	180	54	79	47	54	52
2013/14	130	20	20	30	60	24	54	39	19	20
2014/15	480	30	50	120	280	90	84	106	87	89
2015/16	320	60	40	100	130	65	134	77	88	44
2016/17 (P)	310	20	40	70	180	59	43	71	52	61

Chronic lower respiratory diseases (J40-J47)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	440	40	110	180	110	50	38	49	48	61
2007/08	310	40	50	150	70	35	40	24	39	39
2008/09	520	60	140	190	120	61	65	66	56	63
2009/10	360	70	70	140	90	44	74	31	42	46
2010/11	350	90	90	130	30	39	81	42	37	17
2011/12	240	20	40	90	80	25	22	17	24	37
2012/13	350	30	90	140	90	35	30	35	34	39
2013/14	200	20	60	70	40	21	18	25	21	19
2014/15	580	70	150	190	180	60	67	67	49	69
2015/16	410	90	120	160	50	42	83	48	42	18
2016/17 (P)	390	60	70	130	140	38	46	26	34	54

Other respiratory system diseases (other J00-J99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	170	10	10	50	90	31	16	13	30	43
2007/08	190	20	10	90	60	33	53	12	45	28
2008/09	230	20	20	70	120	43	40	35	37	53
2009/10	170	-10	20	70	90	33	.	20	44	42
2010/11	140	20	0	30	90	28	45	2	17	43
2011/12	110	0	10	40	50	19	.	17	23	22
2012/13	190	30	10	50	100	35	69	13	27	42
2013/14	90	10	20	40	20	16	15	32	21	8
2014/15	280	10	10	50	210	45	10	15	22	82
2015/16	150	30	50	20	50	25	86	63	11	17
2016/17 (P)	140	0	10	30	100	27	2	8	21	43

Table 8, continued

Dementia (F00-F03)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	210	0	10	60	130	30	80	29	27	31
2007/08	220	10	10	100	110	29	118	20	38	24
2008/09	370	20	20	120	220	50	300	37	52	48
2009/10	270	10	10	80	180	35	86	19	34	36
2010/11	210	0	10	60	140	24	.	31	22	26
2011/12	190	-10	10	40	150	18	.	16	13	21
2012/13	350	0	20	90	230	32	20	44	28	33
2013/14	230	0	10	90	130	21	.	16	29	19
2014/15	500	0	20	180	300	42	.	47	51	38
2015/16	320	0	20	100	200	30	25	38	35	27
2016/17 (P)	460	0	10	130	310	39	20	24	41	39

Other mental and behavioural disorders (F04-F99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	50	40	0	10	0	22	22	23	100	.
2007/08	10	-10	0	10	0	3	.	23	58	75
2008/09	60	60	0	10	0	26	26	10	85	.
2009/10	50	50	10	0	0	25	29	29	.	.
2010/11	-10	-10	0	10	0	.	.	.	88	17
2011/12	0	-10	20	-10	10	3	.	135	.	150
2012/13	10	0	10	0	0	8	.	45	16	57
2013/14	30	30	0	0	0	35	56	14	.	27
2014/15	20	10	10	0	0	11	5	22	23	13
2015/16	10	10	-10	0	10	6	8	.	.	118
2016/17 (P)	0	0	-10	10	0	.	.	.	45	.

Parkinson's, Alzheimer's and other degenerative nervous system diseases (G20-G32)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	70	0	10	40	10	24	25	22	41	10
2007/08	90	10	20	60	10	30	90	46	49	6
2008/09	90	0	10	40	30	28	24	33	37	21
2009/10	80	0	20	30	30	23	0	64	20	19
2010/11	90	0	10	30	40	23	4	36	21	23
2011/12	80	0	0	30	50	16	23	.	16	20
2012/13	180	-10	20	60	100	33	.	37	29	38
2013/14	90	0	0	30	60	17	.	7	18	20
2014/15	260	10	20	90	140	39	42	41	37	40
2015/16	150	0	20	60	70	20	0	22	23	18
2016/17 (P)	250	0	0	110	140	27	0	6	35	27

Other nervous system diseases (other G00-G99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	30	10	10	10	0	15	7	13	33	31
2007/08	50	20	20	0	0	23	20	43	7	26
2008/09	20	0	10	10	0	11	2	32	17	0
2009/10	40	20	20	0	0	19	15	48	2	.
2010/11	40	10	0	20	10	17	6	8	36	91
2011/12	30	30	-10	0	0	13	33	.	4	0
2012/13	20	0	10	10	0	8	.	9	26	17
2013/14	40	0	30	20	-10	20	4	58	38	.
2014/15	60	20	10	10	10	22	22	16	21	53
2015/16	10	10	0	0	0	4	11	.	.	13
2016/17 (P)	60	20	20	20	0	24	15	38	36	11

Table 8, continued

Certain infectious and parasitic diseases (A00-B99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	100	20	10	30	40	38	31	36	33	47
2007/08	30	0	10	0	20	11	3	14	3	21
2008/09	40	10	10	20	-10	13	12	33	26	.
2009/10	40	0	10	0	30	15	3	24	.	37
2010/11	40	0	10	10	20	16	9	14	18	20
2011/12	10	10	-10	0	20	6	20	.	.	19
2012/13	20	10	-10	-10	30	6	10	.	.	38
2013/14	30	0	0	0	30	15	6	.	.	49
2014/15	80	20	10	20	30	31	33	26	29	35
2015/16	50	10	20	10	0	21	33	66	16	.
2016/17 (P)	30	10	10	0	10	11	24	14	.	15

Endocrine, nutritional and metabolic diseases (E00-E90)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	60	20	0	30	10	20	31	6	24	13
2007/08	30	0	20	10	0	10	1	27	11	5
2008/09	40	10	20	0	10	13	12	42	.	12
2009/10	30	10	10	0	0	10	16	21	4	3
2010/11	70	10	0	20	40	22	17	3	20	57
2011/12	40	10	0	0	20	13	15	6	5	26
2012/13	70	20	10	10	20	22	32	18	14	27
2013/14	60	10	-10	20	40	19	11	.	19	56
2014/15	80	0	20	40	20	25	6	28	32	27
2015/16	100	30	20	30	20	29	35	31	26	26
2016/17 (P)	50	10	10	20	10	12	5	17	14	11

Digestive system diseases (K00-K93)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	90	0	10	50	30	9	1	7	23	13
2007/08	80	10	10	50	20	8	1	6	19	9
2008/09	130	40	30	10	50	13	11	17	4	26
2009/10	140	90	0	10	30	14	28	1	6	15
2010/11	110	100	10	-20	20	12	32	6	.	8
2011/12	50	30	10	0	10	5	9	6	0	3
2012/13	50	40	10	0	0	5	14	6	.	1
2013/14	30	-10	0	0	40	3	.	0	0	18
2014/15	100	20	20	30	30	10	8	9	11	13
2015/16	100	60	-20	40	20	10	23	.	15	10
2016/17 (P)	70	-30	20	30	50	7	.	8	11	19

Genitourinary system diseases (N00-N99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	70	0	10	20	40	18	.	23	15	22
2007/08	0	0	0	-10	20	1	4	.	.	10
2008/09	70	10	0	30	30	17	64	.	18	16
2009/10	30	0	0	10	20	8	14	6	5	10
2010/11	30	0	10	0	20	7	.	17	.	11
2011/12	20	0	0	0	20	6	6	.	4	11
2012/13	40	10	10	10	10	11	71	14	7	7
2013/14	50	0	0	10	30	13	.	9	12	17
2014/15	100	0	30	20	50	26	7	68	23	22
2015/16	70	0	10	20	40	19	12	25	18	20
2016/17 (P)	30	0	-10	10	20	10	8	.	14	14

Table 8, continued

Accidental falls (W00-W19)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	40	-10	0	20	20	19	.	14	36	24
2007/08	30	0	0	0	30	14	.	.	6	30
2008/09	20	0	10	10	10	8	.	50	11	5
2009/10	50	10	0	30	10	25	46	20	54	6
2010/11	30	-10	20	20	-10	15	.	175	39	.
2011/12	10	-10	10	0	10	6	.	50	3	7
2012/13	50	0	0	20	30	23	11	.	27	32
2013/14	10	0	-10	10	10	5	.	.	17	7
2014/15	20	0	20	0	10	9	.	114	.	6
2015/16	20	-10	10	10	20	9	.	27	8	13
2016/17 (P)	20	0	10	0	20	8	7	46	.	9

Other external causes of death (other V01-Y98)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	-30	-40	-10	0	10	.	.	.	8	65
2007/08	0	-10	10	0	10	0	.	17	.	38
2008/09	0	-30	0	10	20	.	.	7	32	69
2009/10	20	10	0	10	0	3	1	.	33	16
2010/11	120	70	20	10	10	22	16	54	37	71
2011/12	60	50	10	0	0	10	9	24	10	.
2012/13	-40	-40	0	-10	10	.	.	.	.	54
2013/14	40	20	10	10	10	7	4	15	21	38
2014/15	40	40	0	0	0	7	8	5	1	.
2015/16	-10	-20	0	0	10	.	.	.	5	43
2016/17 (P)	-10	-10	-10	-10	20	.	.	.	.	100

Ill-defined and unknown causes (R95-R99)

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	-20	-20	0	0	0	.	.	.	.	100
2007/08	0	0	0	0	0	5	.	14	33	180
2008/09	20	10	0	0	0	36	31	56	33	100
2009/10	0	10	-10	0	0	6	26	.	0	.
2010/11	10	10	0	0	0	24	16	60	100	33
2011/12	0	0	0	0	0	5	4	.	0	300
2012/13	10	10	0	0	0	28	25	8	400	.
2013/14	-10	-10	0	0	0	.	.	.	50	100
2014/15	-10	-10	-10	0	0	.	.	.	45	.
2015/16	0	-20	0	10	0	.	.	.	550	100
2016/17 (P)	-60	-50	-10	0	0	.	.	.	.	100

All other underlying causes of death

	Seasonal increase in mortality in the winter ^{1, 2}					Increased Winter Mortality Index ^{3, 4}				
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	40	20	0	10	10	9	18	5	7	4
2007/08	30	0	10	-10	30	6	1	15	.	17
2008/09	70	20	10	30	20	16	13	23	25	11
2009/10	50	0	10	20	20	10	.	19	22	10
2010/11	130	30	10	20	80	29	20	12	17	46
2011/12	30	10	0	0	30	7	4	.	2	14
2012/13	20	-20	0	-10	40	3	.	4	.	21
2013/14	20	10	-10	10	10	5	8	.	14	5
2014/15	120	40	-10	20	70	25	30	.	16	38
2015/16	100	30	10	40	20	21	23	8	41	13
2016/17 (P)	50	20	0	20	10	10	17	4	19	4

Table 8, continued

Circulatory system diseases (I00-I99), Respiratory system diseases (J00-J99), Dementia (F00-F03) and Parkinson's, Alzheimer's and other degenerative diseases (G20-G32)

	Seasonal increase in mortality in the winter ^{1, 2}					Percentage of total seasonal increase may exceed 100% due to negative 'increases' for some of the other causes				
	total of the rounded values for these causes of death									
	All ages	0-64	65-74	75-84	85+	All ages	0-64	65-74	75-84	85+
2006/07	2,260	140	330	780	990	82%	74%	80%	80%	84%
2007/08	1,860	100	270	820	690	85%	77%	84%	93%	81%
2008/09	2,760	250	400	880	1,220	79%	68%	68%	75%	89%
2009/10	2,190	230	340	750	900	79%	50%	92%	84%	87%
2010/11	1,800	230	270	610	680	73%	56%	63%	85%	76%
2011/12	1,150	70	120	450	510	81%	30%	109%	102%	78%
2012/13	1,900	70	210	610	980	95%	78%	111%	102%	88%
2013/14	1,250	90	180	430	570	78%	64%	86%	81%	78%
2014/15	3,220	150	400	1,020	1,660	79%	56%	66%	82%	86%
2015/16	2,120	300	410	670	760	74%	67%	77%	74%	78%
2016/17 (P)	2,380	230	220	710	1,230	88%	115%	79%	88%	86%

Footnotes

1) The 'Seasonal Increase in Mortality in the Winter' has been defined as the difference between the number of deaths in the four 'winter' months (December - March) and the average of the numbers of deaths in the preceding (August - November) and following (April - July) non-winter four-month periods. A negative figure occurs when there were fewer deaths during the winter period than the average of the two 'non-winter' periods.

2) Because of the approximate nature of this measure, numbers have been rounded independently to the nearest 10. The sum of the age group figures may therefore appear to differ from the 'all ages' total.

3) The Increased Winter Mortality (IWM) Index is the (unrounded) number of 'additional' winter deaths divided by the (unrounded) average number of deaths in a four month 'non-winter' period, expressed as a percentage.

4) The IWM Index has not been calculated when the number of 'additional' winter deaths was negative.

5) showing the relevant codes from the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). Changes in the cause of death coding software have caused breaks in the continuity of the figures for some causes of death between (a) 2009/10, 2010/11 and 2011/12, and (b) 2015/16, 2016/17 and (in due course) 2017/18. More information about this is available from paragraphs 2.8, 4.8 and 4.9.

(P) Data for the latest year are provisional.

Figure 1: Seasonal Increase in Mortality in the Winter, Scotland, 1951/52 to 2016/17

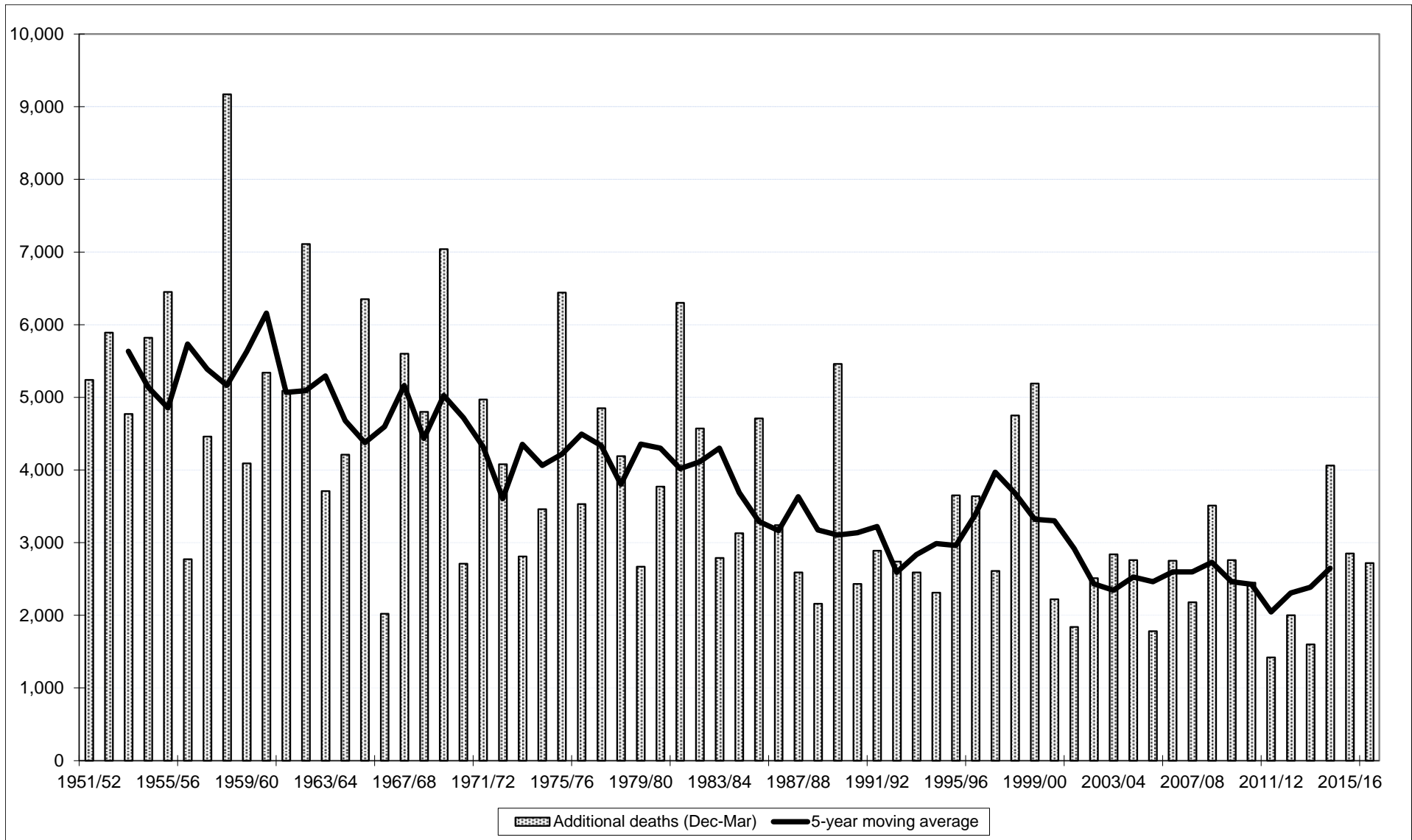
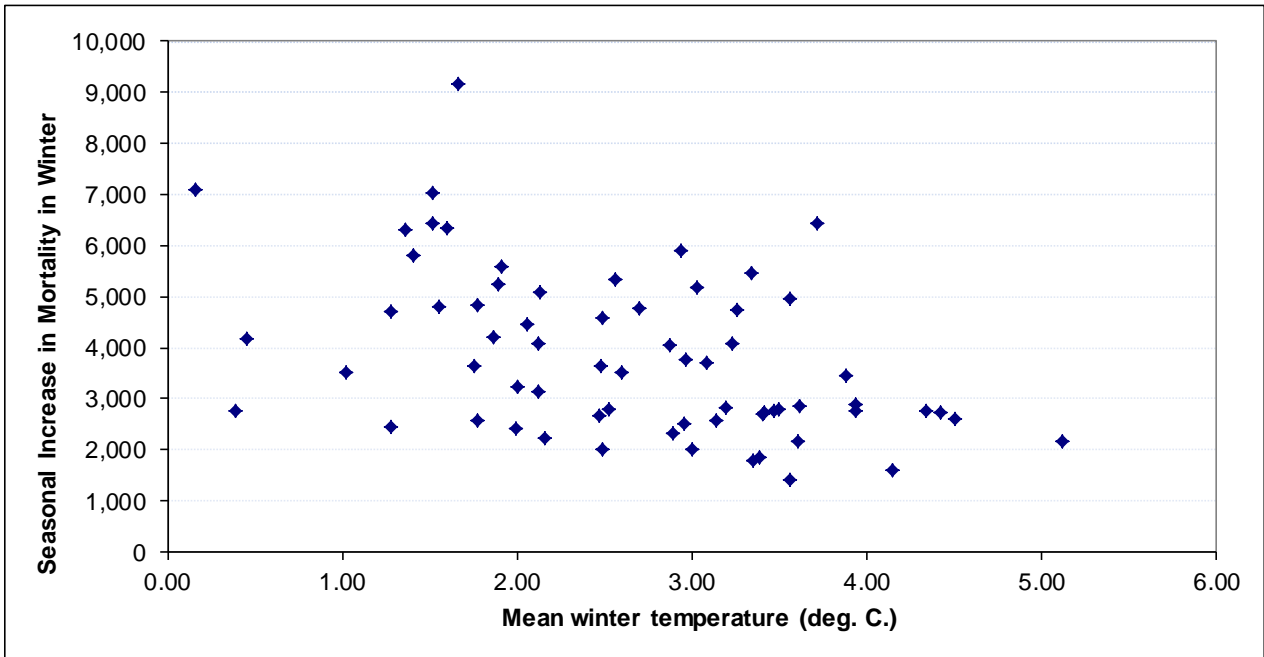


Figure 2: Seasonal Increase in Mortality in the Winter and mean winter temperature (deg.C.), Scotland: (a) winter 1951/52 to winter 2016/17; and (b) winter 1997/98 to winter 2016/17

(a) winter 1951/52 to winter 2016/17



(b) winter 1997/98 to winter 2016/17

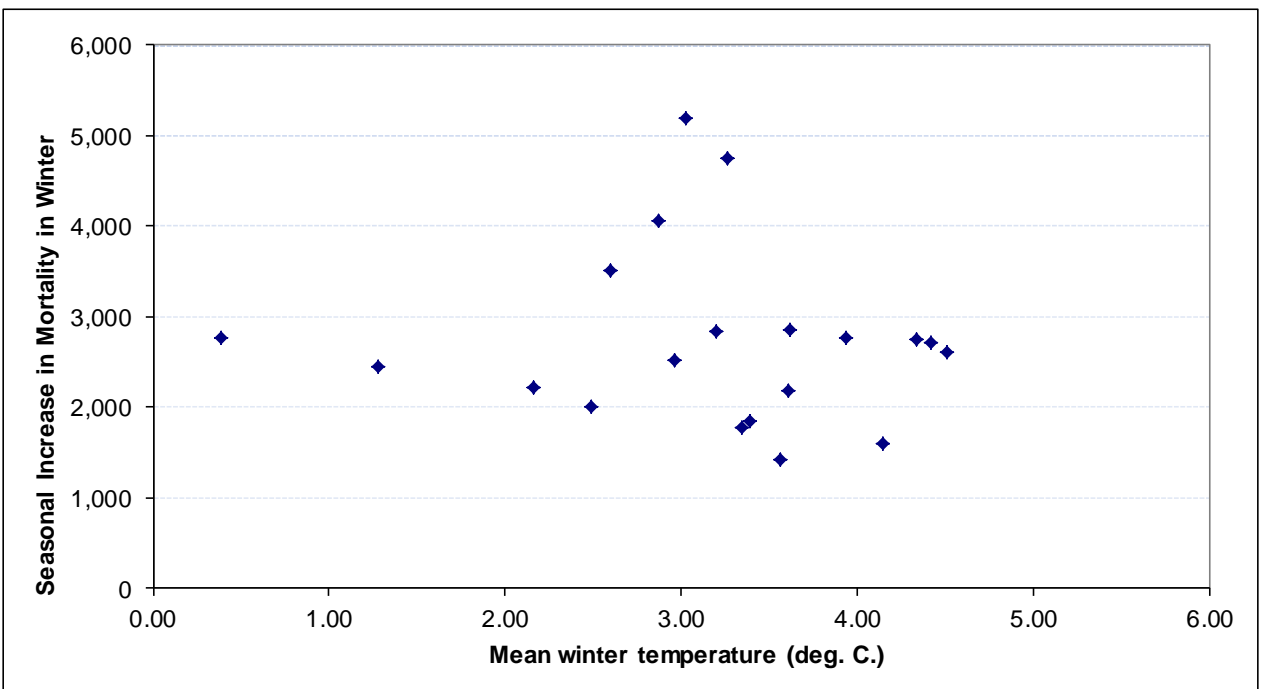
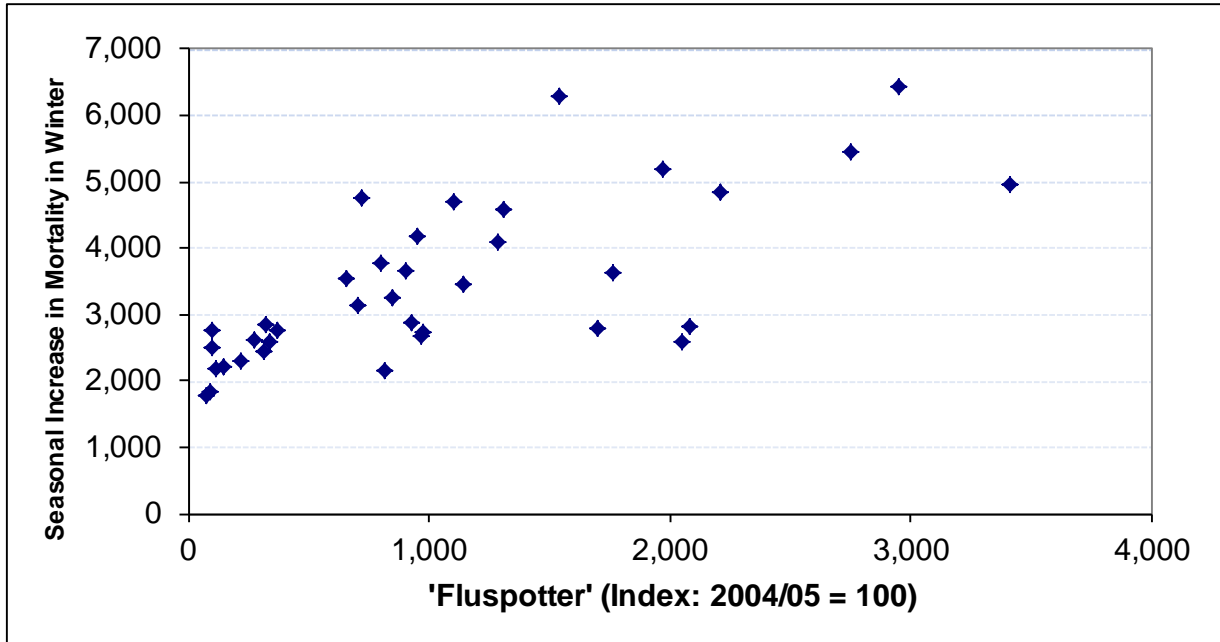


Figure 3: Seasonal Increase in Mortality in the Winter and indicators of influenza activity, Scotland: (a) winters and 'flu seasons - 1971/72 to 2007/08, inclusive; and (b) winters - 2003/04 to 2016/17, inclusive.

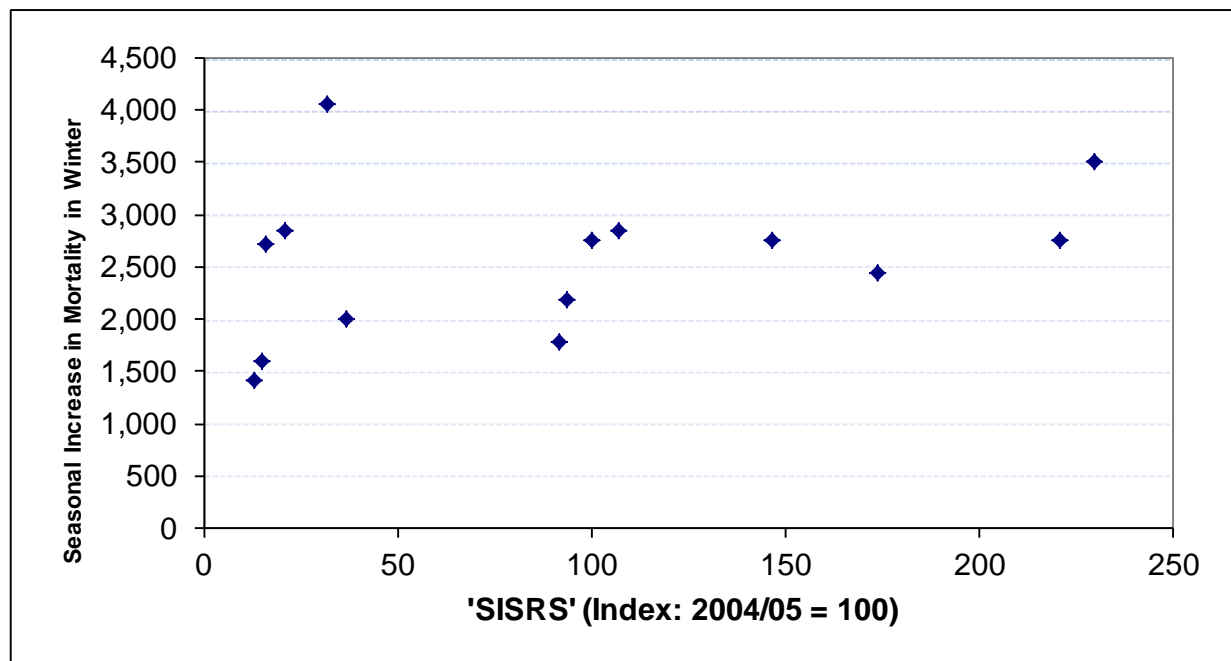
(a) winters and 'flu seasons' - 1971/72 to 2007/08, inclusive

NB: in that period, the maximum "fluspotter" index value was 3,412 for winter 1971/72 (see Table 2)



(b) winters - 2003/04 to 2016/17, inclusive

NB: in that period, the maximum "SISRS" index value was 230 for winter 2008/09 (see Table 2)



Notes on statistical publications

National Statistics

The UK Statistics Authority has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the [Code of Practice for Official Statistics](#) (available on the UK Statistics Authority website).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc can be found in the About this Publication document that is published alongside this publication on the NRS website.

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Where applicable, revisions will also be carried out in accordance with the [revisions policy for population, migration and life events](#) statistics available on the ONS website.

Enquiries and suggestions

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Organisation	Contact
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<p>The Office for National Statistics (ONS) is responsible for producing a wide range of economic and social statistics. It also carries out the Census of Population for England and Wales</p>	<p>Customer Contact Centre Office for National Statistics Room 1.101 Government Buildings Cardiff Road Newport NP10 8XG</p> <p>Phone: 0845 601 3034 Minicom: 01633 815044</p> <p>Email: info@statistics.gsi.gov.uk</p> <p>Website: www.ons.gov.uk/</p>
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