



Recent mortality trends in Glasgow: age- and gender-specific mortality compared with the rest of Scotland, 1981-2015

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Executive summary

Previous research has highlighted Scotland's poor health profile, showing that Scotland has higher mortality than other comparable western European countries and the rate of health improvement in Scotland has been slower than in other parts of the UK and Europe with similar histories of post-industrial decline. In Glasgow, life expectancy has increased over the past two decades, but remains notably lower than in Scotland as a whole, and compared with other Scottish and UK cities.

Method

This study focuses on mortality trends in the city in order to identify progress as well as issues of concern. This report presents analyses of cause-, age- and gender-specific mortality trends over a 35-year period comparing Glasgow with the rest of Scotland. For infant mortality (deaths in the first year of life) the mortality rate is expressed as deaths per 1,000 live births. In other age groups, the mortality rate is expressed as an age-standardised rate per 100,000 population – an approach which enables the mortality rate in different areas to be compared, having taken account of differences in the age structure of area populations.

For most causes and in most ages, there are differences in mortality rates between Glasgow and the rest of Scotland; in this report we refer to the difference between the two as the *mortality gap*. Specifically, this is the mortality rate in Glasgow expressed as a percentage of the mortality rate in the rest of Scotland. It is important because it provides a description of how much higher or lower mortality is in Glasgow compared with the rest of Scotland for particular age and gender groups, and for specific causes. Changes in the mortality gap can be tracked over time and these are reported on below.

Mortality trends by age

Between 1981 and 2015, all-cause mortality decreased in all age groups across Scotland, but mortality remained higher in Glasgow than in the rest of Scotland. Additionally, slower reductions in mortality led to a worsening of Glasgow's position relative to the rest of Scotland: the gap between Glasgow and the rest of Scotland widened for infant mortality (less than 1 year), child mortality (1-14 years) and for mortality among older adults (45-64 years, 65+ years). In contrast, more positively, the gap in mortality between Glasgow and the rest of Scotland narrowed for younger working-age adults (15-44 years). More detailed findings are described below.

Infant mortality trends (less than 1 year)

Infant deaths accounted for 0.3% of all deaths in Scotland in 2015. Between 1981-1985 and 2011-2015, the infant mortality rate decreased substantially across Scotland but slower reductions in Glasgow led to an increase in the mortality gap between Glasgow and the rest of Scotland. In 2011-2015, the infant mortality rate in Glasgow for both boys and girls was 25% higher than in the rest of Scotland.

Child mortality trends (1-14 years)

Deaths among children aged 1-14 accounted for 0.2% of all deaths in Scotland in 2015. Between 1981-1985 and 2011-2015, the all-cause mortality rate among 1-14 year olds decreased by 49% among girls and 62% among boys in Glasgow. However, mortality reductions were lower than in the rest of Scotland which led to a widening of the gap between Glasgow and the rest of Scotland. In 2011-2015, mortality rates in Glasgow were 47% higher for girls and 41% higher for boys than in the rest of Scotland. As with infant mortality, there is need for caution in interpreting the mortality rates for children, which are based on small numbers of deaths.

Mortality trends for younger working age adults (15-44 years)

Deaths among younger working-age adults (15-44 year olds) accounted for 3.3% of all Scottish deaths in 2015. In Glasgow, between 1981 and 2015, the all-cause mortality rate among younger working-age adults decreased by 25% for women and by 31% for men. The rate of decrease in mortality was lower in the rest of Scotland and consequently, while mortality rates in 2015 were still higher in Glasgow than in the rest of Scotland, the gap between the rates narrowed. In 2015, the mortality rate for Glaswegian women in this age group was 32% higher than in the rest of Scotland and among men the mortality rate was 18% higher in Glasgow. (By comparison, in 1981, mortality for women had been 49% higher in Glasgow and male mortality had been 34% higher than in the rest of Scotland.)

Comparing mortality among younger working-age adults between Glasgow and the rest of Scotland, there are two main features to note: all-cause mortality rates are higher for both males and females in Glasgow; and for the majority of specific causes, mortality rates are higher in Glasgow compared with the rest of Scotland. Nevertheless, there have been reductions in the mortality gap between Glasgow and the rest of Scotland for a range of causes of death, most notably for drug-related causes, alcohol-related causes, suicide, and cancer. This was, however, mainly due to large increases in deaths due to suicide, alcohol and drugs in the rest of Scotland, coupled with recent declines in these types of death in Glasgow.

Mortality trends for older working-age adults (45-64 years)

Deaths among people of older working age (aged 45-64 years) accounted for 13.8% of all Scottish deaths in 2015. In this age group, all-cause mortality rates decreased by 45% for both genders in Glasgow, but reductions were lower than in the rest of Scotland and this has led to an increased mortality gap between Glasgow and the rest of Scotland. In 2015, Glaswegian mortality rates in this age group were 37% higher for women and 72% higher for men than in the rest of Scotland. For both men and women and for each of the causes analysed, Glasgow had higher mortality than the rest of Scotland at the start of the period and for the majority of causes the mortality gap between Glasgow and the rest of Scotland widened over time. The gap was greater for men than for women and was particularly large with respect to male deaths caused by drugs (177% higher in Glasgow), respiratory diseases (141% higher) and alcohol (118% higher).

Mortality trends for older people (65 years and over)

Deaths among older people (aged 65 years and over) accounted for 82.4% of all Scottish deaths in 2015. Between 1981 and 2015, Glasgow's all-cause mortality rate in this age group fell by 24% among women and 35% among men. However, mortality reductions were relatively greater in the rest of Scotland, leading to a widening in the mortality gap between Glasgow and the rest of Scotland. In 2015, mortality in this age group was 17% higher for women in Glasgow, and 31% higher for men compared with the rest of Scotland. For most causes analysed, the gap in mortality – in this case describing higher mortality in Glasgow compared with the rest of Scotland – widened over time for both men and women in this age group.

Further explanation

There have been shifts in the burden of mortality over time. For example, the large increase in drug-related deaths (which is now the main cause of death among 15-44 year olds and rapidly rising as a cause of death among 45-64 year olds), cancer mortality replacing ischaemic heart disease mortality as the main cause of death among older adults and the increasing importance of respiratory disease

(particularly among women) as a cause of death in older age groups. These changes will have implications for prevention priorities and for health and social care particularly in the older population.

The study findings highlight the importance of taking a gendered perspective. The mortality gap between Glasgow and the rest of Scotland in the 15-44 years old age group is greater among women than men, while the reverse is true in older age groups (45-64 years and 65 years and over) with Glaswegian men having much higher mortality than men in the rest of Scotland.

It is notable that while mortality among men and women aged 15-44 is still higher in Glasgow compared with the rest of Scotland for most causes, recent relative improvements seen in Glasgow (particularly in terms of mortality due to alcohol, drugs and suicide) reduced the gap in this age group more than in any of the other age groups. The pattern of a more pronounced decline in drug- and alcohol-related deaths in recent years among younger adults (15-44) in Glasgow compared with the rest of Scotland, coupled with a rapid increase in drug-related mortality among older adults (45-64), particularly in Glasgow, may be partly explained by cohorts of individuals who were vulnerable to substance abuse as a consequence of societal influences during their young adulthood. As these cohorts get older, the age of death caused by substance abuse increases, and rates of mortality in the young adult age group subsequently declines. In a similar vein, a 'vulnerable cohort' effect driven by men in the most deprived areas of Scotland may also explain why suicide rates rose and fell more among men in Glasgow than in the rest of Scotland between 1981 and 2015. Campaigns such as 'Choose Life', suicide prevention strategies and preventive work carried out by health, social, third sector organisations are also likely to have had an impact.

However, the relatively positive recent trends in mortality among Glasgow's young working-age population need to be considered in the context of warnings about the potential impact of prolonged post-recession austerity policies and changes to social security, which may lead to a new population cohort vulnerable to suicide, and alcohol- and drug-related harm. Effective protective strategies for prevention and reduction of these problems need to be in place, if Glasgow's recent progress in relation to these 'diseases of despair' is not to be undone in the coming decades.

Finally, there are clear reasons to be concerned about mortality rates in the oldest age group (65 years and over) in which the all-cause mortality rate increased between 2014 and 2015. Underlying this overall increase were notable rises in mortality due to respiratory disease, ischaemic heart disease, cancer, cerebrovascular disease and external causes (mostly accidental falls in this age group). This worrying trend needs to be better understood and, as outlined in relation to the younger population, effective protective strategies are required to reduce the risks to health in this older population.

This study underlines the importance of a continued focus on health in Glasgow using up-to-date data and one that is informed by awareness of the historical context, the impacts of cohort effects, harms to health accumulating over the life-course and of the impacts of past and present policies and political contexts.

Introduction

Scotland and Glasgow's comparatively poor health profile has been thoroughly documented¹⁻⁴. Research comparing mortality trends over the last 25 years among various European regions has showed that mortality in Scotland is higher, and rates of improvement are slower, than in other areas in the UK and Europe that have similar histories, in terms of post-industrial decline. Since the late 1970s, Scotland has had the highest level of mortality among working-age men and women in Western Europe⁵.

While there have been notable improvements in Scottish mortality for a range of major conditions since the 1970s, there are still concerning trends. A study looking at Scottish mortality trends in a European context found that there had been no net improvement in all-cause mortality among the young Scottish working-age population (15-44 years of age) between the mid-1980s and 2012. The trend for this age group was especially pronounced in the Greater Glasgow and Clyde (GGC) area, where there was a clear rise in mortality in the 1990s, most notably among men (a 19% increase between 1991 and 2002⁶). These findings are in line with those of another study showing that that male premature mortality (deaths among men aged less than 75 years) in Scotland's persistently deprived areas rose by over 14% between the early 1990s and 2000s, and that this rise was mainly driven by the mortality in Glasgow⁷.

Analysis of trends since the early 1990s shows that life expectancy in Glasgow has improved at a rate similar to Scotland as a whole over the past two decades, but the average life expectancy is still considerably lower in Glasgow. After a period of stagnation during the 1990s, life expectancy for men in Glasgow improved towards 2012, narrowing the gap between Glaswegian men and men in Scotland as a whole. However, this improvement was not matched among Glaswegian women. In Glasgow, female life expectancy improved at a much slower rate, and particularly so in the more deprived areas of the city. While the gap in life expectancy between the most and least deprived areas in the city remained constant for men between 1995-1997 and 2010-2012, it widened for women.

The persistently higher mortality in Glasgow, after adjustment for deprivation, has been the subject of much debate. A recent research programme has identified the most likely underlying causes, highlighting a greater vulnerability in Glasgow's population caused by the cumulative effects of a series of adverse factors, events, processes and political decisions during the second half of the 20th century⁸.

There remains a need for monitoring of mortality trends in the city in relation to other comparable areas to identify progress as well as issues of concern. In addition, the contrasting trajectories of men and women in the city since the millennium warrant further exploration. This report presents analyses of the cause-, age- and gender-specific mortality trends over a 35-year period in the city and provides comparisons with mortality trends in the rest of Scotland. More detailed knowledge of the causes of death driving the different mortality patterns will help provide a better understanding of the factors that, on the one hand have led to relatively improved mortality statistics for Glaswegian men, and, on the other hand, relatively worse mortality statistics for Glasgow's most vulnerable women.

Methodology

This report is based on analyses of Scottish mortality records from 1981 to 2015, provided by the National Records of Scotland (NRS).

The mortality data were divided into five age groups: infants (<1 year); children (1-14 years); younger working age (15-44 years); older working age (45-64 years); and the elderly (65+ years). In each age group, the data were organised by gender, area (Glasgow versus the rest of Scotland, with the city defined by the boundaries of the Glasgow City Council area) and cause of death coded in accordance with the international classification of diseases (ICD-9 and ICD-10). Death records were only included in the analyses if there was a valid council area code, reflecting residence in Scotland.

Comparisons by gender and area were made in terms of the frequency of each cause of death (numbers of deaths), the cause-specific rate per 100,000 population (directly standardised using the 2013 European Standard Population (ESP)), and the change in rate from the earliest to the latest recorded year.

All-cause mortality rates for adults were calculated for single years, while cause-specific rates were calculated as five-year rolling averages to account for small numbers of deaths in single years and to provide smoother trends. Due to the small numbers of deaths among children (<15 years), all-cause mortality rates for children were calculated as five-year averages, and cause-specific mortality rates were not calculated.

For analysis of cause-specific mortality, numbers of deaths as well as age-standardised rates are reported. Trends in numbers of deaths from particular causes help show the changing burden of mortality due to different causes in specific age groups over time, and can help highlight where rates are based on relatively small numbers of deaths. The age-standardised mortality rates take account of changes in the size and age structure of the underlying populations of areas over time, and thus allow for relative comparisons of mortality between areas (i.e. between Glasgow and the rest of Scotland) and over time.

Comparisons of the size of the mortality gap between Glasgow and the rest of Scotland are made throughout the report. The mortality gap describes the difference in mortality, as measured by the age-standardised mortality rate, between Glasgow and the rest of Scotland by gender, age and cause. This is important because for most causes and ages, but not all, mortality is higher in Glasgow than in the rest of Scotland. Changes in the mortality gap over time are important as these tells us whether mortality rates for men and women in Glasgow are converging or diverging from those in the rest of Scotland (at different ages and for different causes).

The causes of death were categorised according to their relative distribution among infants, children and adults respectively. The strategy employed was to distinguish as many major causes with as much detail as possible while keeping the number of categories manageable and comparable with other studies. Table 1 shows the coding categories used.

A few points are worth noting in relation to the categories applied: in accordance with the statistical definition of NRS and ScotPHO, 'events of undetermined intent (ICD9:E98 / ICD10:Y10-Y34, Y872)' were included within the 'suicide or self-inflicted injury' category. This category (ICD9: E95 / ICD10: X60-X84, Y870) includes cases where it is clear from evidence left behind that the person's intention was suicide. It also includes cases where the evidence establishes that a person died as the result of self-inflicted injuries, even if it is not clear that suicide was the intention. 'Events of undetermined intent' are cases

where it is not clear whether the death was the result of intentional self-harm, an accident or an assault. Because it is estimated that most of the deaths which are classified as being the result of 'events of undetermined intent' are likely to be suicides, it is conventional practice to combine them with the 'suicide and self-inflicted injury' deaths for statistical purposes.

The categories used to estimate cause-specific mortality rates are not mutually exclusive, which means that there is some overlap, for example between 'external causes', 'suicide and self-inflicted injury', 'motor vehicle traffic accidents', and 'alcohol-' and 'drug-related' deaths. Confidence intervals for the cause-specific rates are not presented in this report but can be provided on request.

The categories of causes of death used for the purpose of analysing the relative contribution of each category to the total burden of mortality (Figures 2, 3, 6, 9, 10, 25, 26, 41, 42), are, however, mutually exclusive. In the categorisation, priority was given to the cause providing the most detail, i.e. cases that could be coded as 'motor vehicle traffic accident' or 'suicide and self-inflicted injury' were assigned as such, rather than as the less specific 'external causes'.

Table 1. Causes of death categories and associated ICD-codes.

Category	ICD-9	ICD-10
<i>Age <1</i>		
Infant prematurity	765	P07
Sudden infant death syndrome (SIDS)	798	R95
Hypoxia or respiratory failure in newborns	768-770	P21
Haemorrhagic or haematological disorders in newborns	772, 776	P50-P61
Digestive disorders in newborns	777	P76-P78
Infectious or congenital disorders of the respiratory system	460-519, 748	P22, P26-P28
Other perinatal infections	771	P35-P39
Congenital malformations, deformations and chromosomal abnormalities	740-759	Q00-Q99
Complications of placenta, cord and membrane	762	P01-P02
Birth trauma	767	P10-P15
Other cerebral damage in newborns	779.1, 779.2	P91
<i>Age 1+</i>		
Cancer	140-208	C00-C97
Respiratory disease	460-519	J00-J99
Cerebrovascular disease	430-438	I60-I69
External causes	E80-E99	V01-Y98
Suicide and self-inflicted injury	E95, E98	X60-X84, Y10-Y34, Y87
Motor vehicle traffic accidents	E81	V02-V04, V09, V12-V14, V19-V79, V86-V89
Meningitis/meningococcal infection	320-322, 036	A39, G00-G03
Metabolic and immunity disorders	270-279	E70-E88
Cerebral palsy (1-14 only)	343	G80
Sudden infant death syndrome (1-14 only)	798	R95
<i>Additional codes for age 15+</i>		
Ischaemic heart disease	410-414	I20-I25
Alcohol-related	291, 303, 305.0, 425.5, 571.0-571.5, 571.8-571.9, E860	F10, G312, G621, I426, K292, K70, K73, K740-K742, K746-K749, K860, X45, X65, Y15
Drug-related	304, 305.2-305.9, E850-E858, E950.0-E950.5, E9620, E980.0-E980.5	F11-F16, F18, F19, X40-X44, X60-X64, X85, Y10-Y14
Diabetes	250	E10-E14

Mortality trends

Infants (age<1)

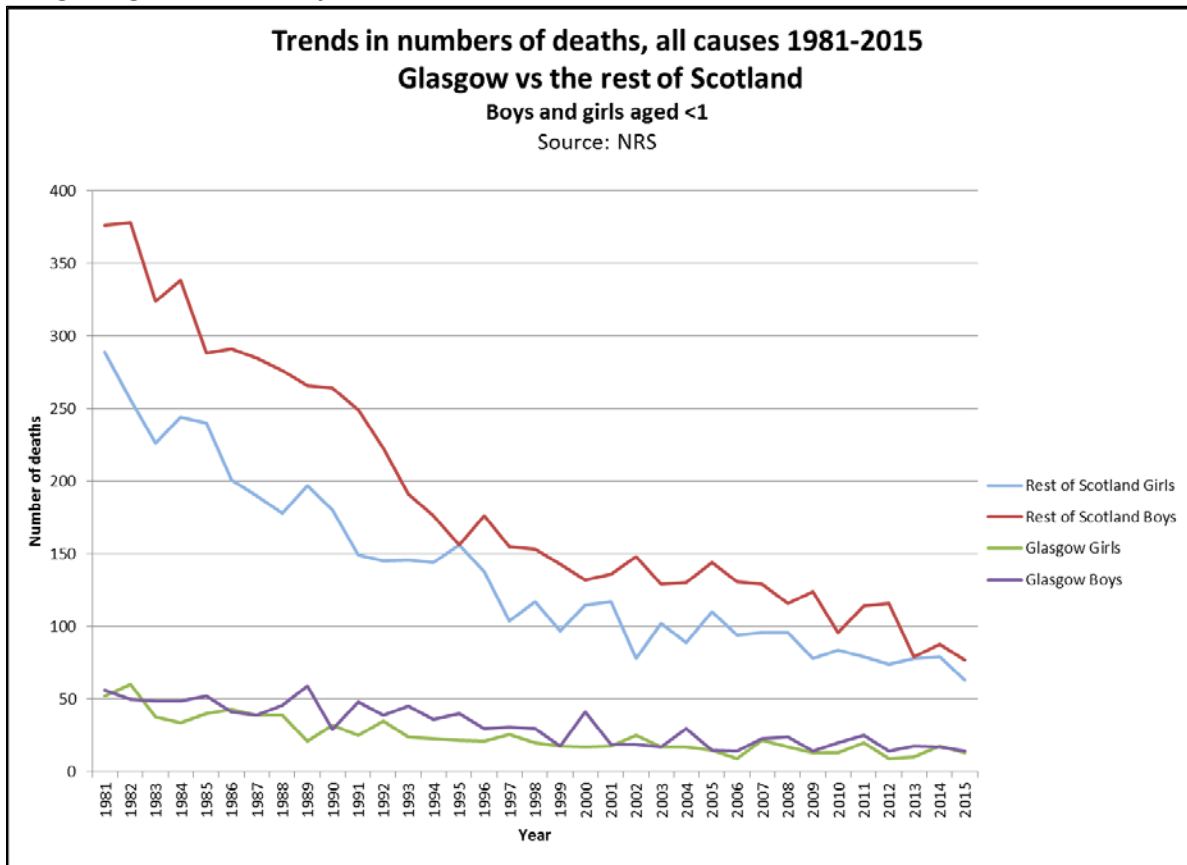
Trends in numbers of deaths

Infant deaths accounted for 0.3% of all deaths in Scotland in 2015.

In Scotland as a whole, the number of infant deaths decreased by 78%ⁱ among girls and by 79% among boys between 1981 and 2015. In 2015, there were 76 deaths among girls and 91 deaths among boys aged less than one year. As the total number of deaths in this age group is small, the analyses split by place and gender should be interpreted with caution, and the graph illustrating the relative frequency of causes show boys and girls grouped together (Figure 1).

Looking solely at Glasgow trends, there was a reduction in deaths of 75% among girls and boys. In the rest of Scotland, the decrease was 78% among girls and 80% among boys (Figure 1, Table A1).

Figure 1: Trends in numbers of deaths, all causes, 1981-2015, Glasgow versus the rest of Scotland, boys and girls aged less than 1 year.



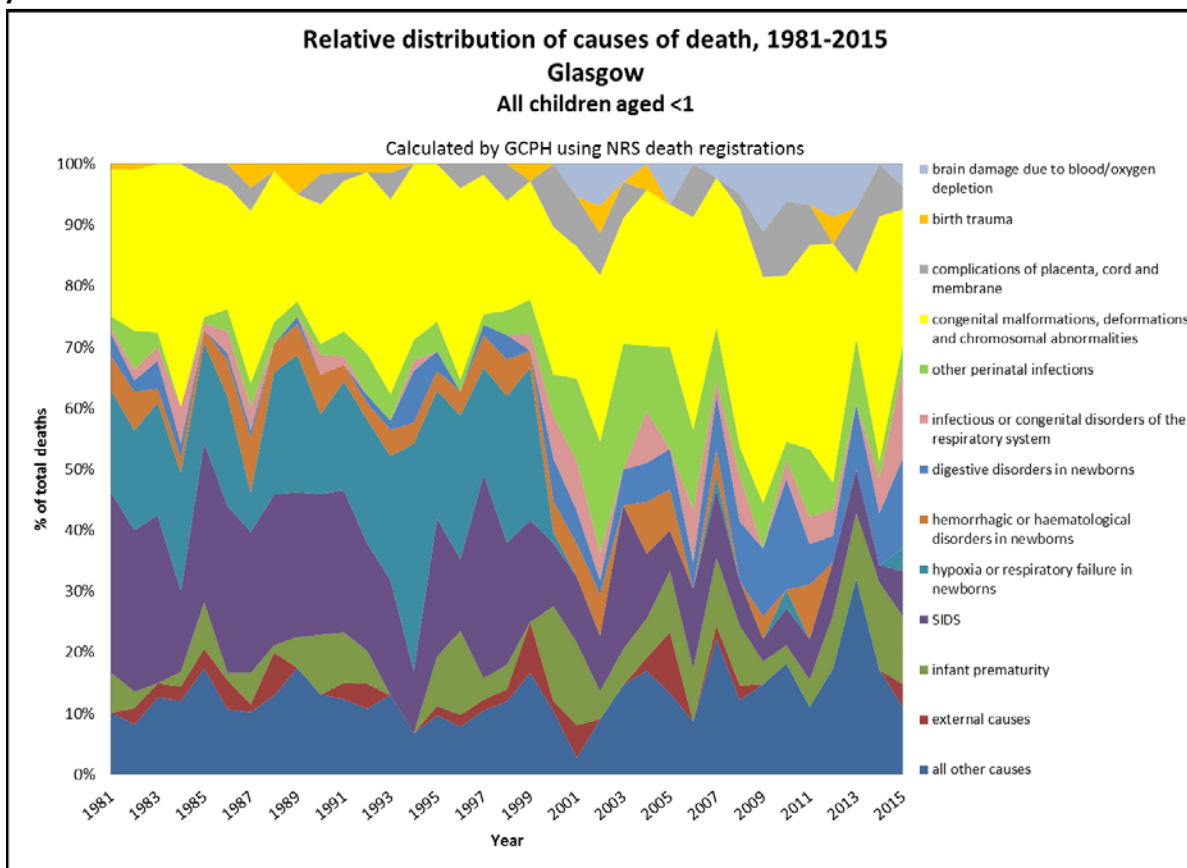
ⁱ In this report, percentage changes in numbers of deaths (or mortality rates) in most cases describe the difference over time expressed as a percentage of mortality in the earliest period and not simply a subtractive difference.

Figure 2 depicts the relative distribution of various causes of death for male and female infants in Glasgow grouped together. The relative frequency of deaths due to congenital malformations, deformations and chromosomal abnormalities has remained fairly constant over the period, while deaths due to sudden infant death syndrome (SIDS) and hypoxia or respiratory failure in newborns have reduced substantially. Deaths due to birth trauma have become very rare since the millennium, but deaths due to infectious or congenital disorders of the respiratory system (10% of all infant deaths in 2015) and digestive disorders in newborns (7% of all infant deaths in 2015) have become proportionately more prominent.

The following paragraphs describe the most common causes of death split by gender, the data for which are not illustrated. In Glasgow in 1981, the two most common causes of death among girls aged less than 1 year were sudden infant death syndrome (SIDS) (33% of deaths) and deaths due to a grouping of congenital malformations, deformations and chromosomal abnormalities (31% of deaths). By 2015, the relative frequency of SIDS had decreased substantially, while deaths due to infectious or congenital malformations of the respiratory system had become relatively more frequent (now accounting for 23% of deaths). The other major cause of death in 2015 was the grouping of congenital malformations, deformations and chromosomal abnormalities (also accounting for 23% of deaths).

Among infant boys in Glasgow, the two most common causes of death in 1981 were SIDS (27% of deaths) and oxygen depletion or respiratory failure in newborns (20% of deaths). In 2015, congenital malformations, deformations and chromosomal abnormalities, and digestive disorders in newborns were the two major causes of death among male Glaswegian infants (both accounting for 21% of deaths).

Figure 2: relative distribution of causes of death, 1981-2015, Glasgow, all children aged less than 1 year.

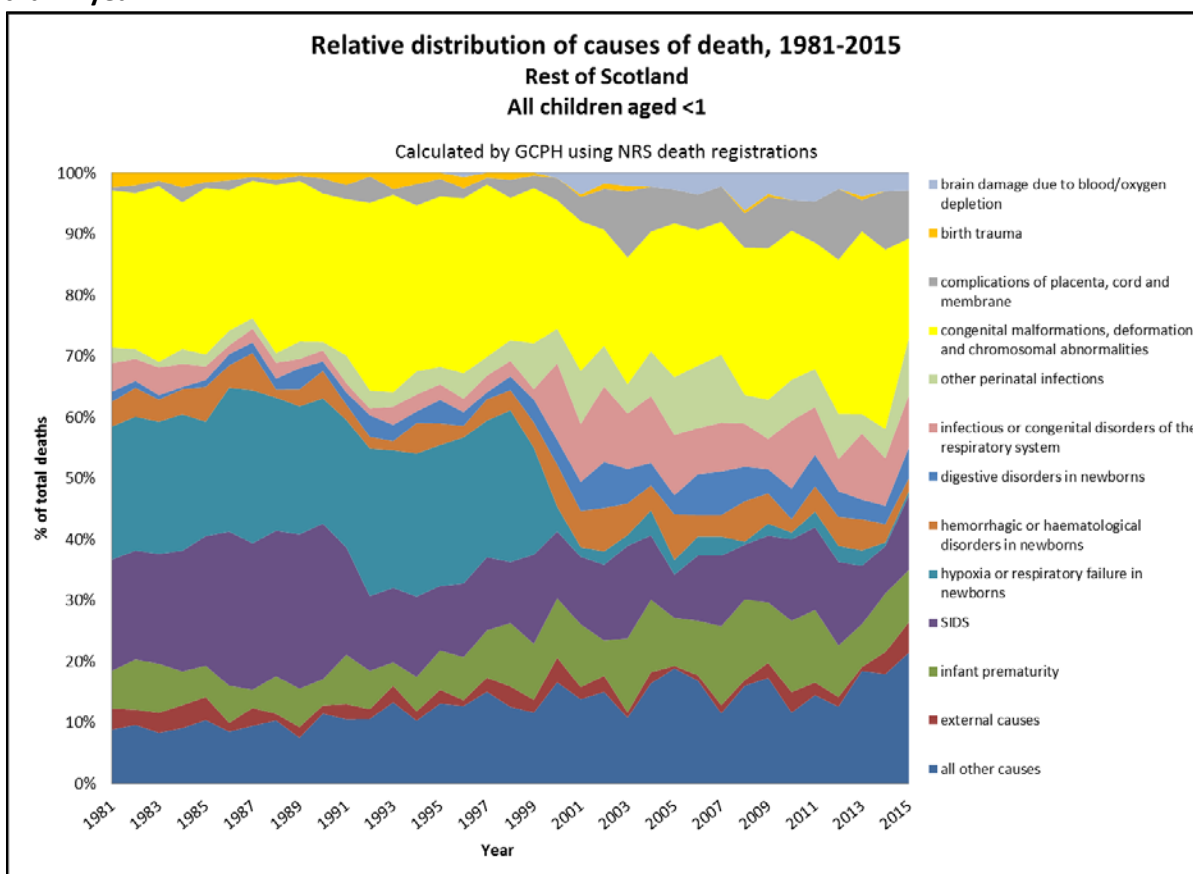


In the rest of Scotland in 1981, the most common causes of death among girls younger than 1 year were congenital malformations, deformations and chromosomal abnormalities (32%), followed by hypoxia or respiratory failure in newborns (22%). In 2015, hypoxia or respiratory failure in newborns had been replaced by SIDS as the second most common cause of death (11%), while congenital malformations, deformations and chromosomal abnormalities remained the most common cause of death (18%).

Among male infants in the rest of Scotland, the most common causes of infant deaths in 1981 were the same as those among girls that year: oxygen depletion or respiratory failure in newborns (22%) and congenital malformations, deformations and chromosomal abnormalities (21%). In 2015, male infant death due to congenital malformations, deformations and chromosomal abnormalities was the most common cause (16%) and deaths due to SIDS were relatively more frequent (13%).

Figure 3 depicts the relative distribution of various causes for girls and boys in the rest of Scotland grouped together. The relative frequency of deaths due to congenital malformations, deformations and chromosomal abnormalities has remained fairly constant over the period until a sharp decline between 2014 and 2015. Deaths due to hypoxia or respiratory failure in newborns, SIDS and birth trauma have reduced, whereas deaths due to complications of placenta, cord and membrane, other perinatal complications and infectious or congenital disorders of the respiratory system have become relatively more frequent.

Figure 3: Relative distribution of causes of death, 1981-2015, rest of Scotland, all children aged less than 1 year.



Trends in infant mortality rates (for all causes)

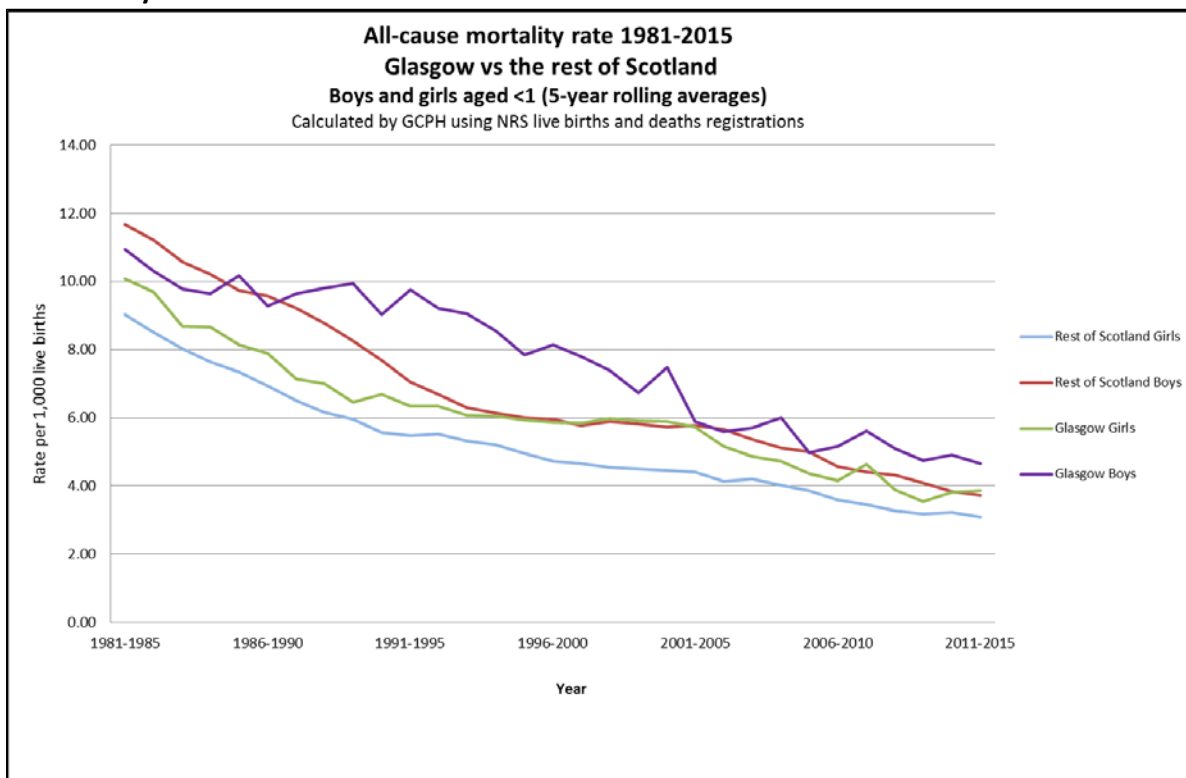
The infant mortality rate (deaths under 1 year of age per 1,000 live births) decreased across Scotland for both genders, although slightly less so among infants in Glasgow, and least of all among boys in Glasgow (Figure 4, Table A1 in Appendix).

Among girls in Glasgow, the infant mortality rate decreased from 10.1 in 1981-1985 to 3.9 in 2011-2015 (-62%). Among boys in Glasgow, the rate declined from 11.0 in 1981-1985 to 4.7 in 2011-2015 (-58%).

Among girls in the rest of Scotland, the rate decreased from 9.0 in 1981-1985 to 3.1 in 2011-2015 (-66%), and among boys in the rest of Scotland decreased from 11.7 in 1981-1985 to 3.7 in 2011-2015 (-68%).

Although the absolute gap in mortality rates between girls in Glasgow and in the rest of Scotland did not change notably, the relative difference increased from 11% in 1981-1985 to 25% in 2011-2015. The male infant mortality rate in Glasgow went from being 6% lower than that in the rest of Scotland in 1981-1985 to being 25% higher in 2011-2015.

Figure 4: All-cause mortality rate, 1981-2015, Glasgow versus the rest of Scotland, boys and girls aged less than 1 year.



Age 1-14 years

Trends in numbers of deaths

In Scotland as a whole, the number of deaths among children between 1 and 14 years of age decreased by 80% for girls and by 75% for boys between 1981 and 2015. When looking at Glasgow as separate from the rest of Scotland, the decrease in deaths was 57% among girls and 78% among boys in the period 1981-2015. In the rest of Scotland, the decrease was 83% among girls and 75% among boys (Figure 5).

In 2015, there were 24 deaths among girls and 46 deaths among boys in this age group in Scotland. Of those, four were boys in Glasgow and six were girls in Glasgow. As the total number of deaths for this age group is small, the gender-specific analyses are omitted, and the graph illustrating the relative frequency of causes among children in the rest of Scotland shows boys and girls grouped together.

Figure 5: Trends in numbers of deaths, all causes, 1981-2015, Glasgow versus the rest of Scotland, boys and girls aged 1-14.

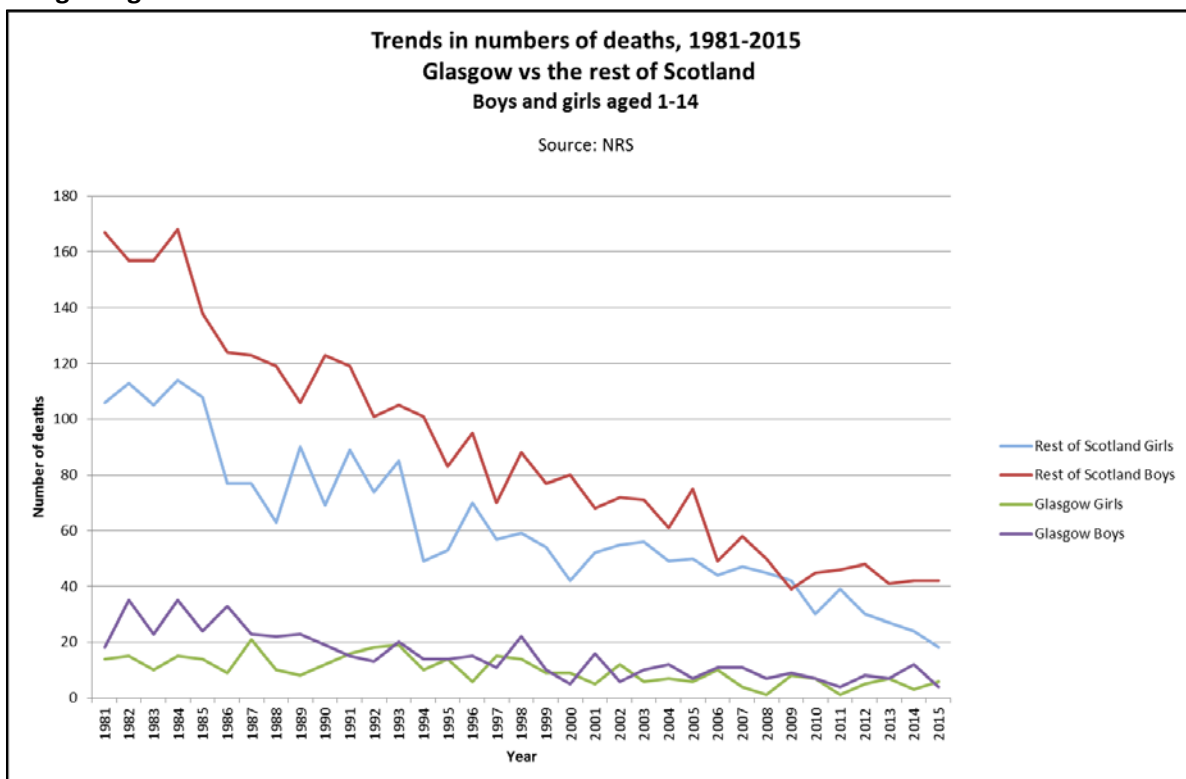
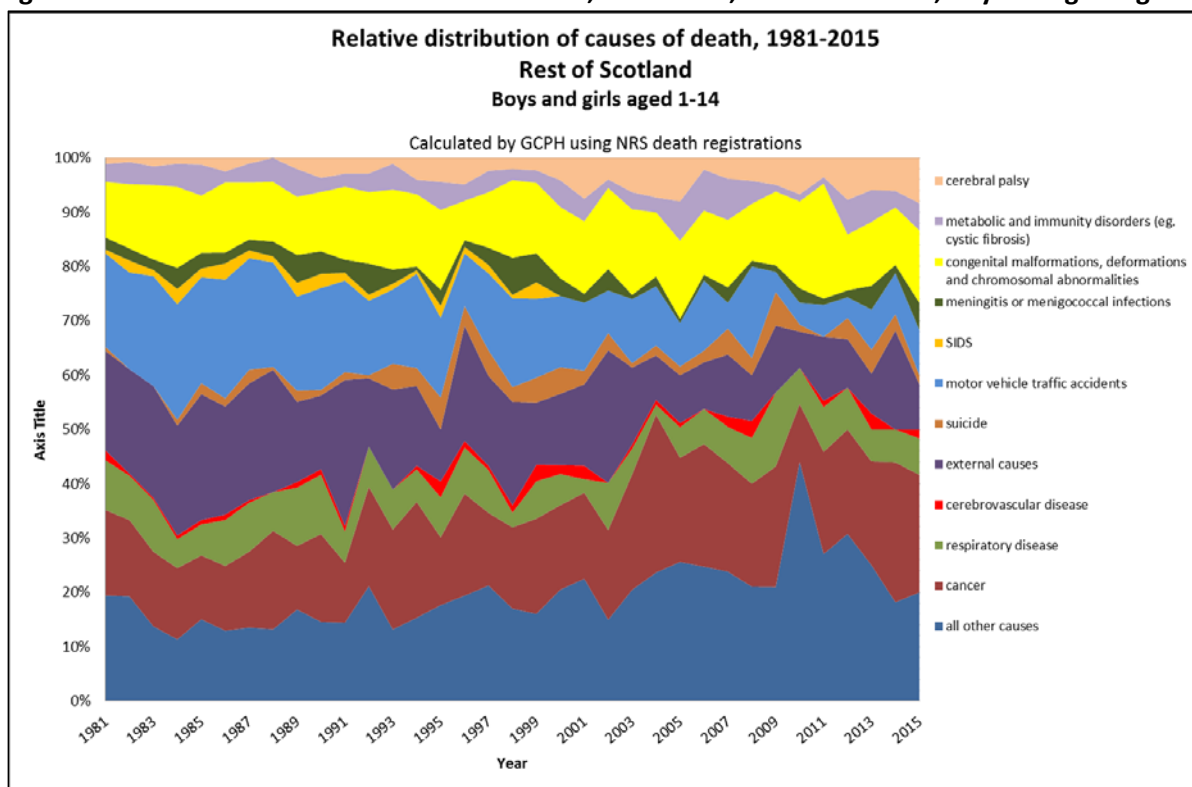


Figure 6 shows the relative distribution of causes over the period for girls and boys in the rest of Scotland grouped together. It can be seen that while deaths due to external causes (accidents and assaults), and motor vehicle traffic accidents have become relatively less common, the proportion of deaths due to cerebral palsy (among boys) and 'cancer' have become relatively more prominent.

In 1981, the most common causes of death among children aged 1-14 in Glasgow were external causes (25%) and cancer (16%). In the rest of Scotland, the most common causes were external (18%), and motor vehicle traffic accidents (17%). In 2015, cancer, external causes and motor vehicle traffic accidents were equally common causes of death (20% each) among children in Glasgow, while in the rest of Scotland, cancer (22%) and congenital malformations, deformations and chromosomal abnormalities (13%) were the most common causes of death among children aged 1-14.

Figure 6: Relative distribution of causes of death, 1981-2015, rest of Scotland, boys and girls aged 1-14.



Among children in Glasgow, the contribution of fatal motor vehicle traffic accidents to mortality in this age group also declined dramatically, while the relative contributions of respiratory disease and cerebral palsy deaths became slightly more prominent in recent years (data not shown).

Trends in all-cause mortality rates

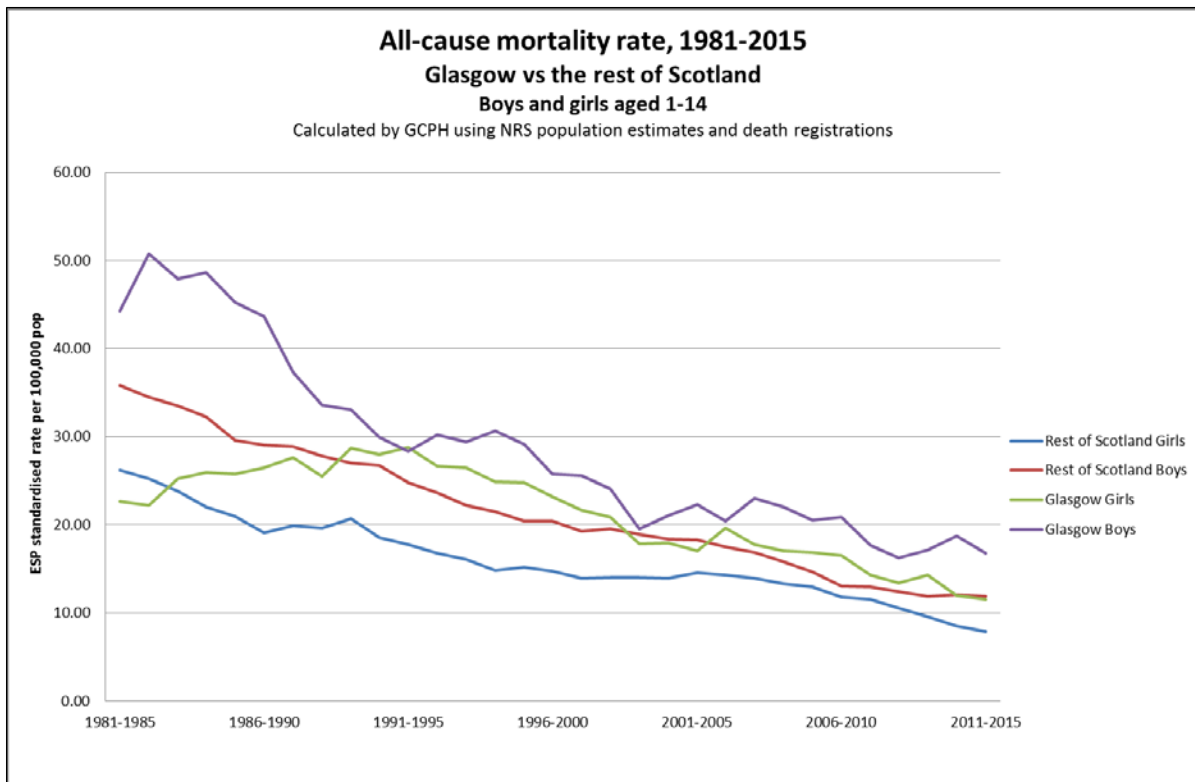
The all-cause mortality rate (number of deaths per 100,000 population, age standardised) has decreased for both boys and girls between 1981 and 2015, but to a lesser degree in Glasgow than in the rest of Scotland (Figure 7, Table A1 in Appendix).

In Glasgow, the female mortality rate fell from 22.7 in 1981-1985 to 11.6 in 2011-2015 (-49%), and the male mortality rate fell from 44.2 in 1981-1985 to 16.7 in 2011-2015 (-62%).

In the rest of Scotland, the female rate fell from 26.2 in 1981-1985 to 7.9 in 2011-2015 (-70%) and the male rate fell from 35.8 in 1981-1985 to 11.9 in 2011-2015 (-67%).

In 1981-1985, the mortality rate among Glaswegian girls was 14% lower than the rate among girls in the rest of Scotland but by 2011-2015 the Glasgow rate was 47% higher. Among boys, the 2011-2015 mortality rate in Glasgow was 41% higher than that in the rest of Scotland (up from an excess of 24% in 1981-1985). However, as with infant mortality, there is need for a great deal of caution in interpreting the mortality rates for children, which are based on small numbers of deaths, particularly in Glasgow.

Figure 7: All-cause mortality rate 1981-2015, Glasgow versus the rest of Scotland, boys and girls aged 1-14.



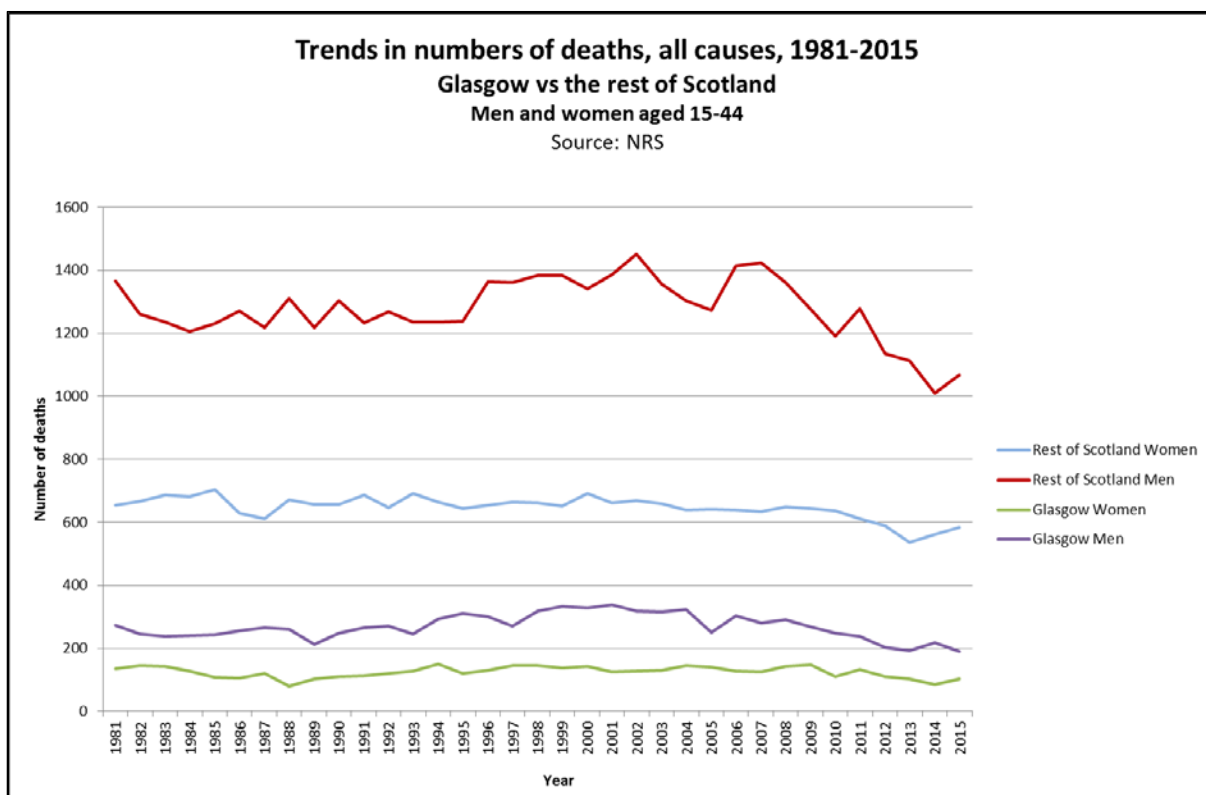
Age 15-44 years

Trends in numbers of deaths

In Scotland as a whole, the number of deaths of people aged 15-44 years fell by 13% for women and 23% for men in the years between 1981 and 2015. Deaths among people aged 15-44 accounted for 3.3% of all Scottish deaths in 2015.

Within Glasgow, the number of deaths among women fell by 24%, while deaths among men fell by 30% in the period 1981-2015. In the rest of Scotland, the number of deaths among women fell by only 11%, while deaths among men fell by 22%. There was, therefore, a larger decrease in male and female deaths in this age group in Glasgow than in the rest of Scotland in the period 1981-2015 (Figure 8, Table A2 in Appendix).

Figure 8: Trends in numbers of deaths, all causes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44.



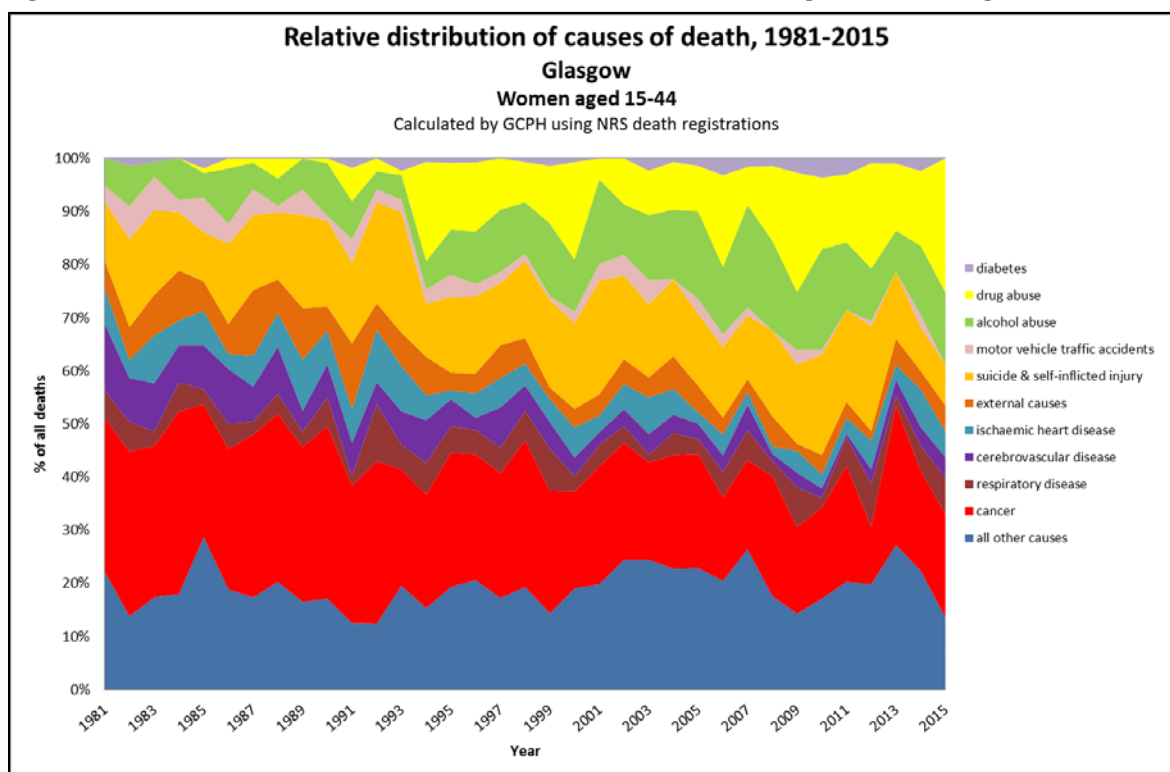
While the overall number of deaths decreased in the years between 1981 and 2015, certain causes of death stand out as having become more frequent in both absolute and relative terms across Scotland. Starting with a spike in the early 1990s, drug-related deaths have continued to rise and contributed far more to the overall burden of male and female mortality in 2015 than in the early 1980s (Figures 9, 10).

Across Scotland, the number of alcohol-related deaths rose from 1981 towards 2006/7, after which numbers declined again. The recent decline was most pronounced among Glaswegian men and, as a result, by 2015 the number of alcohol-related deaths among Glaswegian men had reduced to a level similar to that observed in 1985. In the rest of Scotland, there were increases in deaths due to suicide and self-inflicted injury particularly among women.

Looking at the relative frequency of specific causes of death among Glaswegian women (Figure 9), it can be seen that, in 1981, the two most common causes of death were cancer (29%) and cerebrovascular disease (13%). In 2015, the most common causes were drug related (25%) and cancer (19%).

In the rest of Scotland, the two most common causes of death among women aged 15-44 in 1981 were cancer (34%) and motor vehicle traffic accidents (10%), and in 2015 they were cancer (24%) and drug related (15%) (data not shown).

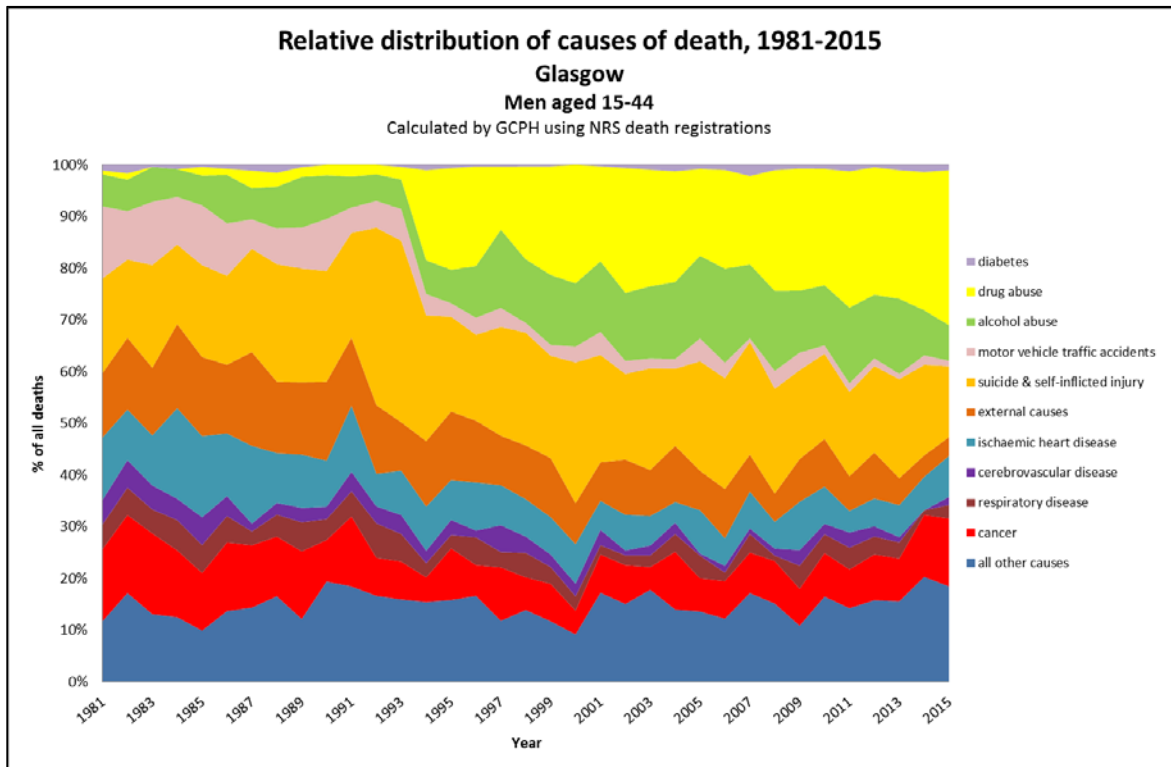
Figure 9: Relative distribution of causes of death, 1981-2015, Glasgow, women aged 15-44.



Among Glaswegian men, the most common causes of death in 1981 were motor vehicle traffic accidents (14%) and cancer (14%), while, in 2015, the most common causes were drug related (30%), and suicide and self-inflicted injury (14%) (Figure 10).

In the rest of Scotland, the most common causes of death among men aged 15-44 in 1981 were also motor vehicle traffic accidents (19%) and cancer (14%), while in 2015, as in Glasgow, the majority of deaths among men in this age group were drug related (23%), followed by suicide and self-inflicted injury (20%) (data not shown).

Figure 10: Relative distribution of causes of death, 1981-2015, Glasgow, men aged 15-44



Trends in all-cause mortality rates

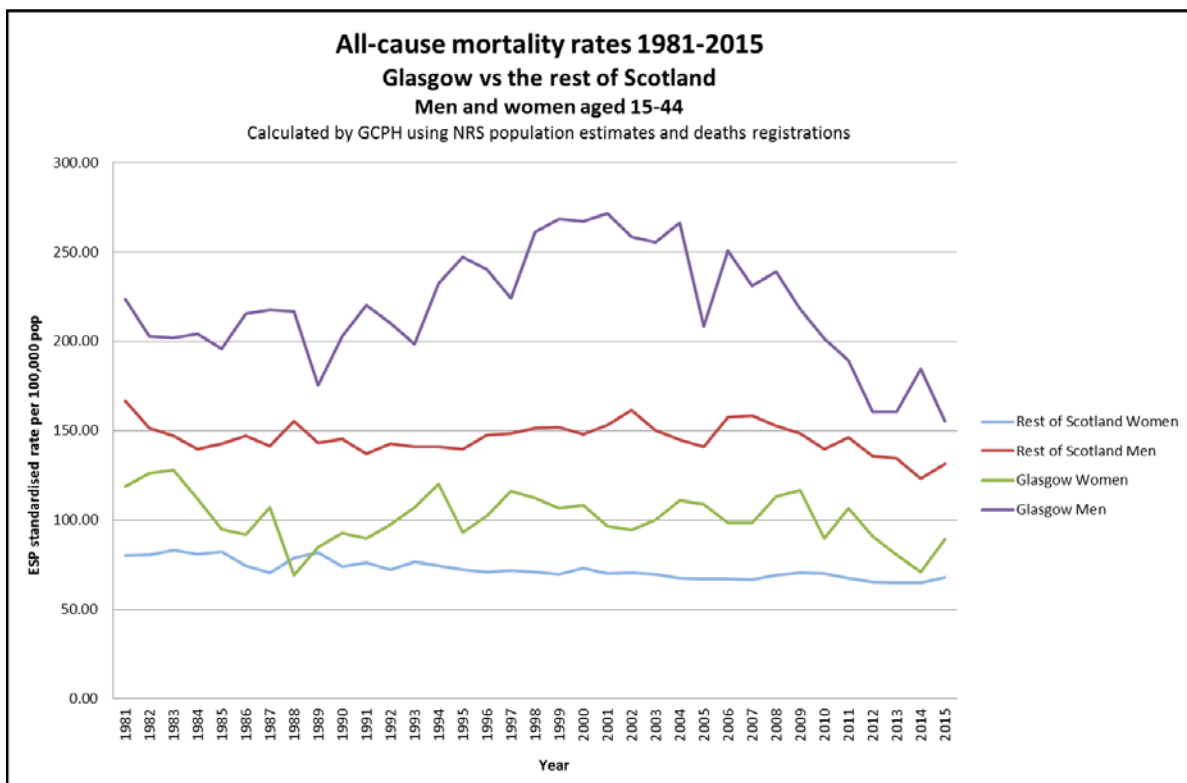
All-cause mortality rates for this age group are reported by individual year.

The all-cause mortality rate (number of deaths per 100,000 population, age standardised) among 15-44 year olds declined between 1981 and 2015, more so in Glasgow than in the rest of Scotland and more among men than among women (Figure 11). The decline, however, only took place in the last decade or so.

In Glasgow, the female mortality rate fell from 118.7 in 1981 to 89.1 in 2015 (-25%), while the male rate fell from 223.8 in 1981 to 155.2 in 2015 (-31%). In the rest of Scotland, the female rate fell from 79.9 in 1981 to 67.8 in 2015 (-15%), and the male rate fell from 166.5 in 1981 to 131.3 (-21%) (see Table A2 in Appendix). Both the male and female mortality rates in the rest of Scotland, and the female mortality rate in Glasgow, increased between 2014 and 2015.

Although mortality in 2015 was still higher in Glasgow than in the rest of Scotland, the gap between these mortality rates had narrowed. The mortality rate for Glaswegian women aged 15-44 in 2015 was 32% higher than in the rest of Scotland (down from being 49% higher in 1981). Among men of the same age, the mortality rate was 18% higher in Glasgow than in the rest of Scotland by 2015 (down from being 34% higher in 1981) (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 11: All-cause mortality rates 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44.



Trends in cause-specific mortality rates

External causes

In 2011-2015, 45% of deaths among 15-44 year olds in Scotland were attributed to external causes. This category includes traffic accidents and deaths caused by fatal accidents, such as falls, poisonings, drownings and fires – whether intentional or unintentional (i.e. some cases that would also be coded as drug-related or suicides)ⁱⁱ – as well as deaths resulting from assault or violence.

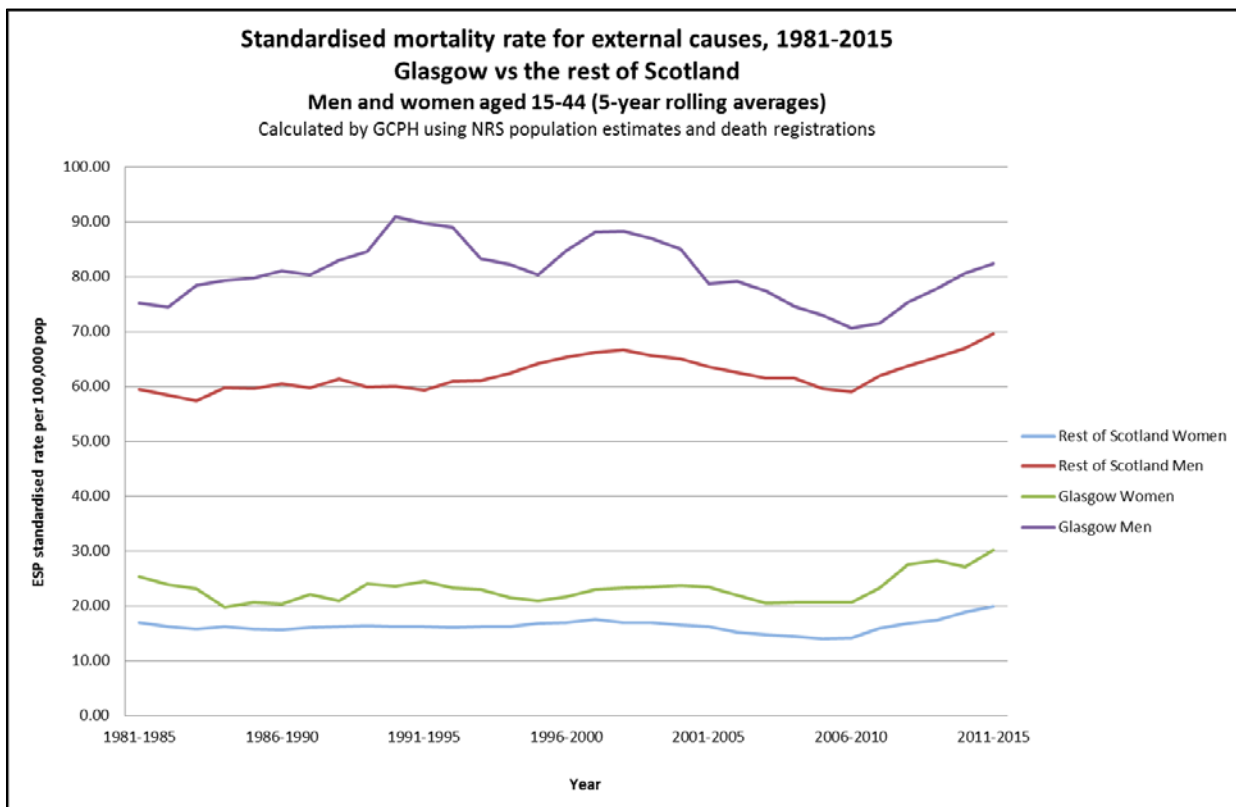
Mortality rates for external causes remained fairly stable in the years 1981 to around 2000, from which point there was a general decrease (most notably among Glaswegian men) towards 2006. Since then, however, rates increased again towards 2015 (Figure 12, Tables A3 & A4 in Appendix).

The 2011-2015 mortality rate among women in Glasgow was 30.1, which represents a 19% increase from the 1981-1985 rate of 25.4. Among Glaswegian men, the 2011-2015 rate was 82.4, which represents a 9% increase from the 1981-1985 rate of 75.2.

In the rest of Scotland, the female mortality rate increased from 16.9 in 1981-1985 to 19.9 in 2011-2015, a 17% increase, while the male rate showed a similar increase from 59.5 to 69.6 (+17%).

The mortality gap between the female rate of mortality from external causes in Glasgow and the rate in the rest of Scotland did not change much (from 50% higher in Glasgow in 1981-1985 to 52% higher in 2011-2015). The gap in male mortality rates, however, narrowed. The Glasgow rate was 27% higher than the rate in the rest of Scotland in 1981-1985, but only 18% higher in 2011-2015 (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 12: Standardised mortality rate for external causes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



ⁱⁱ In the years 2011-2015, 49% of deaths coded as external causes in this age group were also coded as drug-related, 43% were also coded as suicides or self-inflicted injury, and 9% were coded as motor vehicle traffic accidents.

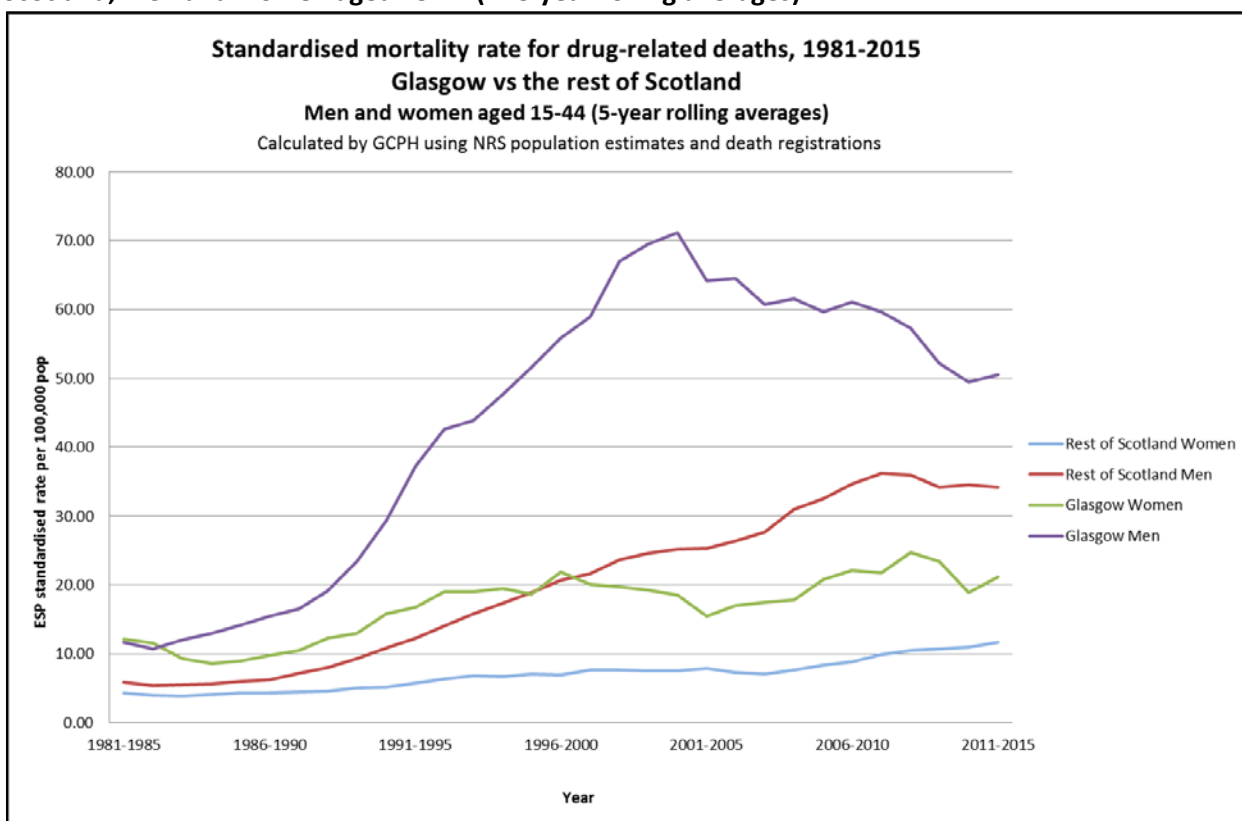
Drug-related deaths

In 2011-2015, 24% of deaths among 15-44 year olds in Scotland as a whole were drug related. After rising sharply in the 1980 and reaching a peak in the early 2000s, the male rate for drug-related deaths in Glasgow declined substantially between the early 2000s and 2015. The female rate in Glasgow remained more stable, but has increased slightly in recent years (Figure 13, Tables A3 & A4 in Appendix). Overall, the female drug-related mortality rate in Glasgow showed a net increase from 12.2 in 1981-1985 to 21.1 in 2011-2015 (+73%) and the male rate increased from 11.7 in 1981-1985 to 50.6 in 2011-2015 (+332%).

In the rest of Scotland, both male and female drug-related mortality rates increased steadily from the early 1980s onwards. The female rate increased from 4.4 in 1981-1985 to 11.7 in 2011-2015 (+169%), while the male rate increased from 5.9 in 1981-1985 to 34.2 in 2011-2015 (+479%).

Although Glasgow's rates in 2011-2015 were much higher than those in the rest of Scotland, the degree of the recent decline was more notable in the city, leading to a narrowing of the gap in drug-related mortality between Glasgow and the rest of Scotland. The difference between the mortality rate among women in Glasgow and in the rest of Scotland reduced from the Glasgow rate being 179% higher in 1981-1985 to being 80% higher in 2011-2015. The difference between the mortality rate among men in Glasgow and men in the rest of Scotland reduced from being 98% higher to being 48% higher in Glasgow over the same period (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 13: Standardised mortality rate for drug-related deaths, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Suicide and self-inflicted injury

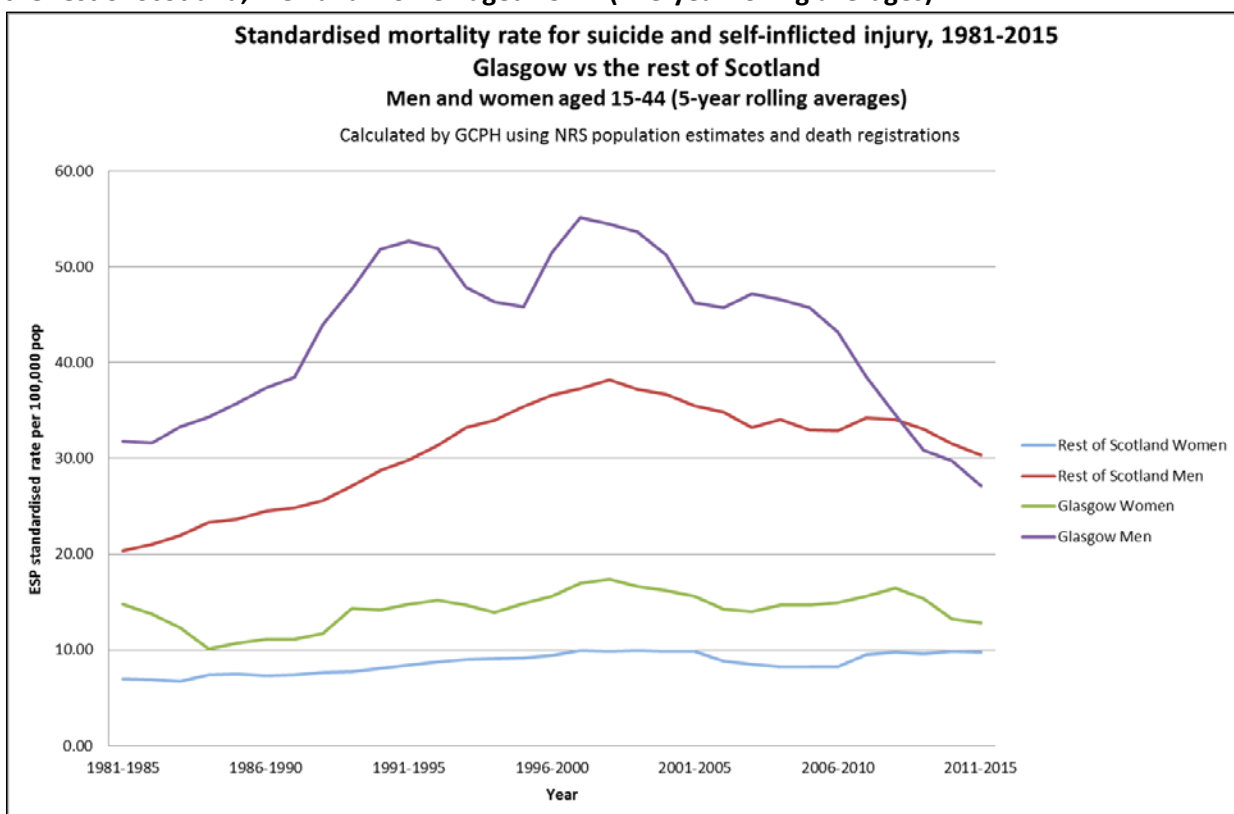
In 2011-2015, approximately 20% of deaths among 15-44 year olds in Scotland were suicides or caused by self-inflicted injury. While suicide rates decreased among both men and women in Glasgow between 1981-1985 and 2011-2015, they increased in the rest of Scotland (Figure 14, Tables A3 & A4 in Appendix).

After peaks in the late 1990s/early 2000s, the female rate in Glasgow showed a net decrease from 14.7 in 1981-1985 to 12.8 in 2011-2015 (-13%), and the male rate decreased from 31.8 in 1981-1985 to 27.1 in 2011-2015 (-15%).

This is in contrast to the rest of Scotland, where the female rate increased from 7.0 in 1981-1985 to 9.7 in 2011-2015 (+40%) and the male rate increased from 20.4 in 1981-1985 to 30.3 in 2011-2015 (+49%).

The more positive suicide trends in Glasgow in recent years has resulted in a narrowing of the gap between Glasgow and the rest of Scotland. Among women, the Glasgow rate changed from being 112% higher than the rate in the rest of Scotland in 1981-1985 to being 31% higher in 2011-2015. The suicide rate among Glaswegian men decreased from being 56% higher to being 10% lower than the rate among men in the rest of Scotland over the same period (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 14: Standardised mortality rate for suicide and self-inflicted injury, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Cancer

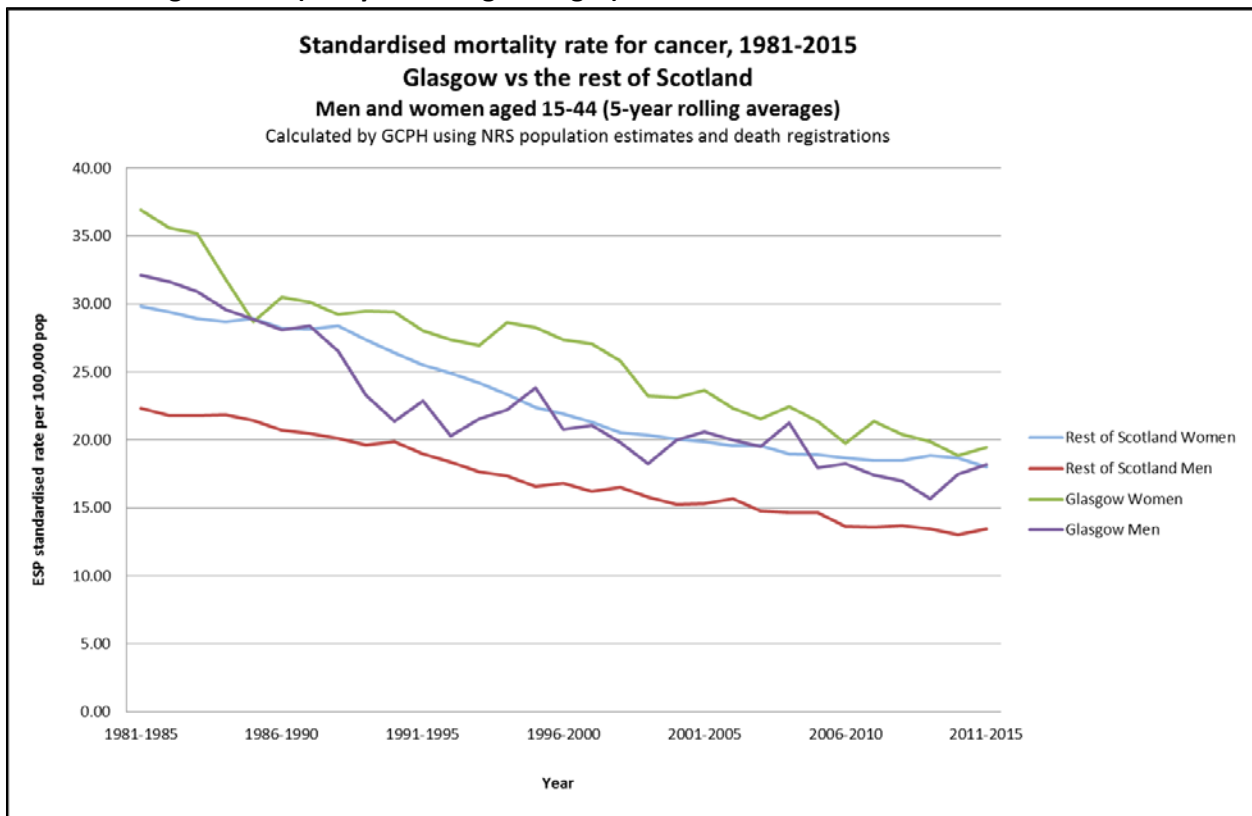
In 2011-2015, cancer (all malignant neoplasms) was the third most common cause of death among 15-44 year olds in Scotland, accounting for approximately 16% of the total burden of mortality. The rates of death from cancer among 15-44 year olds declined across Scotland, but slightly more in Glasgow than in the rest of Scotland (Figure 15, Tables A3 & A4 in Appendix).

In Glasgow, the female cancer mortality rate declined from 36.9 in 1981-1985 to 19.5 in 2011-2015 (-47%), and the male rate declined from 32.1 in 1981-1985 to 18.2 in 2011-2015 (-43%).

In the rest of Scotland, the female rate declined from 29.8 in 1981-1985 to 18.0 in 2011-2015 (-40%) and the male rate declined from 22.4 in 1981-1985 to 13.4 in 2011-2015 (-40%).

In 1981-1985, the cancer mortality rate among women in Glasgow was 24% higher than in the rest of Scotland, but by 2011-2015 this gap had reduced to being only 8% higher. The cancer mortality rate among men in Glasgow changed from being 44% higher to being 36% higher than the rate in the rest of Scotland over the period (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 15: Standardised mortality rate for cancer, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Alcohol-related deaths

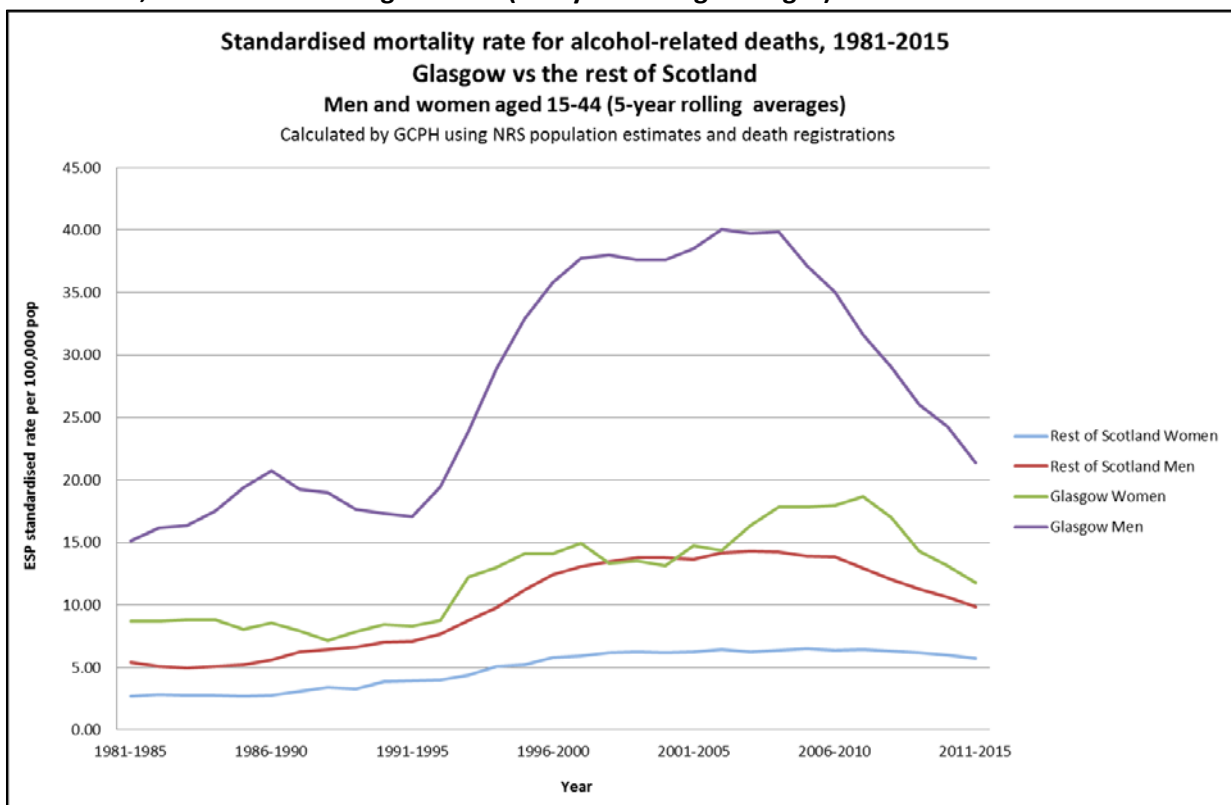
In 2011-2015, approximately 8% of deaths among 15-44 year olds in Scotland were alcohol-related. The mortality rate for alcohol-related deaths increased across Scotland between 1981-1985 and 2011-2015, but after a notable rise during the 1990s and then a subsequent fall, the overall net increase was smaller in the city than in the rest of Scotland (Figure 16, Tables A3 & A4 in Appendix).

Among women in Glasgow, the rate increased from 8.7 in 1981-1985 to 11.8 in 2011-2015 (+35%), and among men in Glasgow the rate increased from 15.1 in 1981-1985 to 21.4 in 2011-2015 (+41%).

Among women in the rest of Scotland, the rate increased from 2.7 in 1981-1985 to 5.8 in 2011-2015 (+111%), and among men in the rest of Scotland, the rate increased from 5.4 in 1981-1985 to 9.9 in 2011-2015 (+83%).

Although the rates remained much higher in Glasgow, there was a noticeable decline in the city from the mid-to-late-2000s onwards, which was not observed in the rest of Scotland. Hence, the 2011-2015 gap between Glasgow and the rest of Scotland in terms of alcohol-related deaths was the smallest since the early 1990s (+105% for women in Glasgow and +116% for men in Glasgow) (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 16: Standardised mortality rate for alcohol-related deaths, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



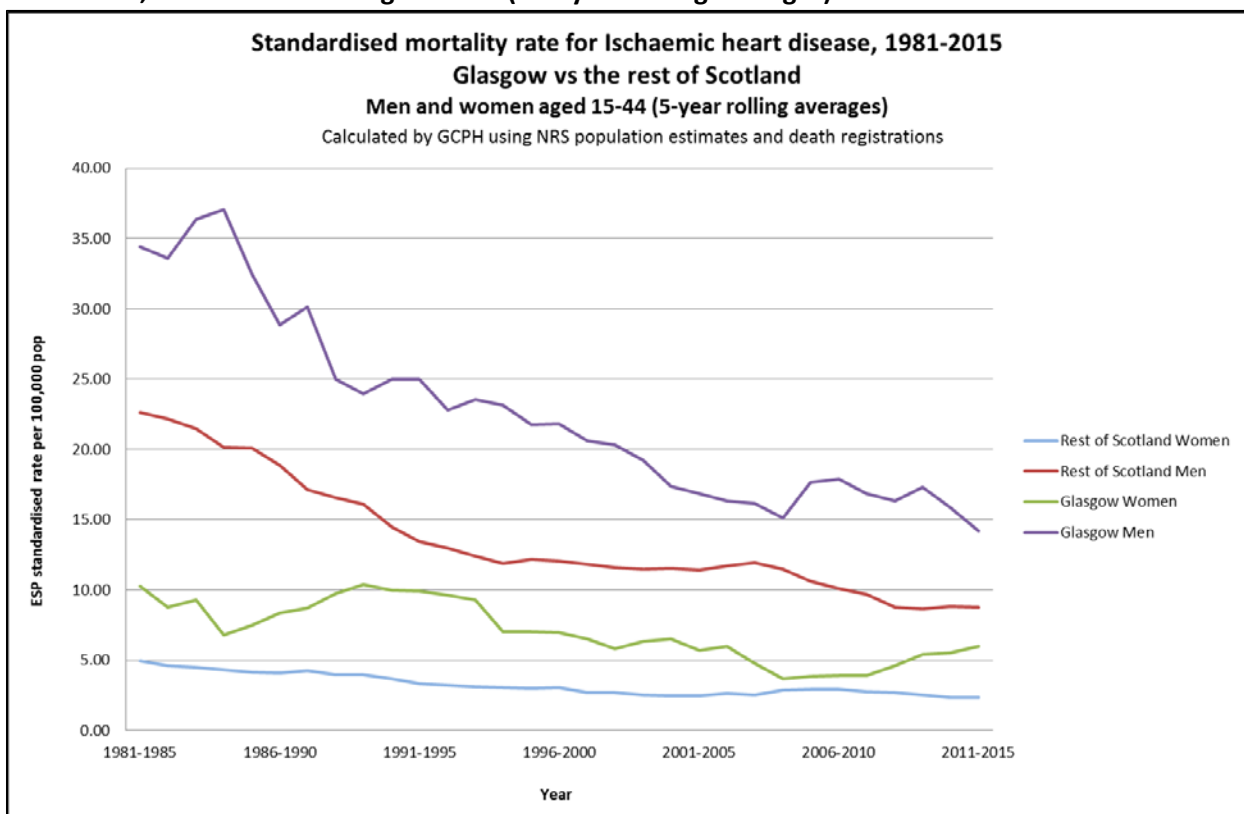
Ischaemic heart disease

In 2011-2015, approximately 5% (539 cases over five years) of all deaths among 15-44 year olds in Scotland were attributed to ischaemic heart disease. The rate of ischaemic heart disease mortality among 15-44 year olds decreased across Scotland between 1981 and 2015, but an increasing trend from the mid-2000s onwards among Glaswegian women has meant that the improvement was smallest for this group (Figure 17, Tables A3 & A4 in Appendix).

In Glasgow, the female mortality rate fell from 10.3 in 1981-1985 to 6.0 in 2011-2015 (-42%), and the male rate fell from 34.4 in 1981-1985 to 14.2 in 2011-2015 (-59%). In the rest of Scotland, the female rate fell from 4.9 in 1981-1985 to 2.3 in 2011-2015 (-53%), while the male rate fell from 22.6 in 1981-1985 to 8.7 in 2011-2015 (-61%).

The mortality gap between Glaswegian women and women in the rest of Scotland increased in the period. In 1981-1985, the female rate in Glasgow was 107% higher than in the rest of Scotland, but by 2011-2015 it was 155% higher than in the rest of Scotland. The difference in male rates also increased with the rate in Glasgow rising from being 52% higher in 1981-1985 to 62% higher in 2011-2015 (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 17: Standardised mortality rate for ischaemic heart disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Motor vehicle traffic accidents

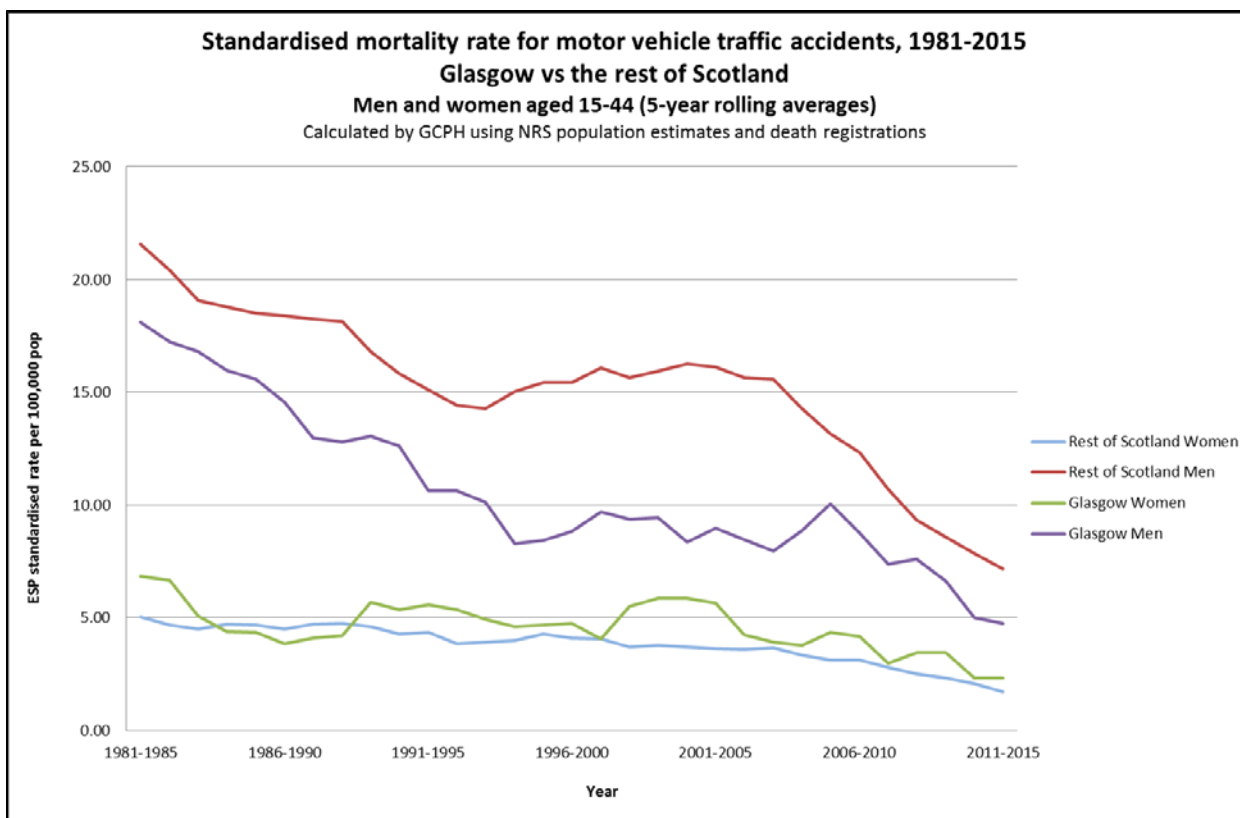
In 2011-2015, 4% (405 cases over five years) of all deaths among 15-44 year olds in Scotland were caused by motor vehicle traffic accidents (MVTAs). After a period of reduction in MVTA mortality rates through the 1980s and 1990s, there were slight increases in the early 2000s. However, since then the rates have continued to decline with the slope of decline being steepest among men in Glasgow (Figure 18, Tables A3 & A4 in Appendix). The numbers of deaths from this cause are relatively small and therefore the mortality trends need to be interpreted with caution.

In 1981-1985, the female mortality rate in Glasgow was 6.8, and by 2011-2015 it had fallen to 2.3 (-66%). The male mortality rate in Glasgow in 1981-1985 was 18.1, and by 2011-2015, it had declined to 4.8 (-74%).

Among women in the rest of Scotland, the rate declined from 5.0 in 1981-1985 to 1.7 in 2011-2015 (-66%). Among men in the rest of Scotland, the rate declined from 21.6 in 1981-1985 to 7.2 in 2011-2015 (-67%).

The MVTA mortality rates for women in Glasgow and the rest of Scotland have reduced at a similar rate. In 2011-2015 the female MVTA mortality rate in Glasgow was slightly higher than the rate in the rest of Scotland. In contrast, the male MVTA mortality rate in Glasgow has been lower than the rate in the rest of Scotland for the last 35 years with the gap between the two rates widening slightly by 2011-2015 (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 18: Standardised mortality rate for motor vehicle traffic accidents, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Respiratory disease

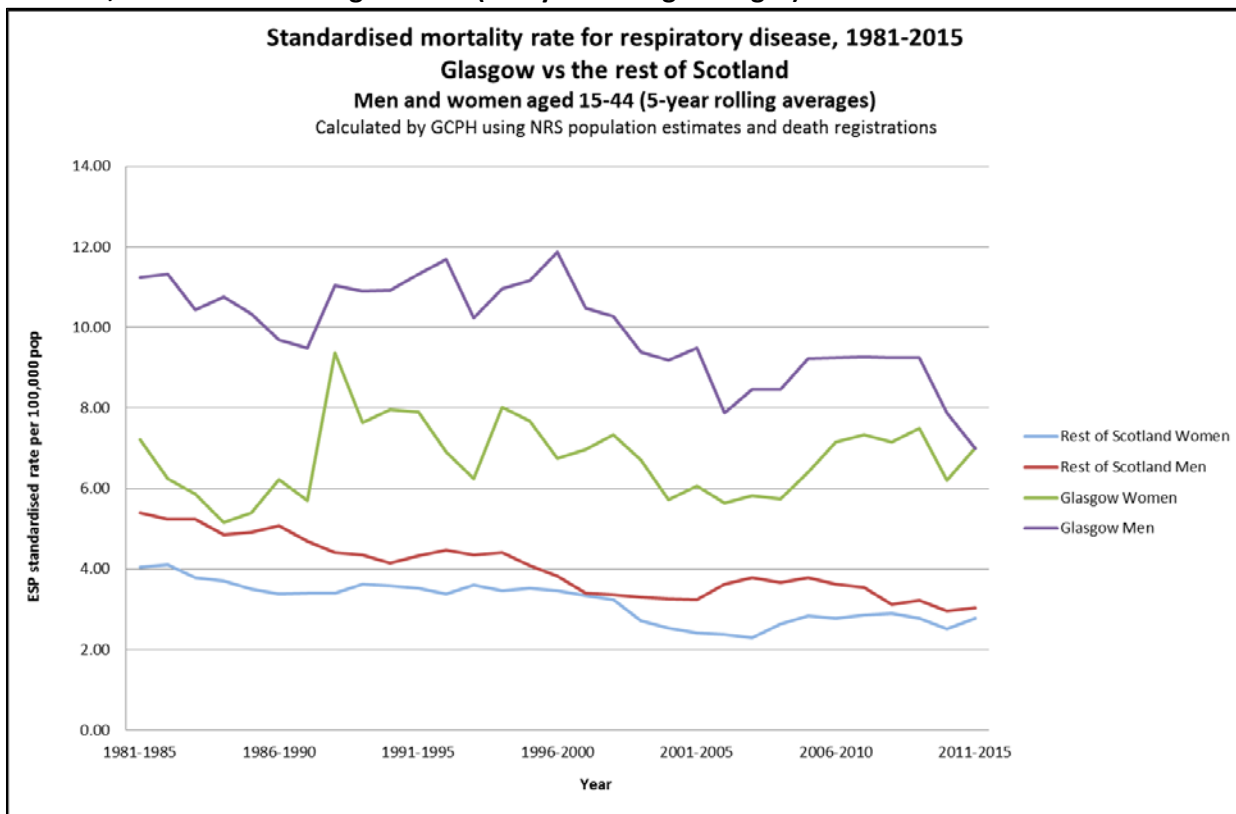
In 2011-2015, approximately 3% (295 cases over five years) of all deaths among 15-44 year olds in Scotland were attributed to respiratory disease. Mortality rates for respiratory disease fell among 15-44 year olds across Scotland in the years between 1981 and 2015, but a gender difference was apparent, with female mortality, particularly in Glasgow, showing an increasing trend since the early 2000s (Figure 19, Tables A3 & A4 in Appendix). However, because the numbers of deaths are relatively small, the analysis of trends in Glasgow should be interpreted with caution.

The rate among women in Glasgow showed an overall minimal decrease from 7.2 in 1981-1985 to 7.0 in 2011-2015 (-3%), but has fluctuated considerably over the last 35 years. Among men in Glasgow, the rate showed a more substantial decline from 11.3 in 1981-1985 to 7.0 in 2011-2015 (-38%).

In the rest of Scotland, the female rate fell from 4.0 in 1981-1985 to 2.8 in 2011-2015 (-31%) and the male rate fell from 5.4 in 1981-1985 to 3.1 in 2011-2015 (-43%).

The respiratory disease mortality gap between women in Glasgow and women in the rest of Scotland increased from being 79% higher in Glasgow in 1981-1985 to being 152% higher in 2011-2015, while the gap for men increased from being 109% higher in Glasgow in 1981-1985 to being 129% higher in 2011-2015 (see Table 2 and Figures 22 & 23, pages 32-33).

Figure 19: Standardised mortality rate for respiratory disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Cerebrovascular disease

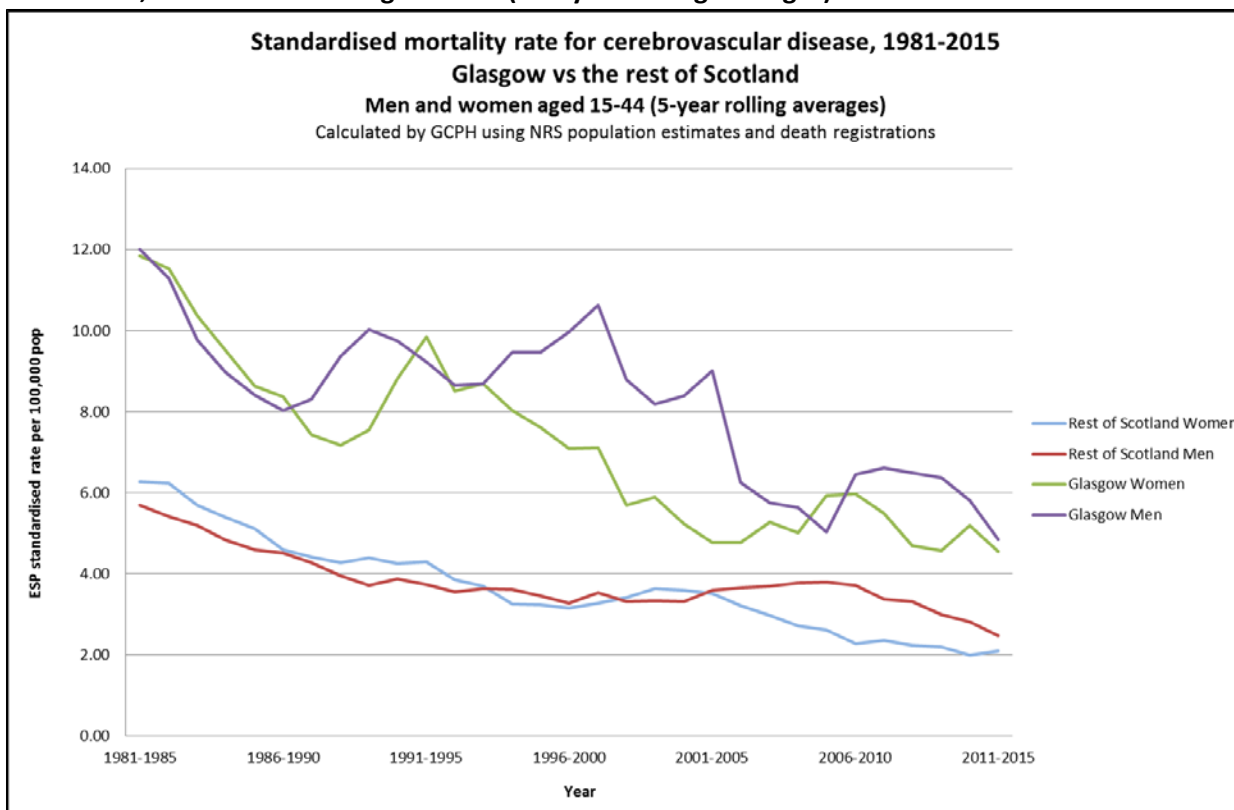
In 2011-2015, cerebrovascular disease accounted for 2% (206 cases over five years) of deaths among 15-44 year olds in Scotland. Mortality rates from cerebrovascular disease among 15-44 year olds showed a fluctuating, but decreasing trend between 1981 and 2015 (Figure 20, Tables A3 & A4 in Appendix). Again, as the numbers of deaths from this cause in this age group are small, the analyses of trends in Glasgow need to be interpreted with caution.

Among women in Glasgow, the rate showed an overall decline from 11.9 in 1981-1985 to 4.6 in 2011-2015 (-62%). Among males in Glasgow, the pattern was largely the same, with the rate declining from 12 in 1981-1985 to 4.9 in 2011-2015 (-60%).

In the rest of Scotland, improvement was on a similar scale, with the female rate declining from 6.3 in 1981-1985 to 2.1 in 2011-2015 (-67%), and the male rate declining from 5.7 in 1981-1985 to 2.5 in 2011-2015 (-56%).

As a consequence of slightly different mortality trends, the gap between cerebrovascular mortality rates among women in Glasgow and in the rest of Scotland increased from being 89% higher in Glasgow in 1981-1985 to being 118% higher in 2011-2015. Among men, the difference in rates reduced slightly from being 111% higher in Glasgow in 1981-1985 to being 96% higher in 2011-2015 (see Table 2 and Figures 22 & 23, on pages 32-33).

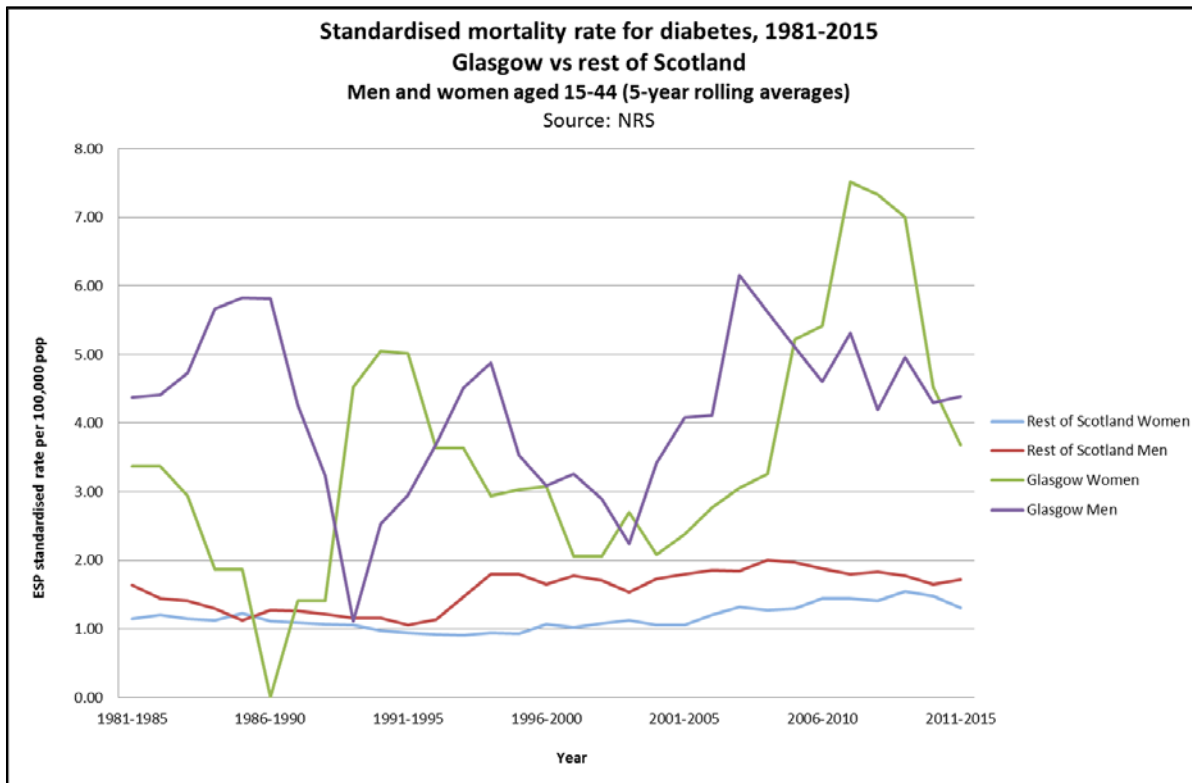
Figure 20: Standardised mortality rate for cerebrovascular disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Diabetes

In 2011-2015, diabetes accounted for approximately 1% (143 cases over five years) of deaths among 15-44 year olds in Scotland. The small numbers involved makes it difficult to discern any clear patterns in the mortality rates. The overall trend, however, appears to be increasing slightly (Figure 21, Tables A3 & A4 in Appendix).

Figure 21: Standardised mortality rate for diabetes, Glasgow versus the rest of Scotland, men and women aged 15-44 (five-year rolling averages).



Overview of trends

Table 2 (and Figures 22 & 23) illustrates how the standardised mortality rates in Glasgow compared with the rest of Scotland for this age group have changed. While there are still higher levels of mortality for all causes in Glasgow – 32% higher for women and 18% higher for men in 2015 – the gap reduced for both genders between the years 1981 and 2015.

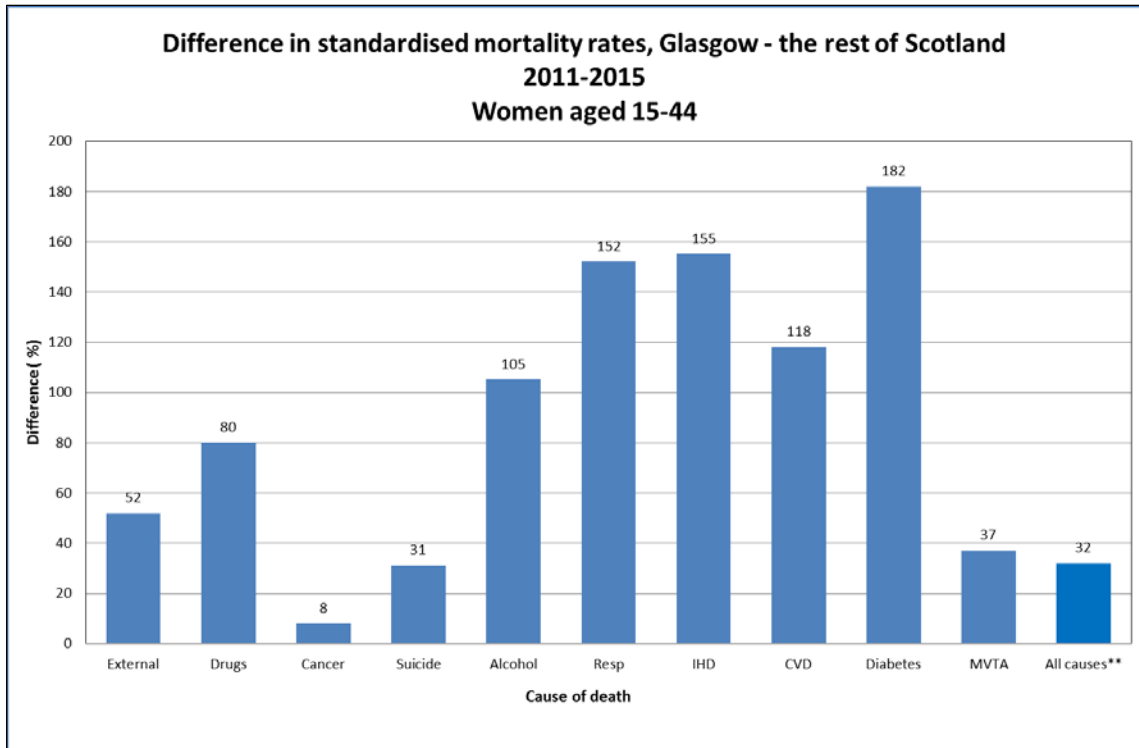
For individual causes, there are two main features: the mortality rates are higher in Glasgow compared with the rest of Scotland for the majority causes and for both males and females. Nevertheless, there have been reductions in the mortality gap between Glasgow and the rest of Scotland for a range of causes of death in the 15-44 age group, most notably for drugs-related causes, alcohol-related causes, suicide, and cancer. It is of concern though, that, despite mortality reductions, the gap in mortality between Glasgow and the rest of Scotland has widened for respiratory disease, ischaemic heart disease, and cerebrovascular disease (among women) in this age group.

Table 2. Difference between standardised mortality rates (SMR) in Glasgow and the rest of Scotland, age 15-44.

Difference: SDR in Glasgow – SDR rest of Scotland (%)*						
Age 15-44						
Gender	Women			Men		
Year	1981-1985	2011-2015	Change**	1981-1985	2011-2015	Change**
Cause	Difference (%)	Difference (%)		Difference (%)	Difference (%)	
**External causes	50	52	2	27	18	-9
Drug related	179	80	-99	98	48	-50
Cancer	24	8	-16	44	36	-8
Suicide	112	31	-81	56	-10	-66
Alcohol related	218	105	-113	180 +	116 +	-64
Respiratory disease	79	152	73	109	129	20
Ischaemic heart disease (IHD)	107	155	48	52	62	10
Cerebrovascular disease (CVD)	89	118	29	111	96	-15
Diabetes	195	182	-14	167	156	-11
Motor vehicle traffic accidents (MVTA)	36	37	1	-16	-34	-18
All causes***	49 +	32	-17	34 +	18	-16

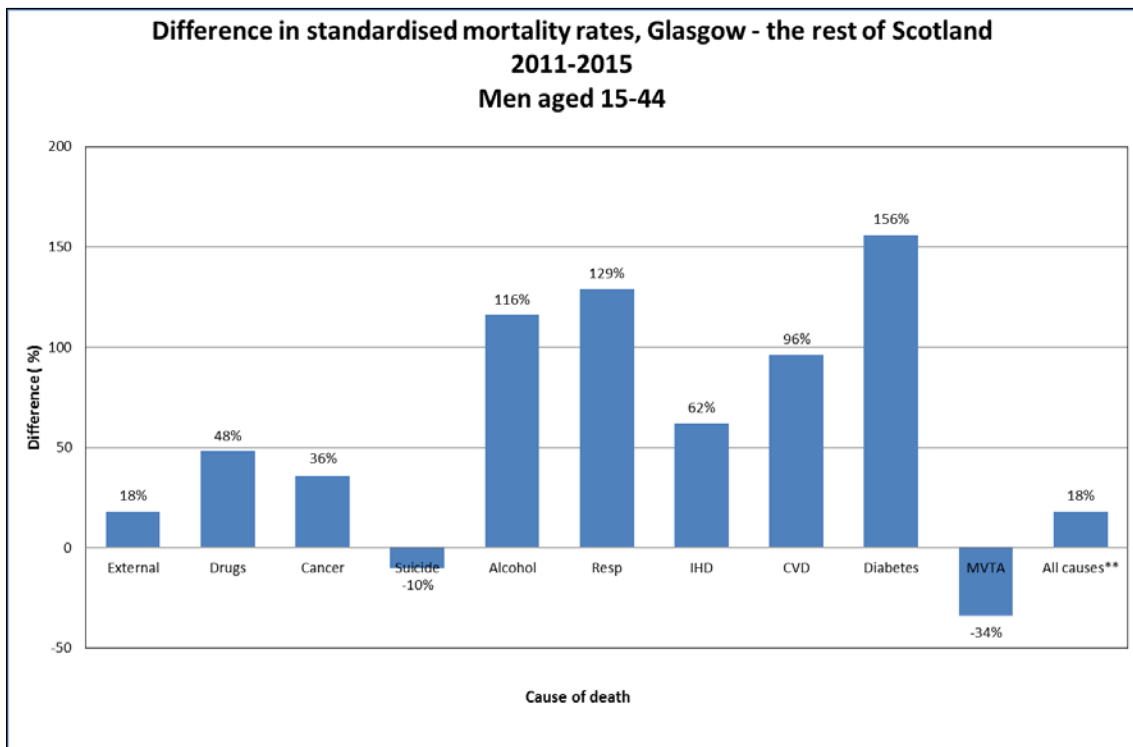
*Calculated as the percentage difference in standardised mortality rate between Glasgow and the rest of Scotland. Negative figures in the % difference columns indicate lower rates in Glasgow. In the Change column: red figures indicate increases in the Glasgow excess; green figures indicate reductions in the Glasgow excess or that rates have become increasingly lower in Glasgow. **This is a change in percentage points (e.g. from 10% to 5%=5 percentage point change) *** All-cause mortality rates are for single years (1981-2015). + indicates a statistically significant difference (based on non-overlapping 95% confidence intervals).

Figure 22: Difference in standardised mortality rates, Glasgow versus the rest of Scotland, 2011-2015, women aged 15-44.



IHD=Ischaemic heart disease; Resp=Respiratory disease; CVD=Cerebrovascular disease; MVTA=Motor vehicle traffic accidents. **All-cause rates are compared for individual years (i.e. 1981 and 2015).

Figure 23: Difference in standardised mortality rates, Glasgow versus the rest of Scotland, 2011-2015, men aged 15-44.



IHD=Ischaemic heart disease; Resp=Respiratory disease; CVD=Cerebrovascular disease; MVTA=Motor vehicle traffic accidents. **All-cause rates are compared for individual years (i.e. 1981 and 2015).

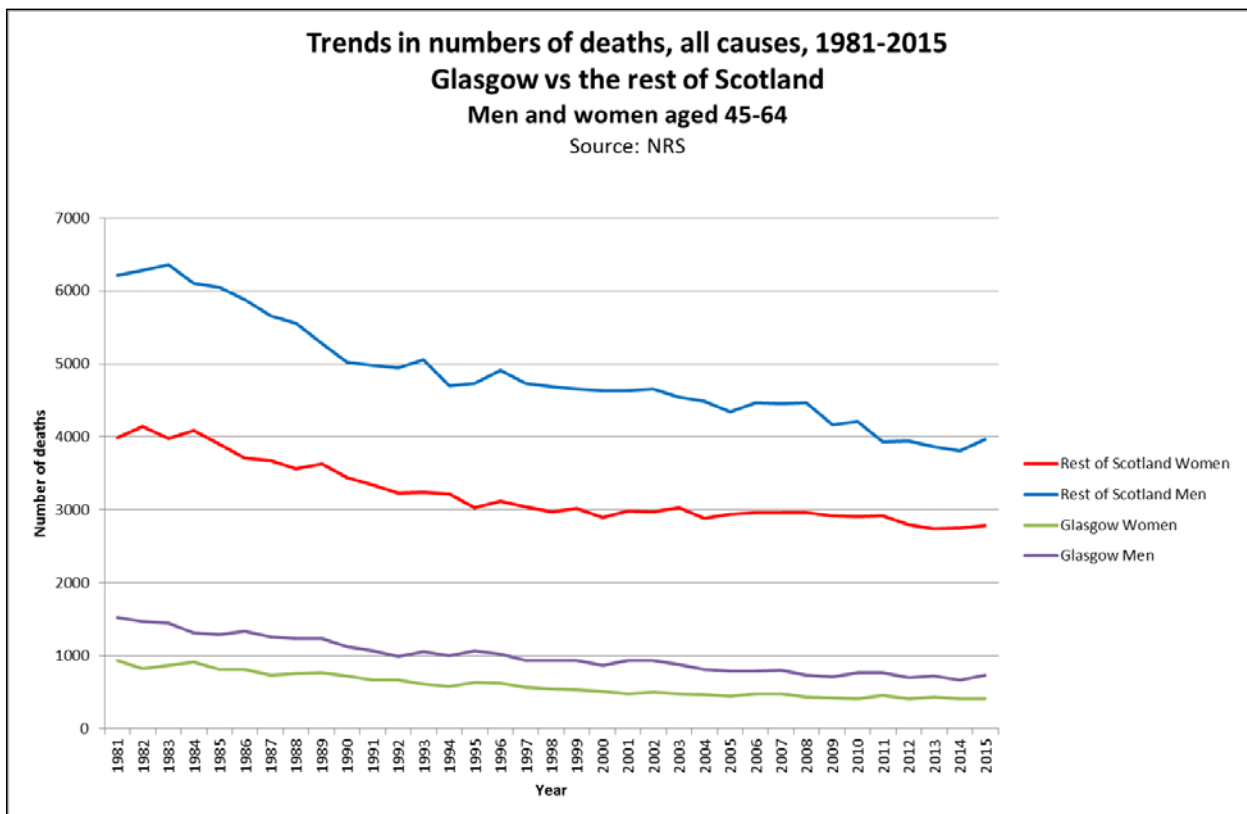
Age 45-64 years

Trends in numbers of deaths

Deaths among people aged 45-64 accounted for 13.8% of all Scottish deaths in 2015.

The number of deaths among people aged 45-64 decreased in Scotland as a whole between 1981 and 2015: by 47% among women and 54% among men. In Glasgow, the decrease amounted to 45% for both women and men. In the rest of Scotland, the number of deaths decreased by 46% among women and 54% among men (Figure 24).

Figure 24: Trends in numbers of deaths, all causes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64.



While the total number of deaths decreased for both men and women in Glasgow, deaths related to alcohol, drugs, and diabetes were more frequent among both genders in 2015 than in 1981.

Similarly, in the rest of Scotland, deaths related to alcohol and drugs were more frequent among both women and men in 2015 than in 1981, but there was also an increase in suicide and self-inflicted injury among men.

Among Glaswegian women, the two most common causes of death in 1981 were cancer (38% of deaths) and ischaemic heart disease (22% of deaths). In 2015, the two most common causes were cancer (46% of deaths) and respiratory disease (14% of deaths) (Figure 25). This pattern was very similar among women in the rest of Scotland.

Among Glaswegian men – as among Glaswegian women – the largest relative decrease between 1981 and 2015 was seen in deaths due to ischaemic heart disease, which was the most common cause of death in 1981 (37% of deaths), followed by cancer (27% of deaths). However, in 2015 ischaemic heart

disease was still the second most frequent cause (17% of deaths) after cancer (32% of deaths) (Figure 26). The pattern in relative distribution of causes was very similar among men in the rest of Scotland.

Figure 25: relative distribution of causes of death, 1981-2015, Glasgow, women aged 45-64.

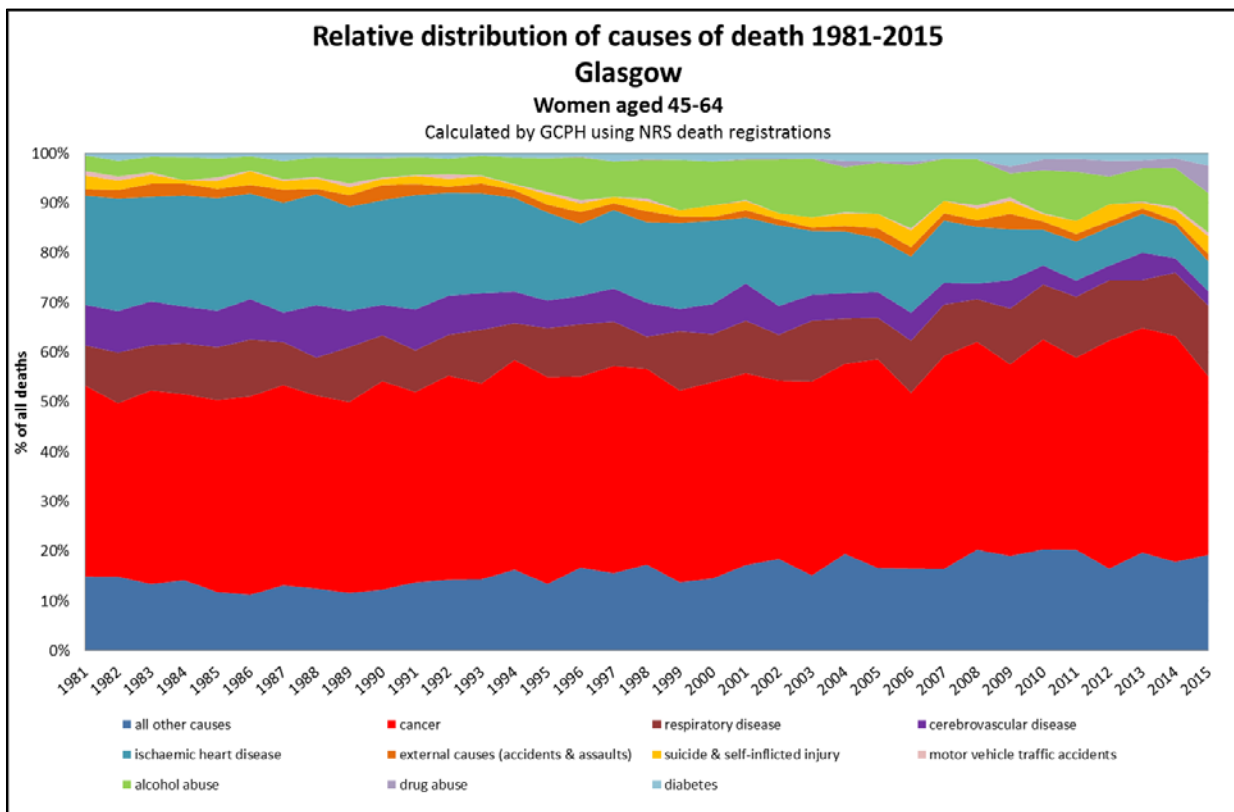
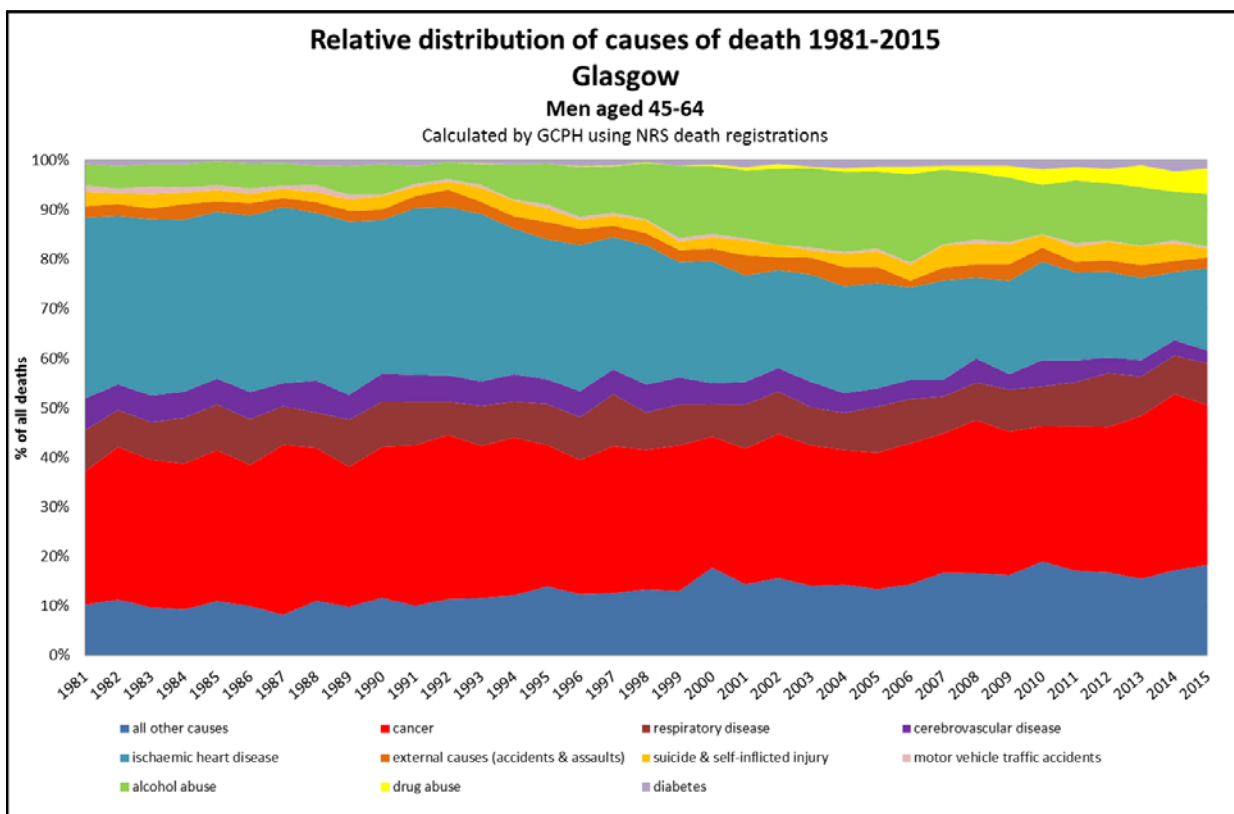


Figure 26: Relative distribution of causes of death, 1981-2015, Glasgow, men aged 45-64.



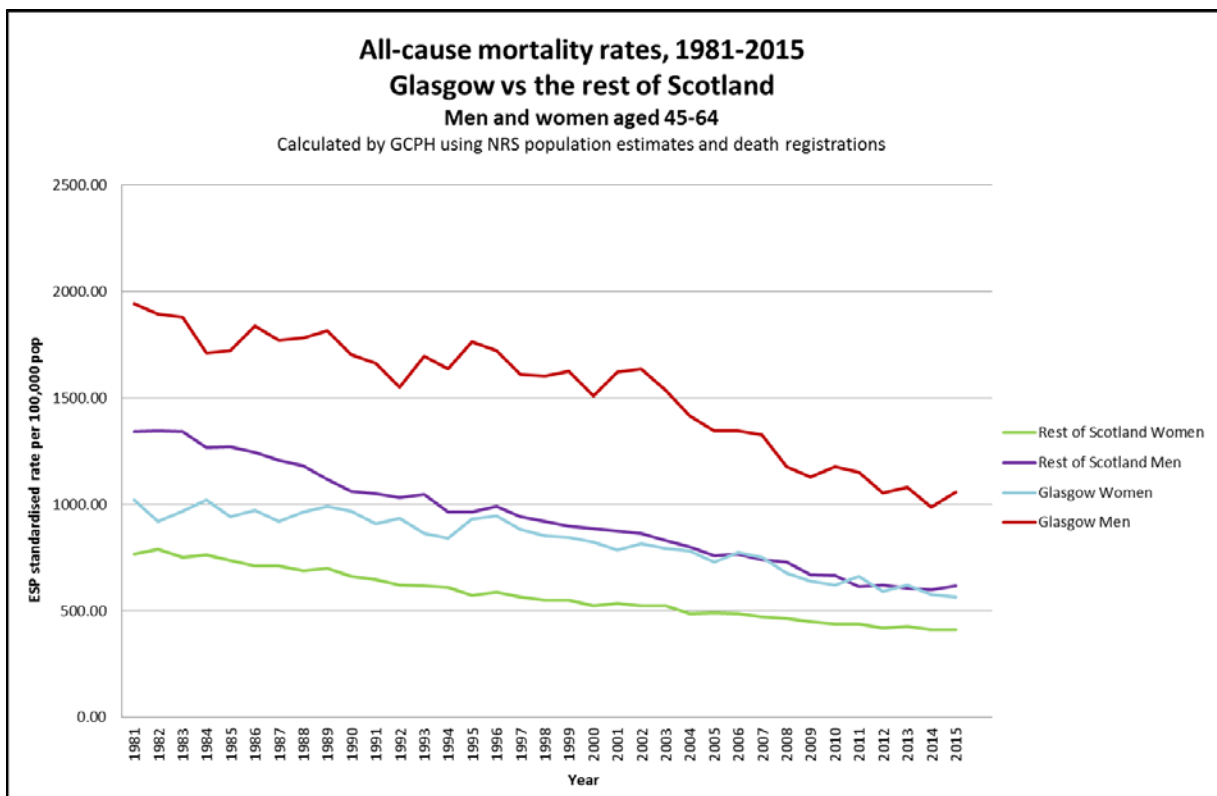
Trends in all-cause mortality rates

The all-cause mortality rate (deaths per 100,000 population, age standardised) declined between 1981 and 2015 across Scotland, but remained higher in Glasgow than in the rest of Scotland.

Within Glasgow, the mortality rate fell from 1,022.0 in 1981 to 563.8 in 2015 (-45%) among women and from 1,943.0 in 1981 to 1,059.6 in 2015 (-45%) among men. In the rest of Scotland, the mortality rate among women fell from 765.3 in 1981 to 410.9 in 2015 (-46%) and from 1,343.0 in 1981 to 617.2 in 2015 (-54%) among men. However, the male all-cause mortality rate increased between 2014 and 2015 in Glasgow and in the rest of Scotland (Figure 27, Table A3 & A4 in Appendix).

The difference in all-cause mortality rates between Glasgow and the rest of Scotland fluctuated for both genders, but showed net increases between 1981 and 2015, particularly for men. Among women in 1981, the rate in Glasgow was 34% higher than that in the rest of Scotland, and in 2015 this excess had increased slightly to 37%. Among men in 1981, the rate was 45% higher in Glasgow than in the rest of Scotland, but by 2015, this had increased to +72% (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 27: All-cause mortality rates, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64.



Trends in cause-specific mortality rates

Cancer

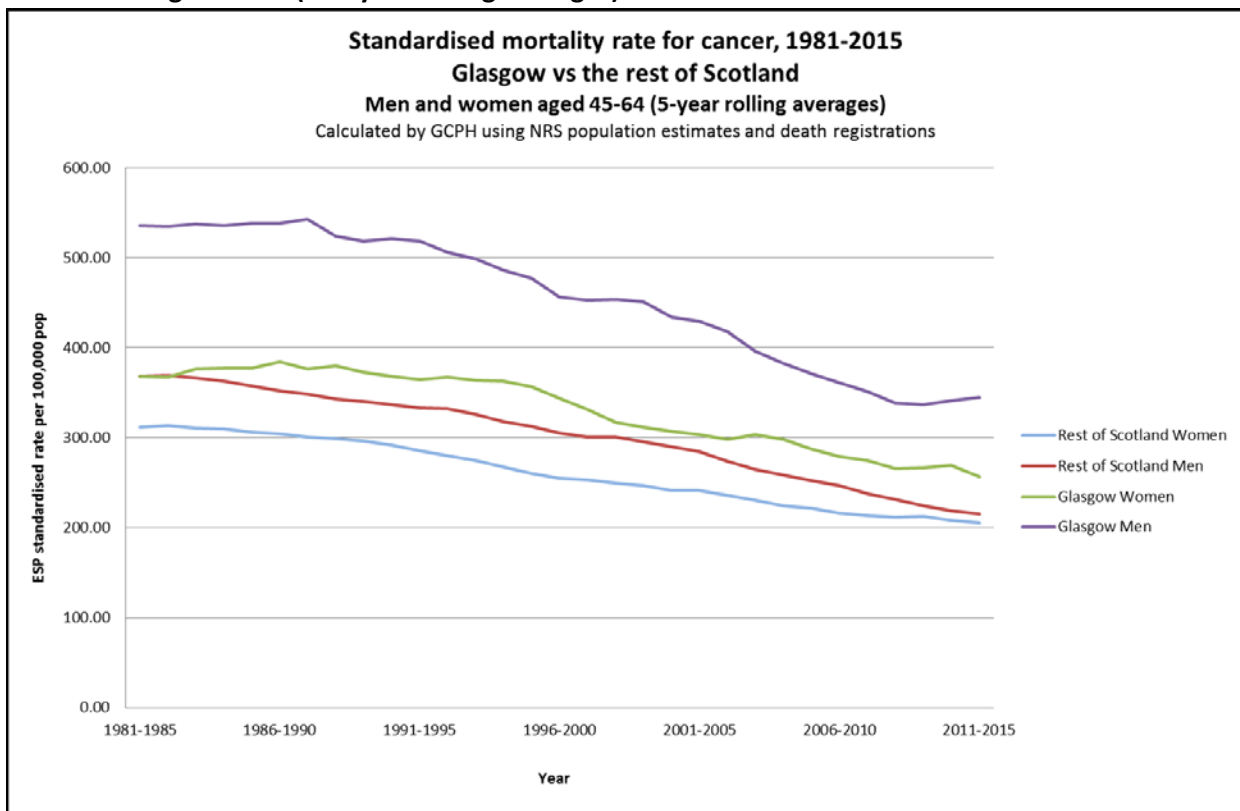
In 2011-2015, cancer (all malignant neoplasms) accounted for 39% of deaths among 45-64 year olds in Scotland. The rate of mortality (deaths per 100,000 population, age standardised) from cancer declined steadily among people in this age group across Scotland, although slightly less so in Glasgow (Figure 28, Tables A3 & A4 in Appendix).

The female cancer mortality rate in Glasgow declined from 368.1 in 1981-1985 to 256.3 in 2011-2015 (-30%), while the male rate in Glasgow declined from 535.7 to 345.1 in the same period (-36%).

In the rest of Scotland, the female rate declined from 311.5 in 1981-1985 to 205.0 in 2011-2015 (-34%), while the male declined from 367.9 to 215.1 in the same period (-42%).

The gap between rates of cancer mortality in Glasgow and in the rest of Scotland increased; among women from +18% in Glasgow in 1981-1985 to 25% in Glasgow in 2011-2015, and among men from +46% in Glasgow in 1981-1985 to +60% in Glasgow in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48). It is also worth noting that the Glaswegian male cancer mortality rate increased slightly between 2009-2013 and 2011-2015 (+3%).

Figure 28: Standardised mortality rate for cancer, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Ischaemic heart disease

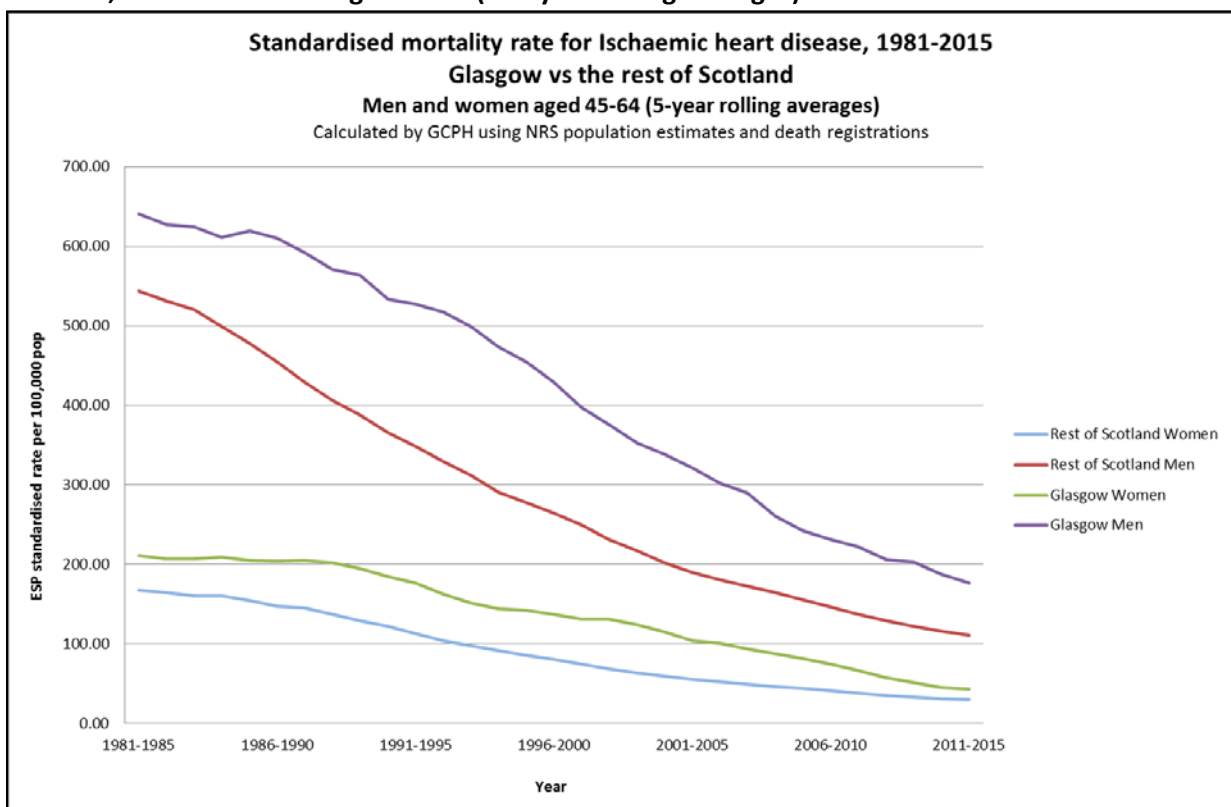
In 2011-2015, approximately 14% of deaths among 45-64 year olds in Scotland were attributed to ischaemic heart disease (IHD). There were, however, large reductions in mortality rates from IHD between 1981 and 2015 across Scotland (Figure 29, Tables A3 & A4 in Appendix).

In Glasgow, the female mortality rate fell from 211.3 in 1981-1985 to 43.4 in 2011-2015 (-79%), and the male rate fell from 640.2 in 1981-1985 to 176.2 in 2011-2015 (-72%).

In the rest of Scotland, the female rate fell from 167.8 in 1981-1985 to 30.0 in 2011-2015 (-82%), and the male rate fell from 543.6 in 1981-1985 to 111.2 in 2011-2015 (-80%).

The slightly slower pace of improvement in Glasgow compared with the rest of Scotland (particularly among men) led to an increase in the gap between the IHD mortality rates in Glasgow and in the rest of Scotland, although the absolute difference between the two sets of rates decreased. Among women in 1981-1985, the rate was 26% higher in Glasgow than in the rest of Scotland, whereas in 2011-2015, it was 45% higher. Among men, the difference increased from 18% in 1981-1985 to 58% in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 29: Standardised mortality rate for ischaemic heart disease, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



External causes

In 2011-2015, this category accounted for approximately 8% of the total burden of mortality among 45-64 year olds in Scotland.

The rates of mortality (number of deaths per 100,000 population, age standardised) from external causes in this age group decreased across Scotland between 1981 and 2015, but more so in the rest of Scotland than in Glasgow (Figure 30, Tables A3 & A4 in Appendix).

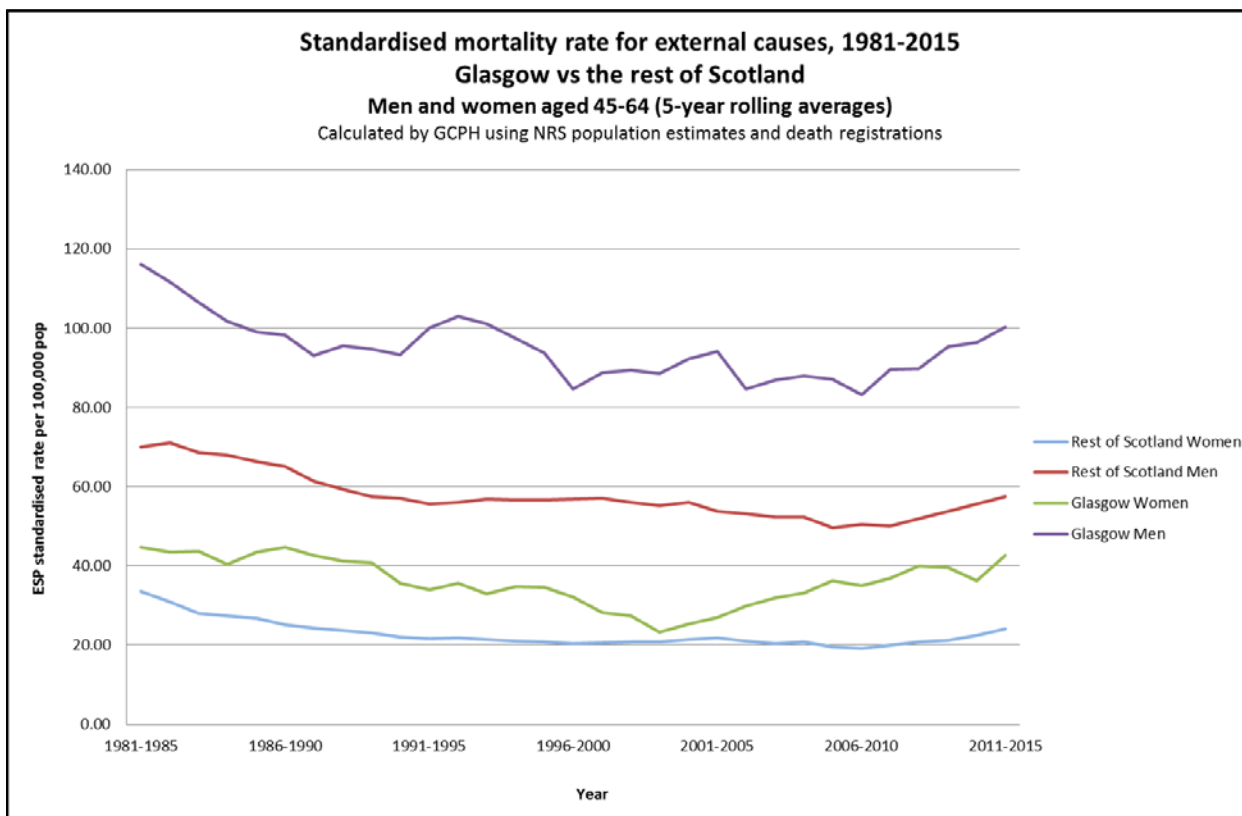
However, the mortality trend among women as well as men for this cause is slightly 'u-shaped'. Female mortality declined until the early 2000s but rose again towards 2015, while male mortality, which was in decline generally from the early 1980s, reached a low point in 2006-2010, but rose again towards 2015. As a result, over the whole period since the early 1980s, there has only been a modest reduction in mortality from external causes in the 45-64 years age group.

Among Glaswegian women, the rate decreased from 44.8 in 1981-1985 to 42.7 in 2011-2015 (-5%). The rate among Glaswegian men decreased from 116.1 in 1981-1985 to 100.4 in 2011-2015 (-14%).

Among women in the rest of Scotland, the rate decreased from 33.6 in 1981-1985 to 24.1 in 2011-2015 (-28%), while the rate among men in the rest of Scotland decreased from 70.0 in 1981-1985 to 57.6 in 2011-2015 (-18%).

The difference in mortality rates between Glasgow and the rest of Scotland increased in the period, particularly for women. In 1981-1985, the female rate in Glasgow was 33% higher than the female rate in the rest of Scotland, and in 2011-2015, the difference had increased to 78%. The male rate was 66% higher in Glasgow than in the rest of Scotland in 1981-1985, and in 2011-2015, it was 74% higher (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 30: Standardised mortality rate for external causes, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Alcohol-related deaths

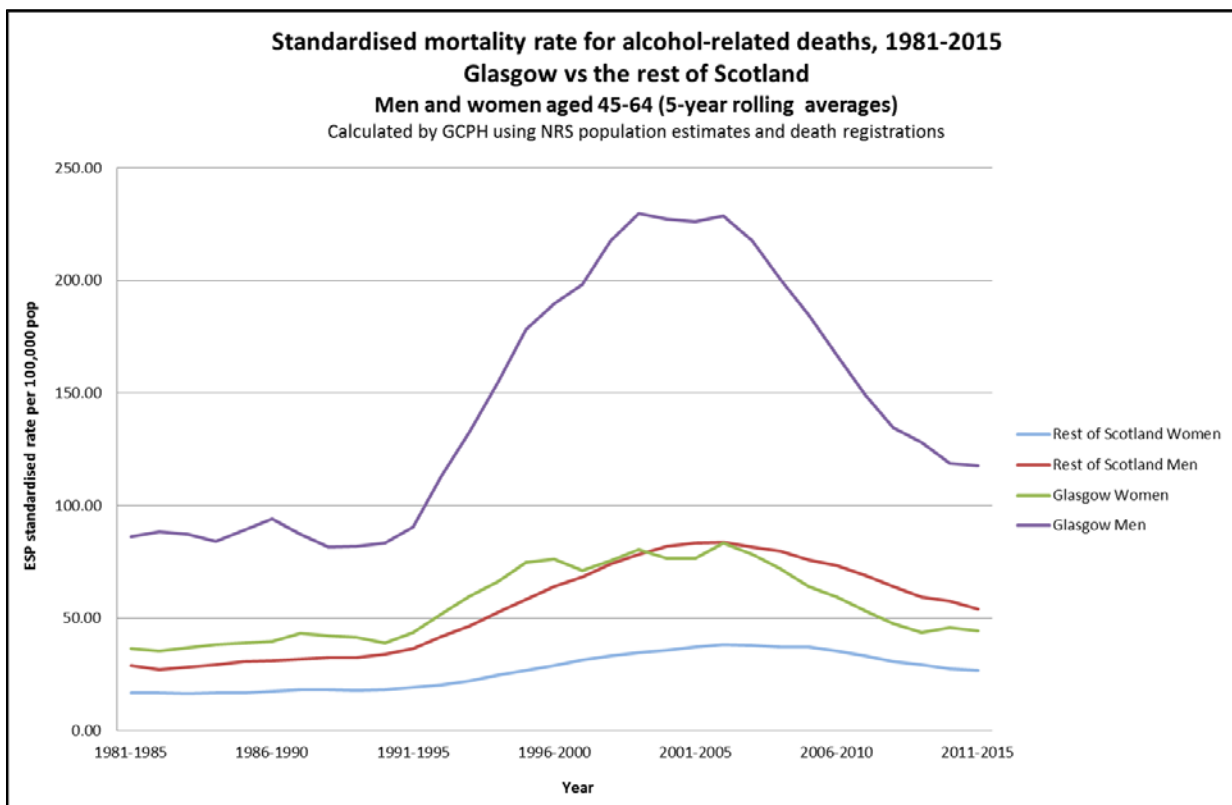
In 2011-2015, approximately 8% of deaths among 45-64 year olds in Scotland were alcohol related. The rate of alcohol-related mortality increased quite dramatically in this age group across Scotland between the early 1980s and the mid-2000s and has since then declined, most notably in Glasgow (Figure 31, Tables A3 & A4 in Appendix).

Taking account of these differing trends, there was still an overall rise in alcohol-related mortality in Glasgow and in the rest of Scotland between 1981 and 2015. In Glasgow, the female rate showed a net increase of 22%, from 36.4 in 1981-1985 to 44.4 in 2011-2015, while the male rate showed a net increase of 37%, from 86.1 in 1981-1985 to 117.6 in 2011-2015.

In the rest of Scotland, the female rate increased by 59%, from 16.8 in 1981-1985 to 26.7 in 2011-2015, and the male rate increased by 87%, from 28.9 to 54.1 in the same period.

The different trajectories of mortality rates in Glasgow compared with the rest of Scotland have contributed to a reduction in the mortality gap between the city and the rest of Scotland. In 1981-1985, the female alcohol-related mortality rate in Glasgow was 116% higher than the female rate in the rest of Scotland, whereas in 2011-2015, it was 66% higher. The excess in the male alcohol-related mortality rate in Glasgow reduced from being 198% higher than the rest of Scotland in 1981-1985 to being 118% higher in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 31: Standardised mortality rate for alcohol-related deaths, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Respiratory disease

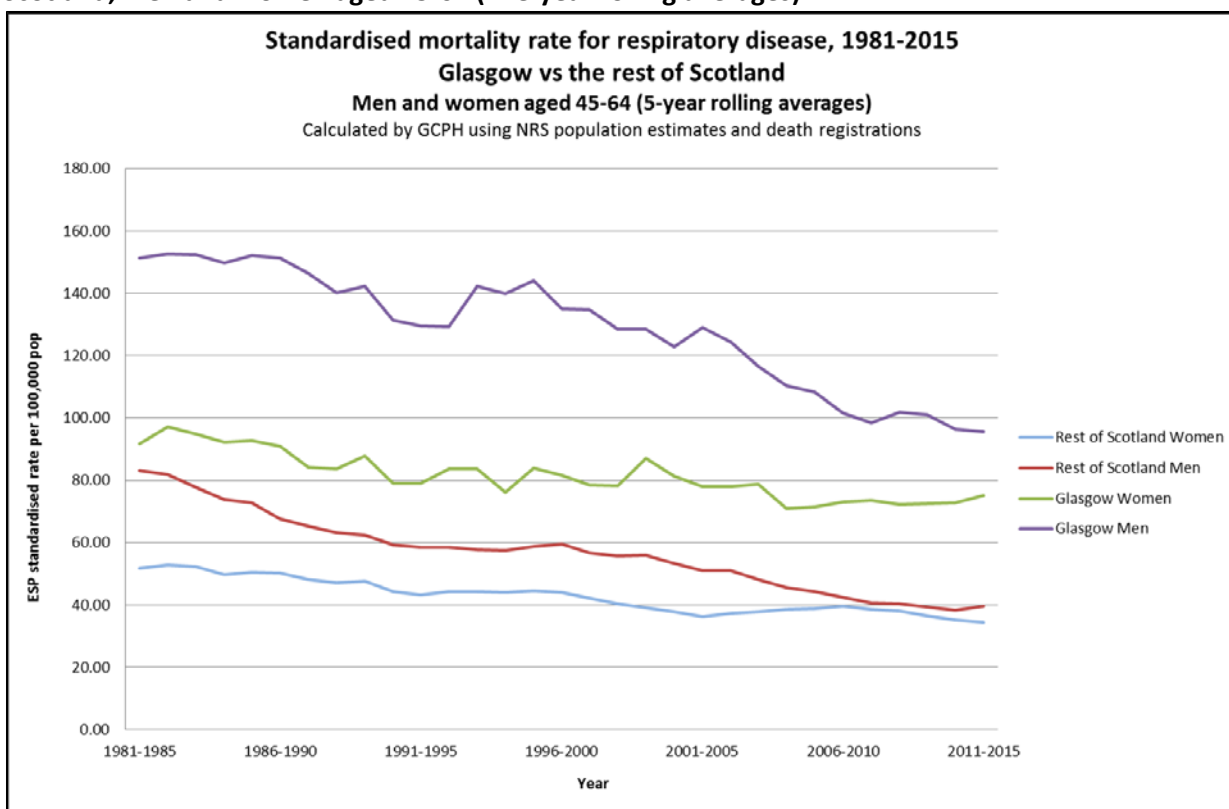
Respiratory diseases accounted for just less than 8% of deaths among 45-64 year olds in Scotland in 2011-2015. Mortality rates from respiratory disease (deaths per 100,000 population, age standardised) have been declining as a cause of death among 45-64 year olds since the early 1980s (Figure 32, Tables A3 & A4 in Appendix), but the decline has been smaller in Glasgow than in the rest of Scotland, and it appears to have stalled in recent years (especially among females).

The mortality rate among Glaswegian women fell from 91.7 in 1981-1985 to 75.0 in 2011-2015 (-18%), and among Glaswegian men the rate fell from 151.4 in 1981-1985 to 95.6 in 2010-2015 (-37%).

Among women in the rest of Scotland, the rate fell from 51.9 in 1981-1985 to 34.4 in 2011-2015 (-34%). The largest reduction observed was among men in the rest of Scotland, where the rate fell from 83.1 in 1981-1985 to 39.7 in 2011-2015 (-52%).

Comparatively larger reductions in respiratory disease mortality in the rest of Scotland have increased the gap in rates between the rest of Scotland and Glasgow. In 1981-1985, the female rate in Glasgow was 77% higher than the female rate in the rest of Scotland, but by 2011-2015 it was 118% higher. Among men in Glasgow, the rate rose from being 82% higher than that among men in the rest of Scotland in 1981-1985, to being 141% higher in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 32: Standardised mortality rate for respiratory disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Cerebrovascular disease

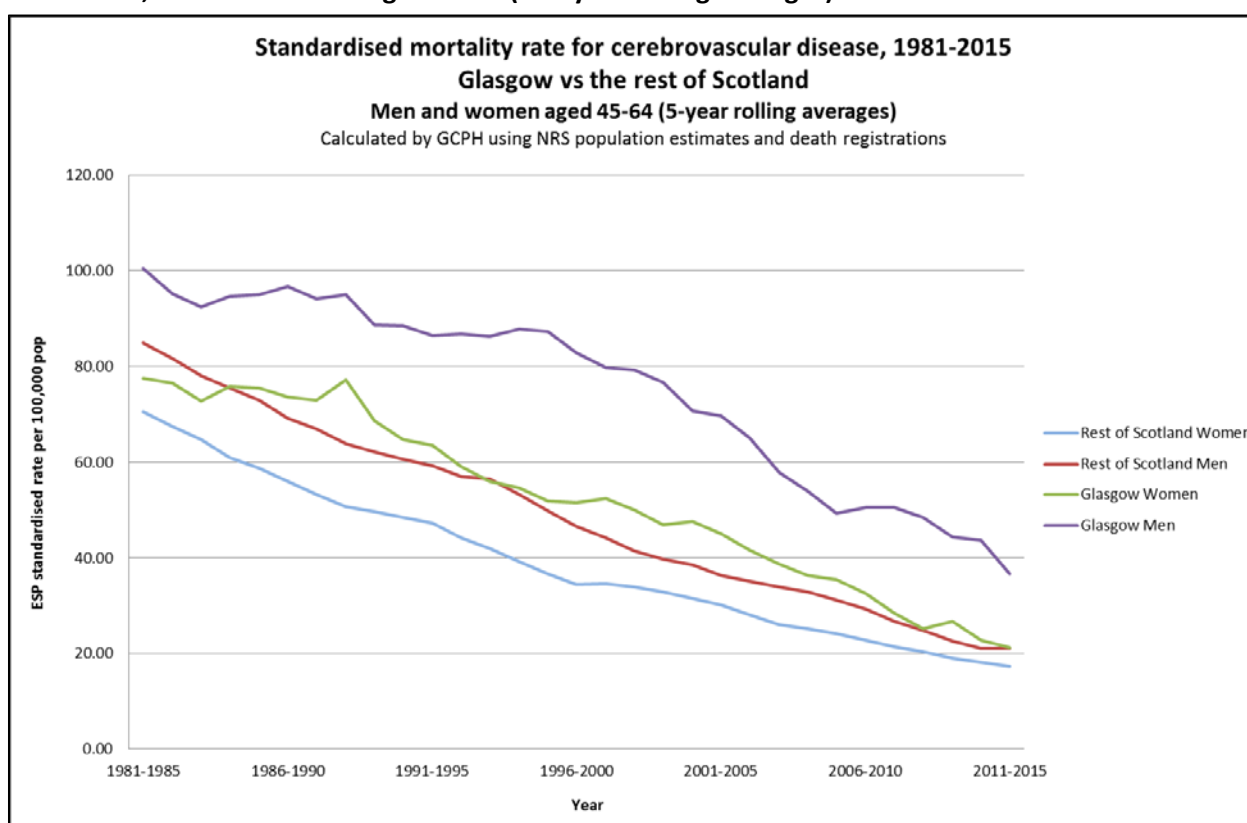
In 2011-2015, cerebrovascular disease (CVD) accounted for approximately 4% (1,442 cases over five years) of the total burden of mortality among 45-64 year olds in Scotland. The period between 1981 and 2015 saw large reductions in mortality from CVD in this age group, both in Glasgow and in the rest of Scotland (Figure 33, Tables A3 & A4 in Appendix).

Among Glaswegian women, the CVD mortality rate declined from 77.6 in 1981-1985 to 21.3 in 2011-2015 (-73%), and among Glaswegian men it declined from 100.5 in 1981-1985 to 36.6 in 2011-2015 (-64%).

In the rest of Scotland, the female rate declined from 70.5 in 1981-1985 to 17.3 in 2011-2015 (-75%), while the male rate declined from 84.9 in 1981-1985 to 21.0 in 2011-2015 (-75%).

Despite reductions across the country, the difference between Glasgow and the rest of Scotland increased in the period, mainly driven by the slower rate of reduction in CVD mortality among Glaswegian men. In 1981-1985, the rate among Glaswegian men was 18% higher than the rate among men in the rest of Scotland, but in 2011-2015, the Glasgow rate had grown to be 74% higher. Among women, the rate in Glasgow was 10% higher in 1981-1985 and 23% higher in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 33: Standardised mortality rate for cerebrovascular disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Suicide and self-inflicted injury

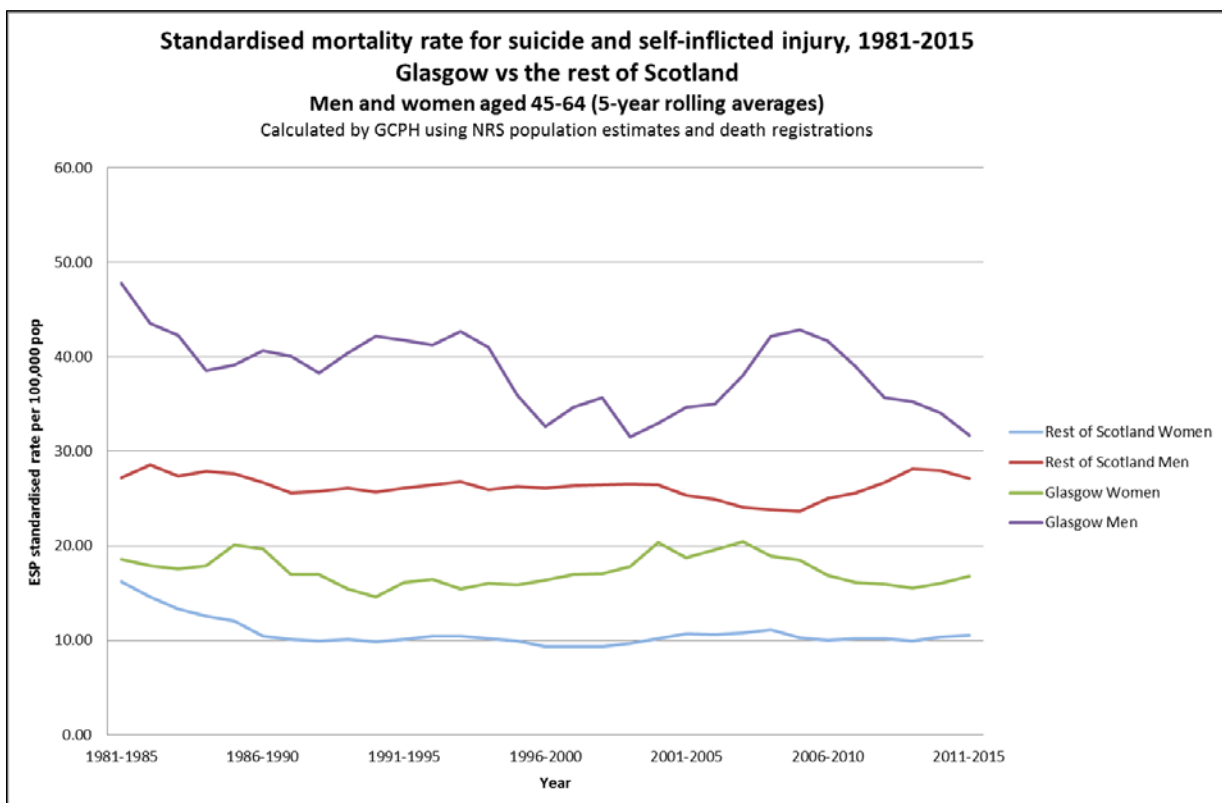
In 2011-2015, approximately 4% (1,418 cases over five years) of deaths among 45-64 year olds in Scotland were suicides or caused by self-inflicted injury. Rates of mortality (number of deaths per 100,000 population, age standardised) from suicide and self-inflicted injury in this age group declined in Scotland as a whole between 1981 and 2015, but gender and geographic differences are apparent (Figure 34, Tables A3 & A4 in Appendix).

In Glasgow, the female rate decreased from 18.5 in 1981-1985 to 16.8 in 2011-2015 (-10%) and the male rate decreased from 47.7 to 31.7 in that period (-34%).

In the rest of Scotland, the female rate decreased from 16.2 in 1981-1985 to 10.5 in 2011-2015 (-35%), while the male rate showed no notable change (from 27.2 to 27.1 (-0.4%)), in the same period.

The gap between suicide mortality rates in Glasgow and in the rest of Scotland increased for women (from +15% to +59% in Glasgow), but decreased for men (from +76% to +17% in Glasgow) (see Table 3 and Figures 38 & 39, pages 47-48). This decrease was principally because of a large reduction in suicides in Glasgow over the last ten years of the period analysed.

Figure 34: Standardised mortality rate for suicide and self-inflicted injury, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Drug-related deaths

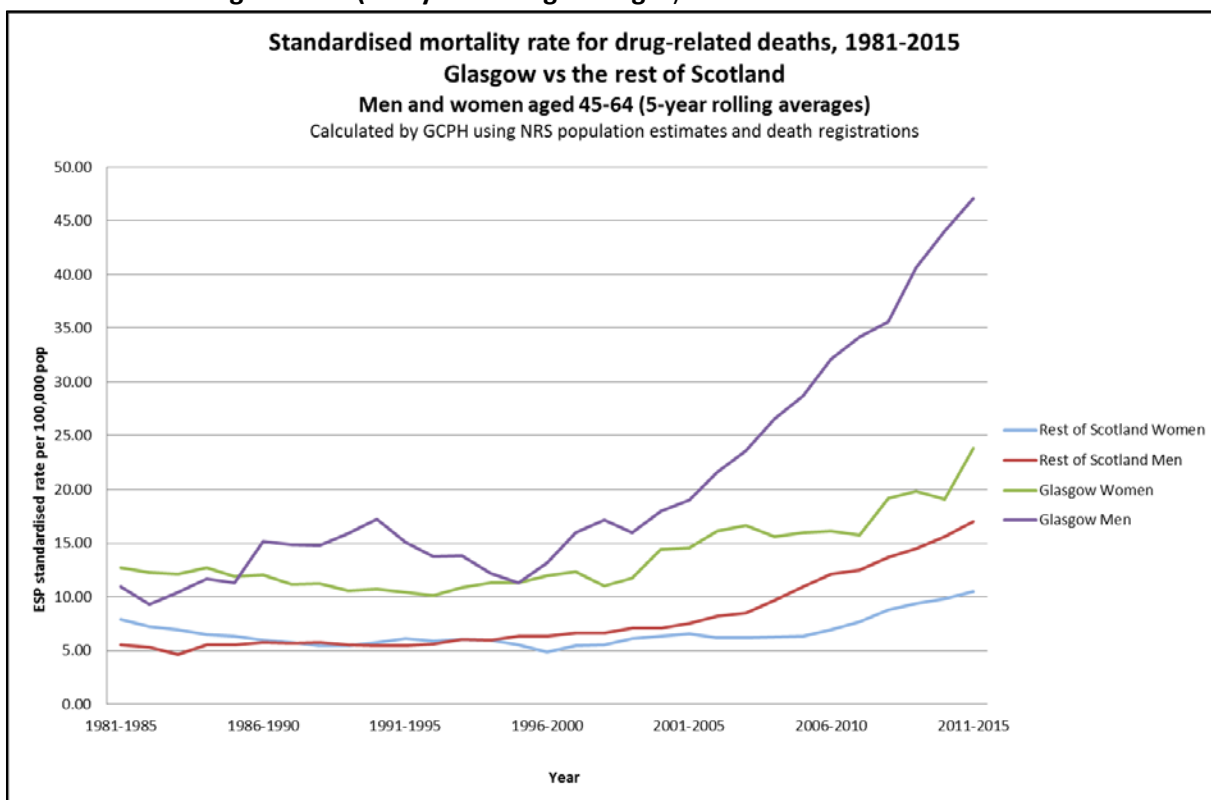
In 2011-2015, 3% (1,161 cases over five years) of deaths among 45-64 year olds in Scotland were drug related. Across Scotland, drug-related mortality rates (number of deaths per 100,000 population, age standardised) among people in this age group increased substantially from the late 1990s towards 2015, particularly among men, and most notably in Glasgow (Figure 35, Tables A3 & A4 in Appendix).

The rate among Glaswegian women showed an increase from 12.7 in 1981-1985 to 23.8 in 2011-2015 (+87%), and the rate among Glaswegian men increased from 10.9 in 1981-1985 to 47.1 in 2011-2015 (+330%).

In the rest of Scotland, the female rate increased from 7.9 in 1981-1985 to 10.5 in 2011-2015 (+32%), while the male rate increased from 5.5 to 17.0 (+209%) in the same period.

The gap in drug-related mortality between Glasgow and in the rest of Scotland widened in the period. In 1981-1985 the female rate in Glasgow was 61% higher than in the rest of Scotland, and in 2011-2015 it was 127% higher. The gap in male rates increased from being 99% higher in Glasgow in 1981-1985 to being 177% higher in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 35: Standardised mortality rate for drug-related deaths, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Diabetes

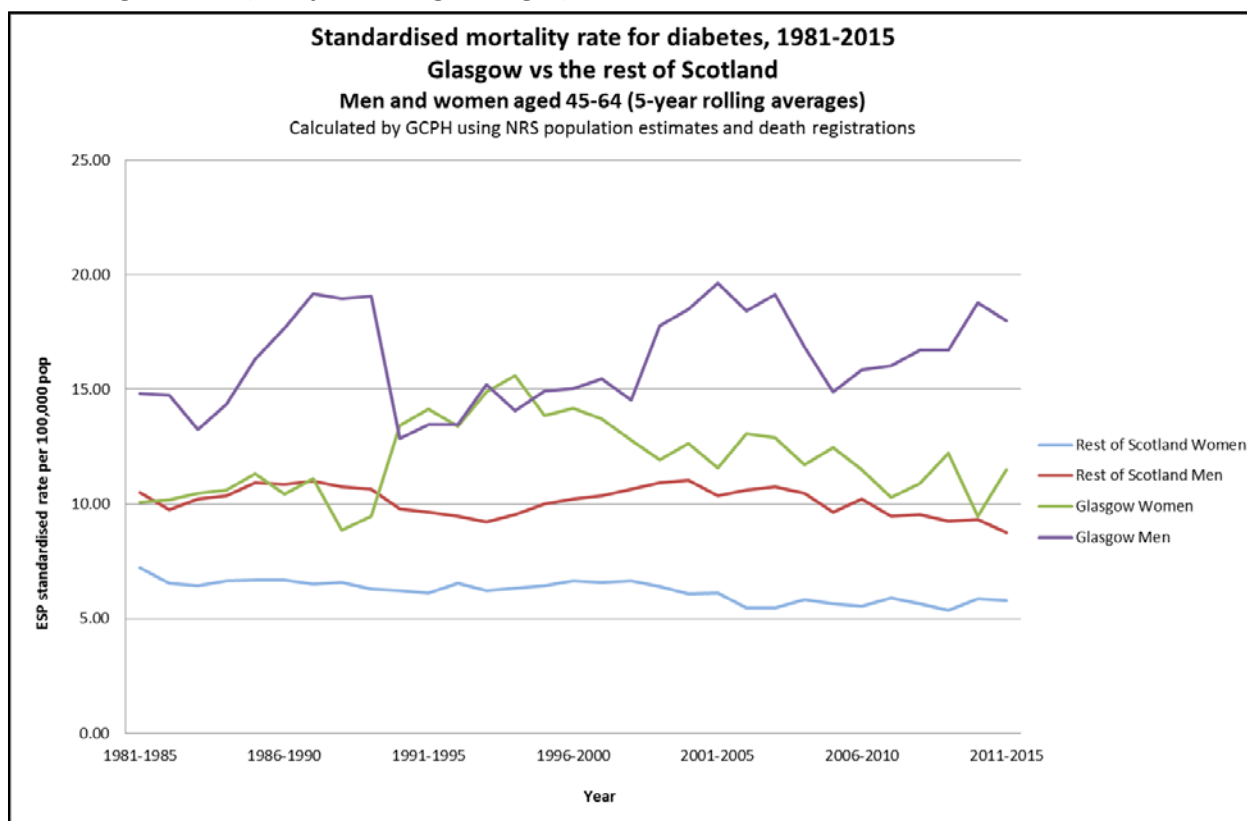
Mortality from diabetes is relatively low among 45-64 year olds in Scotland. In 2011-2015, approximately 1% (559 cases over five years) of all deaths among people in this age group were attributed to diabetes, and analyses split by gender and location should be interpreted with caution. The overall trend in Glasgow does, however, appear to be increasing for men (Figure 36, Tables A3 & A4 in Appendix).

After a peak in 2006-2010, the rate among Glaswegian women decreased substantially, only to increase again towards 2015, resulting in a small overall increase from 10.1 in 1981-1985 to 11.5 in 2011-2015 (+14%). The diabetes mortality rate among Glaswegian men declined after a peak in 2001-2005, but showed an overall increase from 14.8 in 1981-1985 to 18.0 in 2011-2015 (+21%).

In the rest of Scotland, the rate among women decreased from 7.2 in 1981-1985 to 5.8 in 2011-2015 (-20%), and the rate among men decreased from 10.5 in 1981-1985 to 8.7 in 2011-2015 (-17%).

As a result of these contrasting trends, the gap in diabetes-related mortality widened between Glasgow and the rest of Scotland, for both genders. Among women, the excess in Glasgow increased from 39% in 1981-1985 to 98% in 2011-2015. Among men, the difference increased from 41% in 1981-1985 to 106% in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 36: Standardised mortality rate for diabetes, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Motor vehicle traffic accidents

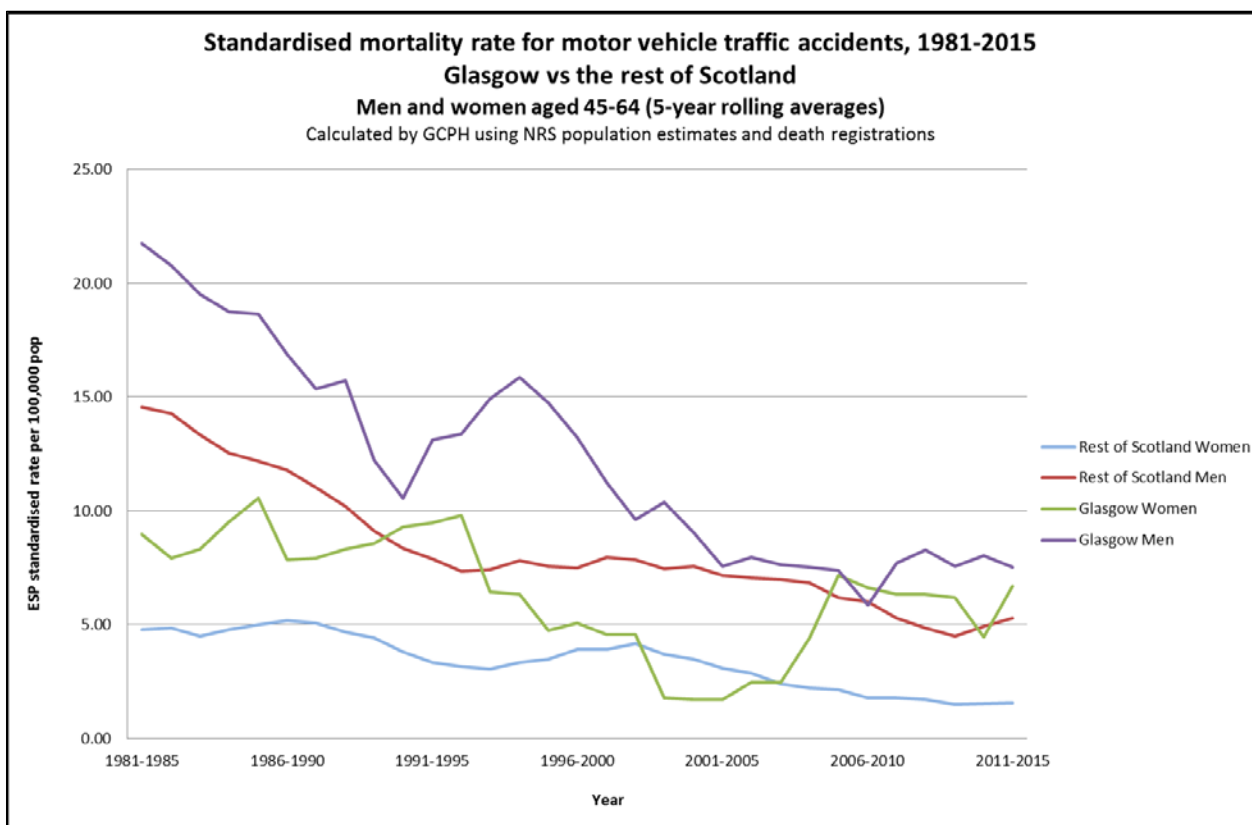
Motor vehicle traffic accident (MVTA) mortality among 45-64 year olds declined substantially between 1981 and 2015, and in 2011-2015, MVTAs accounted for less than 1% (239 cases over five years) of all deaths in this age group in Scotland as a whole. Given the number of deaths from this cause is relatively small, the mortality trends described here should be interpreted with caution.

The decline in mortality rates from MVTAs was smallest among Glaswegian women and from the early 2000s female MVTA mortality rates have actually risen in Glasgow (Figure 37, Tables A3 & A4 in Appendix). In Glasgow, the mortality rate among women declined from 9.0 in 1981-1985 to 6.7 in 2011-2015 (-25%). Among men in Glasgow, the rate dropped from a high of 21.8 in 1981-1985 to 7.5 in 2011-2015 (-65%).

Among women in the rest of Scotland, the rate fell from 4.8 in 1981-1985 to 1.6 in 2011-2015 (-67%). In the same period, the rate among men in the rest of Scotland fell from 14.6 to 5.3 (-64%).

The gap between Glasgow and the rest of Scotland in terms of mortality rates as a result of MVTAs increased for women and reduced slightly for men. In 1981-1985, mortality among women in Glasgow was 88% higher than the rate among women in the rest of Scotland, whereas in 2011-2015 it was 325% higher. For men, the Glasgow rate reduced slightly from being 49% higher than the male rate the rest of Scotland in 1981-1985, to being 43% higher in 2011-2015 (see Table 3 and Figures 38 & 39, pages 47-48).

Figure 37: Standardised mortality rate for motor vehicle traffic accidents, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 45-64 (five-year rolling averages).



Overview of trends

Table 3 (and Figures 38 & 39, page 48) illustrates how the difference in standardised mortality rates between Glasgow and the rest of Scotland for this age group changed between 1981 and 2015. Levels of mortality for all causes remained higher in Glasgow – 37% higher for females and 72% higher for males in 2015 – and this gap had increased for both women and (more notably) for men.

For most of the causes analysed, the gap between Glasgow and the rest of Scotland widened over time. This was true for both men and women. Exceptions were alcohol-related mortality, for which the gap narrowed for both genders; MVTAs, for which the gap narrowed for men; and suicide, for which the gap narrowed substantially for men.

Table 3. Difference between standardised mortality rates (SMR) in Glasgow and the rest of Scotland, age 45-64.

Difference: SDR in Glasgow – SDR rest of Scotland (%)*						
Age 45-64						
Gender	Women			Men		
Year	1981-1985	2011-2015	Change**	1981-1985	2011-2015	Change**
Cause	Difference (%)	Difference (%)		Difference (%)	Difference (%)	
Cancer	18 +	25 +	7	46 +	60 +	14
Ischaemic heart disease (IHD)	26 +	45	19	18 +	58 +	40
External causes	33	78 +	45	66 +	74 +	8
Alcohol-related	116 +	66	-50	198 +	118 +	-80
Respiratory disease	77 +	118 +	41	82 +	141 +	59
Cerebrovascular disease (CVD)	10	23	13	18	74	56
Suicide	15	59	44	76 +	17	-59
Drug-related	61	127	66	99	177 +	78
Diabetes	39	98	59	41	106	65
Motor vehicle traffic accidents (MVTAs)	88	325	237	49	43	-6
All causes***	34 +	37 +	3	45 +	72 +	27

*Calculated as the percentage difference in standardised mortality rate between Glasgow and the rest of Scotland. Negative figures in the % difference columns indicate lower rates in Glasgow. In the Change column: red figures indicate increases in the Glasgow excess ; green figures indicate reductions in the Glasgow excess or that rates have become increasingly lower in Glasgow. ** This is a change in percentage points (i.e. from 10% to 5%=5 percentage points). *** All-cause mortality rates are for single years (1981-2015). + indicates a statistically significant difference (based on non-overlapping 95% confidence intervals).

Figure 38: Difference in standardised mortality rates, Glasgow versus the rest of Scotland, 2011-2015, women aged 45-64.

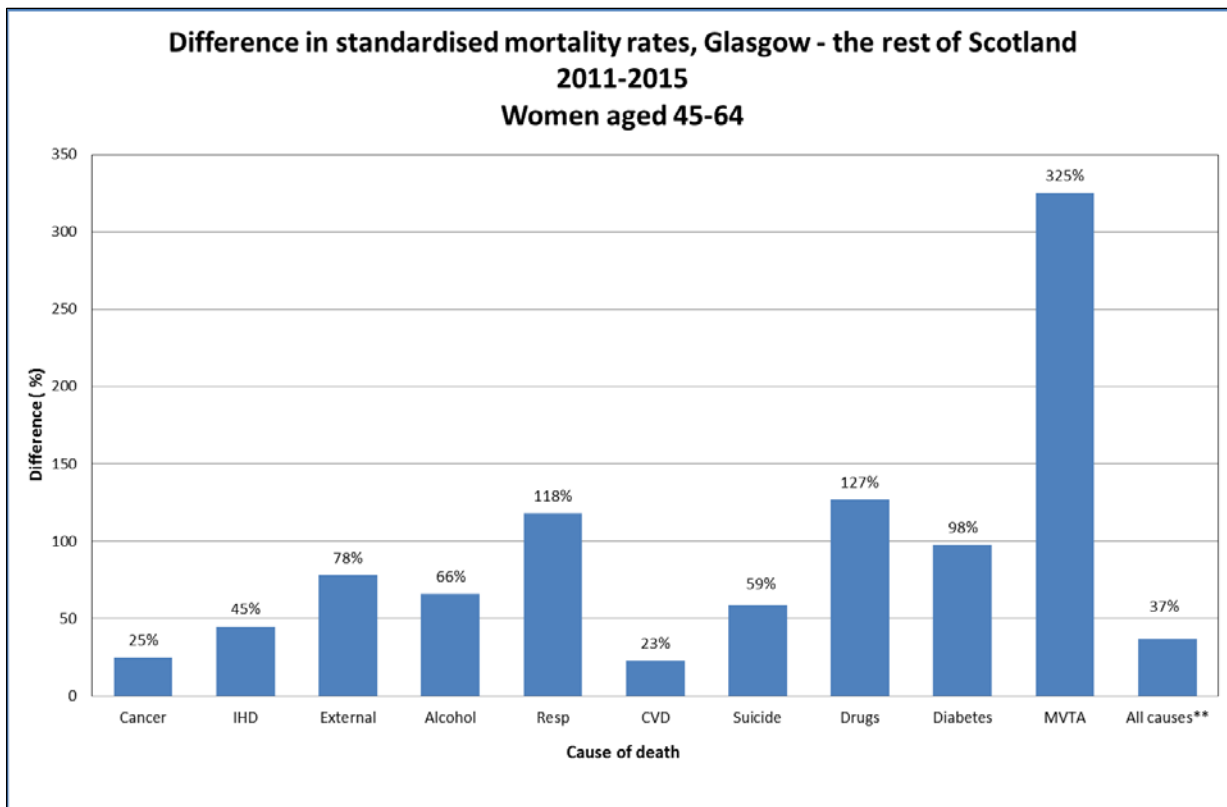
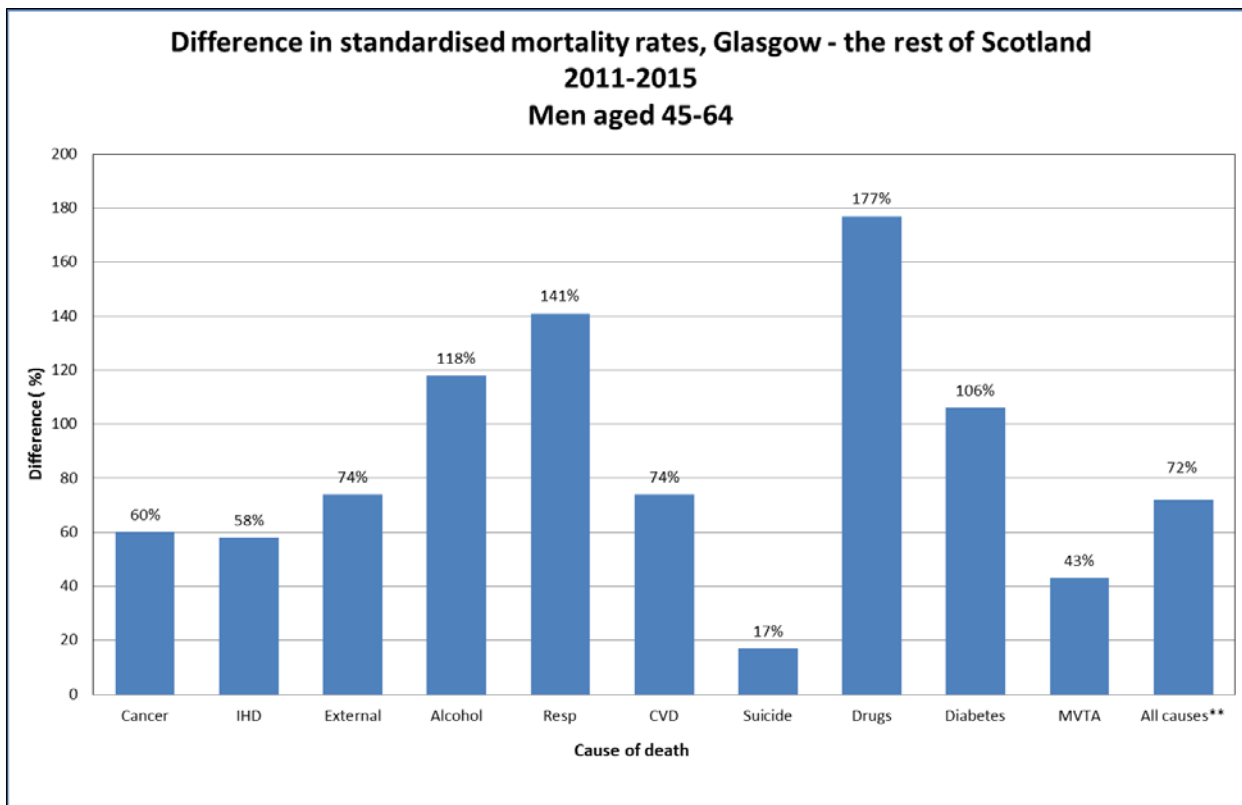


Figure 39: Difference in standardised mortality rates, Glasgow versus the rest of Scotland, 2011-2015, men aged 45-64.



IHD=Ischaemic heart disease; CVD=Cerebrovascular disease; MVTA=Motor vehicle traffic accidents. ** All-cause rates are compared for single years (i.e. 1981 and 2015).

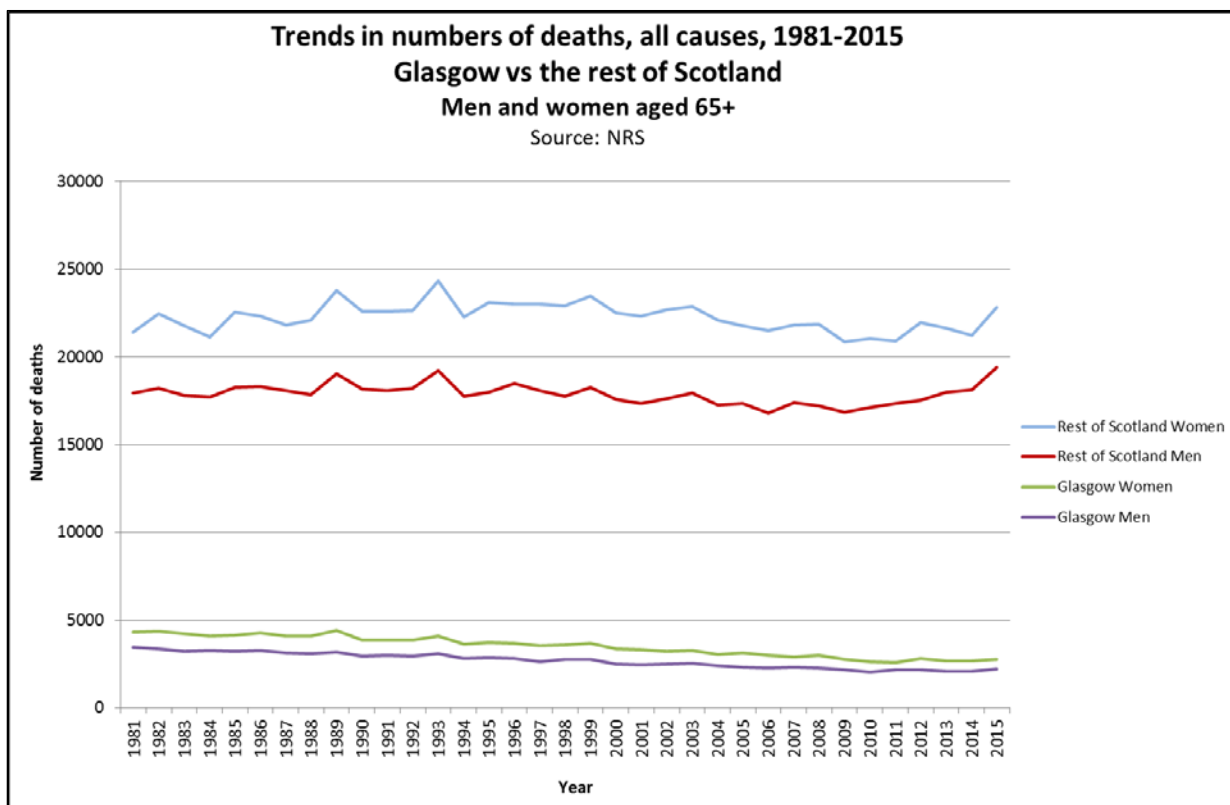
Age 65+

Trends in numbers of deaths

Deaths among people aged 65 and older accounted for 82.4% of all Scottish deaths in 2015.

Across the whole of Scotland, the overall number of deaths in this age group decreased slightly between 1981 and 2015, by 0.6% among women and 1.1% among men. These national trends mask large geographical differences. In Glasgow, the decreases amounted to 37% among women and 35% among men. In the rest of Scotland, there was a 7% increase in female deaths and an 8% increase for men (Figure 40). Across Scotland and for both genders, the number of deaths increased between 2014 and 2015. It is worth bearing in mind that trends in deaths are related to population changes and, particularly in this age group, to increases in the elderly population.

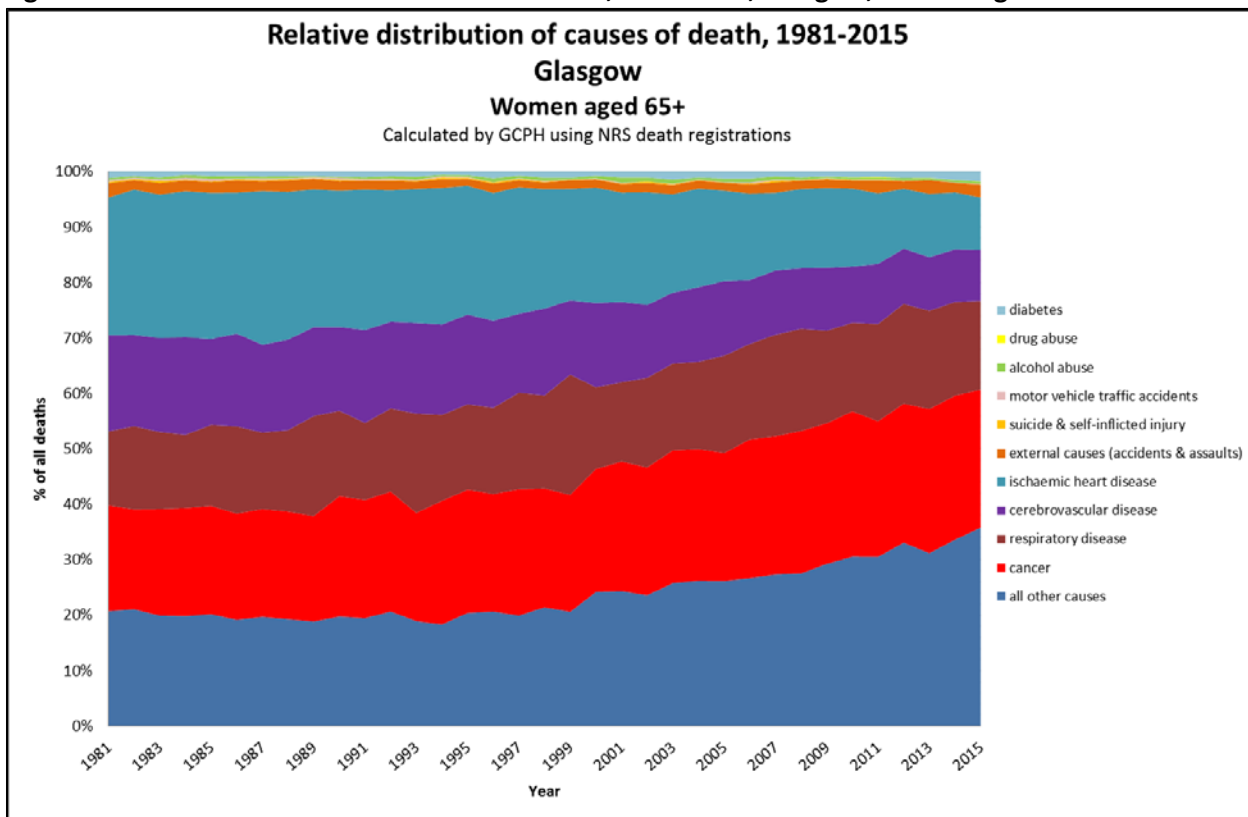
Figure 40: Trends in numbers of deaths, all causes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+.



In Glasgow, deaths caused by alcohol, drugs, all external causes, and diabetes were more frequent in absolute terms among men in 2015 compared with 1981. In the rest of Scotland, there were increases in deaths due to cancer, respiratory diseases, alcohol, and diabetes among both women and men, and additional increases were seen in deaths due to all external causes, suicide and self-inflicted injury, and drugs.

The most common causes of death among Glaswegian women in 1981 were ischaemic heart disease (25%) and cancer (19%). In 2015, cancer was the most common cause (25%), followed by respiratory disease (16%) (Figure 41).

Figure 41: Relative distribution of causes of death, 1981-2015, Glasgow, women aged 65+.

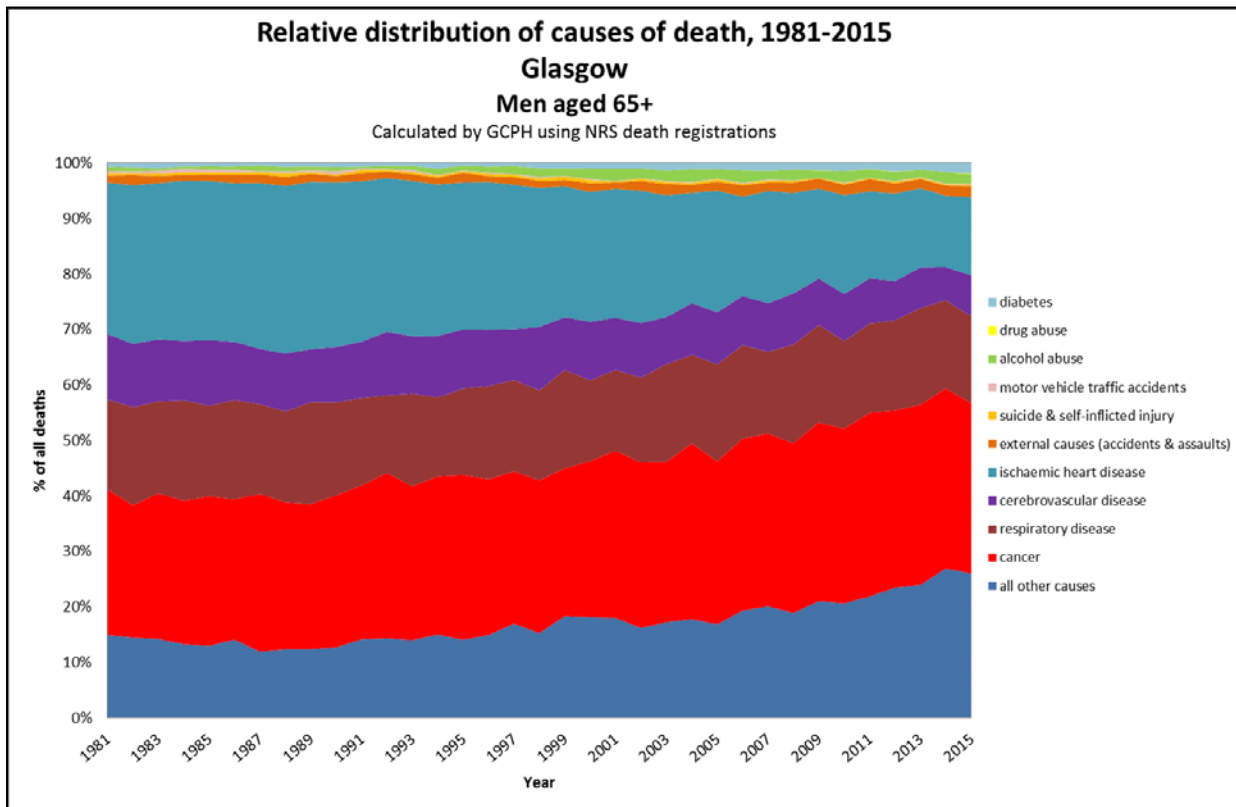


Among women in the rest of Scotland, the most common causes of death in 1981 were ischaemic heart disease (28%) and cerebrovascular disease (20%). In 2015, there had been a shift towards cancer (24%), and respiratory disease (14%) as the most common causes of death.

A similar pattern to that among Glaswegian women was seen among Glaswegian men, with ischaemic heart disease and cancer accounting for 27% and 26% of deaths respectively in 1981, and cancer and respiratory disease for 31% and 16% of deaths respectively in 2015 (Figure 42).

Among men in the rest of Scotland, the most common causes of death in 1981 were ischaemic heart disease (32%) and cancer (23%), and in 2015 it was still these two causes that dominated, although their relative positions had shifted – cancer now accounting for 30% of deaths and ischaemic heart disease for 15% of deaths.

Figure 42: Relative distribution of causes of deaths, 1981-2014, Glasgow, men aged 65+.

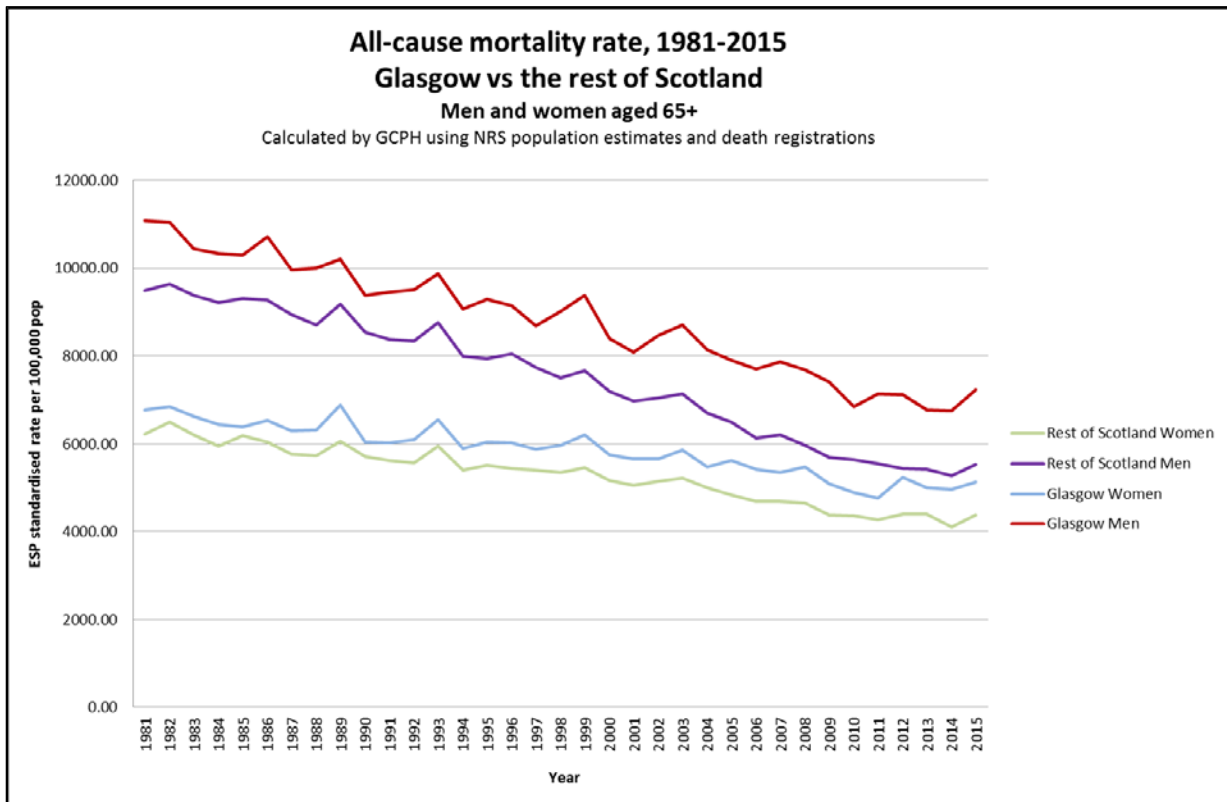


Trends in all-cause mortality rates

The all-cause mortality rate (deaths per 100,000 population, age standardised) in this age group fell by 24% among Glaswegian women and by 35% among Glaswegian men between 1981 and 2015. In the rest of Scotland, the rate fell by 29% among women and by 42% among men (Figure 43, Table A2 in Appendix). Between 2014 and 2015, all-cause mortality rates increased for men and women across Scotland.

Among women, the Glasgow rate was 9% higher than the rate among women in the rest of Scotland in 1981, but 17% higher in 2015. Among men, the rate was 17% higher in Glasgow than in the rest of Scotland in 1981, but 31% higher in 2015 (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 43: All-cause mortality rate, Glasgow versus the rest of Scotland, men and women aged 65+.



Trends in cause-specific mortality rates

Cancer

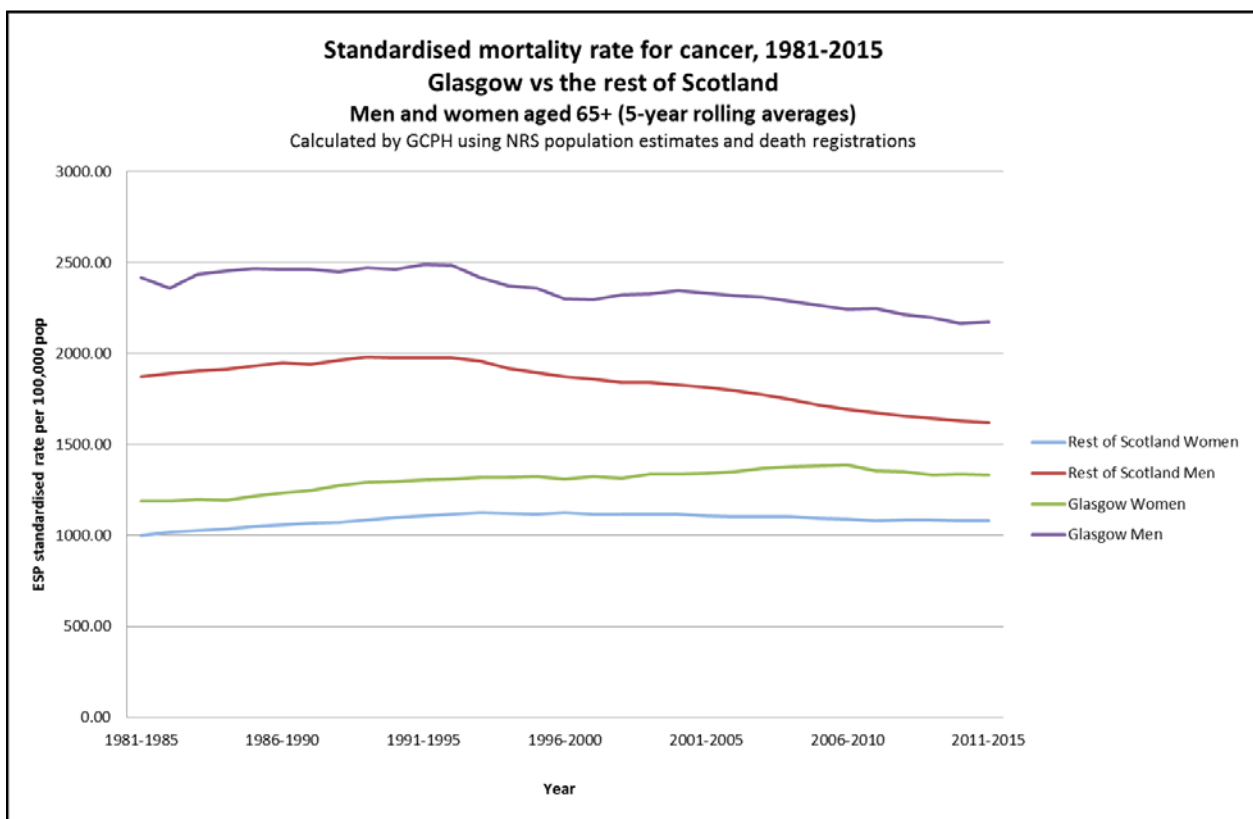
Cancer (all malignant neoplasms) accounted for approximately 28% of deaths in 2011-2015 among Scots aged 65 and over. Trends in cancer mortality rates from 1981 to 2015 show a clear contrast by gender in this age group, particularly in Glasgow (Figure 44, Tables A3 & A4 in Appendix).

Among women in Glasgow, the mortality rate increased from 1,188.4 in 1981-1985 to 1,334.1 in 2011-2015 (+12%), and among women in the rest of Scotland, the rate increased from 999.0 in 1981-1985 to 1,078.7 in 2011-2015 (+8%).

In contrast, the rate among men in Glasgow fell from 2,415.4 in 1981-1985 to 2,174.1 in 2011-2015 (-10%), and among men in the rest of Scotland, the rate fell from 1,874.4 in 1981-1985 to 1,620.6 in 2011-2015 (-14%).

Because the rate among women in Glasgow increased slightly more than that among women from the rest of Scotland, and the rate among men in Glasgow fell slightly less than that among men outside of Glasgow, the difference between Glasgow and the rest of Scotland – the mortality gap – increased. Among women, the 2011-2015 rate was 24% higher in Glasgow than in the rest of Scotland (up from 19% in 1981-1985). Among men, the 2011-2015 rate was 34% higher in Glasgow than in the rest of Scotland (up from 29% in 1981-1985) (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 44: Standardised mortality rate for cancer, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Respiratory disease

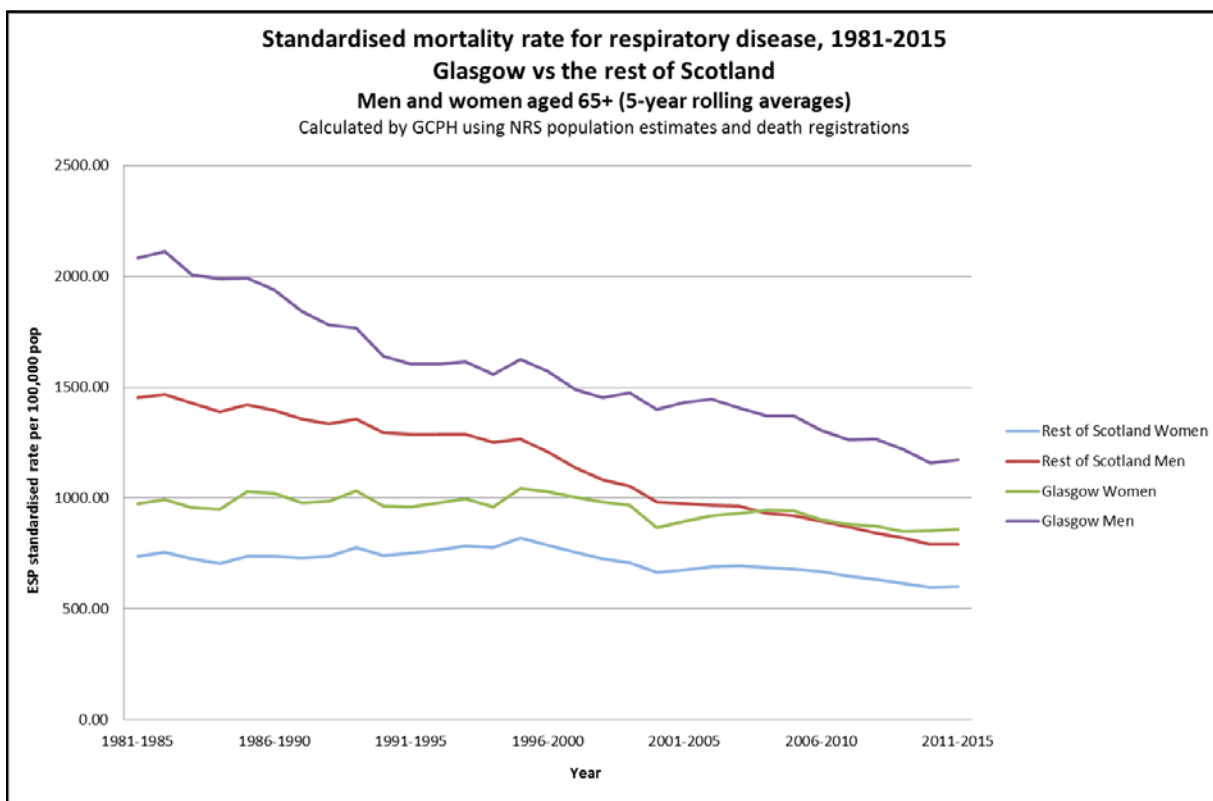
In 2011-2015, respiratory disease accounted for approximately 14% of the total burden of mortality among Scots aged 65 and older. Mortality rates from respiratory disease decreased in this age group across Scotland, but less so among women than among men (Figure 45, Tables A3 & A4 in Appendix).

In Glasgow, the female mortality rate for respiratory disease reduced from 973.8 in 1981-1985 to 858.4 in 2011-2015 (-12%), while the male rate fell from 2,082.4 in 1981-1985 to 1,172.6 in 2011-2015 (-44%).

In the rest of Scotland, the female rate fell from 738.5 in 1981-1985 to 600.8 in 2011-2015 (-19%), and the male rate fell from 1,452.0 in 1981-1985 to 791.3 in 2011-2015 (-46%).

The gap in female rates of respiratory disease mortality between Glasgow and the rest of Scotland increased. In 1981-1985, the female rate in Glasgow was 32% higher than the female rate in the rest of Scotland, and 2011-2015 it was 43% higher. Among men, the gap in rates increased from the Glasgow rate being 43% higher in 1981-1985 to being 48% higher in 2011-2015 (see Table 4 and Figures 54 & 55 on pages 63-64).

Figure 45: Standardised mortality rate for respiratory disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Ischaemic heart disease

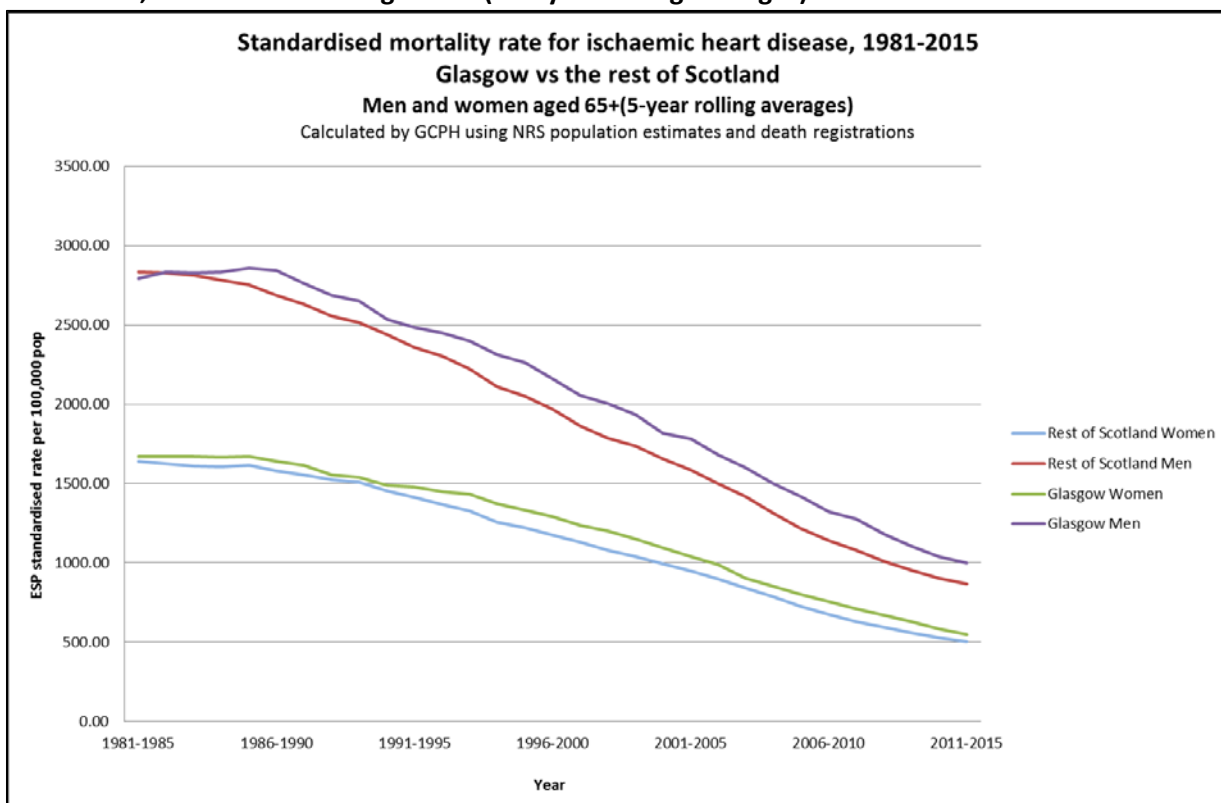
Ischaemic heart disease (IHD) accounted for approximately 14% of deaths among Scots aged 65 and older in 2011-2015. Since the early 1980s, mortality trends for IHD have been in steady decline, and the trends are very similar in Glasgow and in the rest of Scotland (Figure 46, Tables A3 & A4 in Appendix).

Among women in Glasgow, the IHD mortality rate fell from 1,669.9 in 1981-1985 to 547.0 in 2011-2015 (-67%), and among men in Glasgow the rate fell from 2,792.0 in 1981-1985 to 1,000.1 in 2011-2015 (-64%).

Among women in the rest of Scotland, the rate fell from 1,641.9 in 1981-1985 to 504.8 in 2011-2015 (-69%), and the rate among men showed a similar decline from 2,834.0 in 1981-1985 to 868.5 in 2011-2015 (-69%).

As reductions in mortality from this cause in Glasgow were slightly smaller than in the rest of Scotland, the female rate in Glasgow rose from being only 2% higher than that in the rest of Scotland in 1981-1985, to being 8% higher in 2011-2015. The male rate in Glasgow changed from being 2% lower in 1981-1985 to being 15% higher than the rest of Scotland in 2011-2015 (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 46: Standardised mortality rate for ischaemic heart disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Cerebrovascular disease

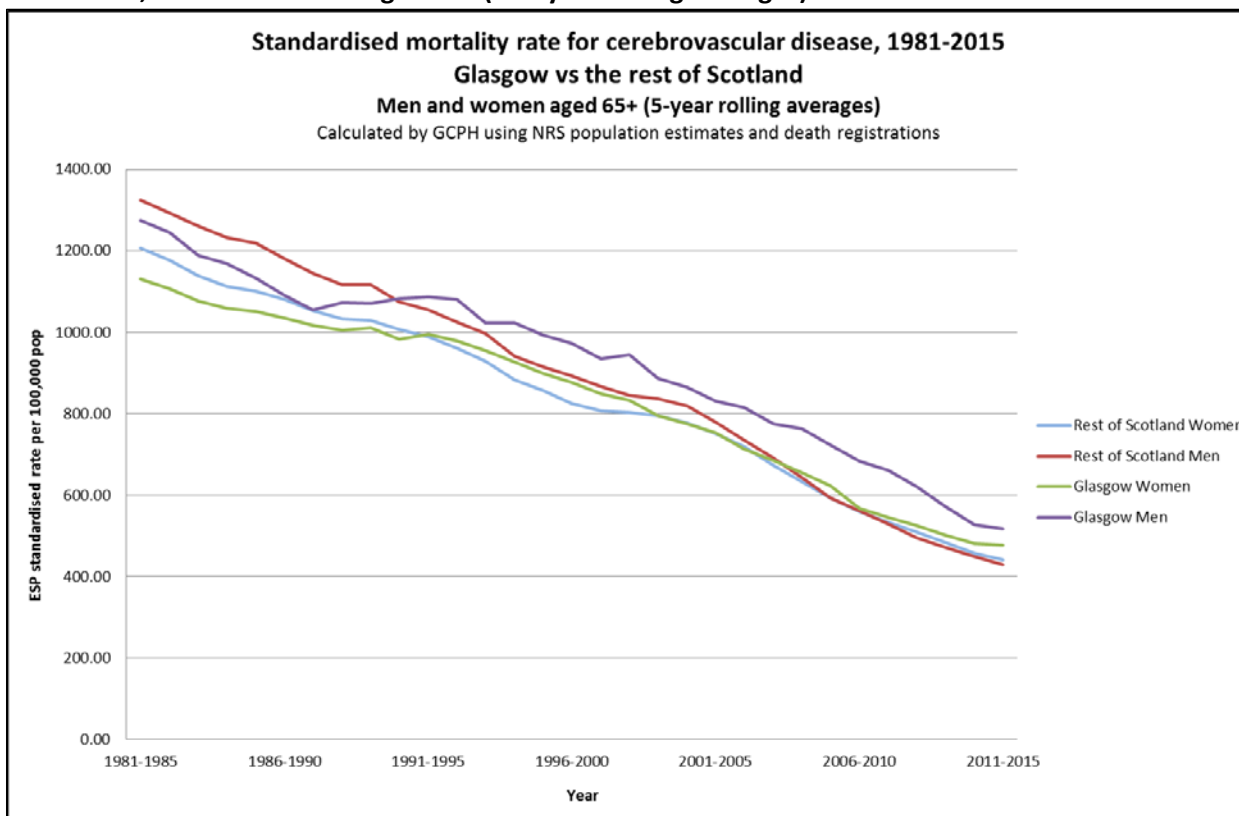
In 2011-2015, cerebrovascular disease (CVD) accounted for approximately 9% of deaths among people aged 65 and older in Scotland. Between 1981 and 2015, mortality from CVD in this age group fell across Scotland, among both men and women (Figure 47, and Tables A3 & A4 in Appendix).

In Glasgow, the female CVD mortality rate fell from 1,131.0 (per 100,000 population) in 1981-1985 to 477.1 in 2011-2015 (-58%), and the male rate fell from 1,273.5 in 1981-1985 to 517.6 in 2011-2015 (-59%).

In the rest of Scotland, the female rate fell from 1,206.1 in 1981-1985 to 440.8 in 2011-2015 (-63%), while the male rate fell from 1,323.9 in 1981-1985 to 429.6 in 2011-2015 (-68%).

Differences in the degree of decline in rates led to an increased gap in mortality between Glasgow and the rest of Scotland over the period. For women, the Glasgow rate went from being 6% lower in 1981-1985 to being 8% higher than the rate in the rest of Scotland in 2011-2015. For men, the rate in Glasgow went from being 4% lower in 1981-1985, to being 20% higher than the rate in the rest of Scotland in 2011-2015 (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 47: Standardised mortality rate for cerebrovascular disease, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



External causes

In 2011-2015, external causes accounted for approximately 2% (5,038 cases over five years) of deaths among people aged 65 and older in Scotland.

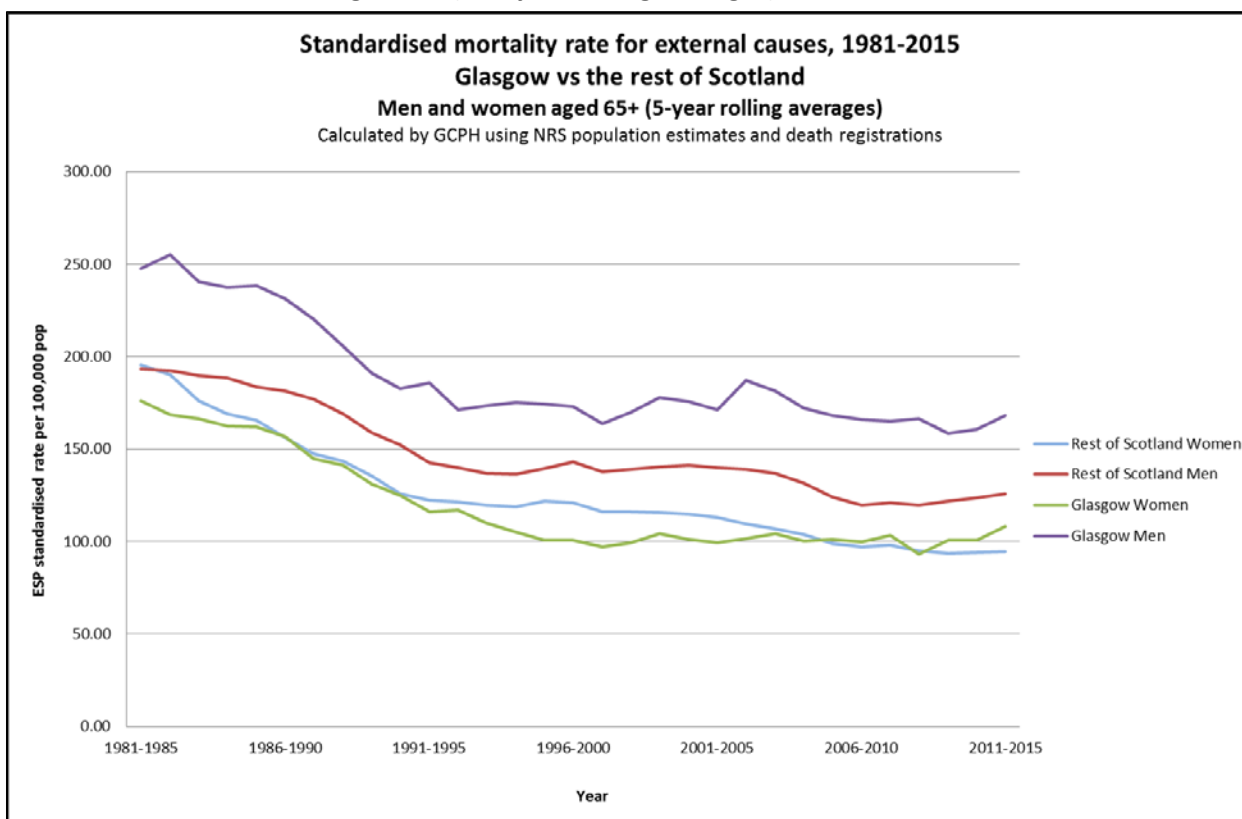
Mortality from external causes among people aged 65+ declined relatively fast during the 1980s, stabilised from the 1990s onwards, before increasing again from the late 2000s towards 2015 (see Figure 48, and Tables A3 & A4 in Appendix).

Among women in Glasgow, the rate declined from 176.0 in 1981-1985 to 108.1 in 2011-2015 (-39%), and among men in Glasgow, the rate declined from 247.6 in 1981-1985 to 168.0 in 2011-2015 (-32%).

In the rest of Scotland, the female rate declined from 195.7 in 1981-1985 to 94.6 in 2011-2015 (-52%), and the male rate declined from 193.4 in 1981-1985 to 125.7 in 2011-2015 (-35%).

Due to differing trends, the mortality rate from this cause among Glaswegian women went from being 10% lower than that among women in the rest of Scotland in 1981-1985 to being 14% higher in 2011-2015. The gap in male mortality also increased slightly in that period, from being 28% higher in Glasgow compared with the rest of Scotland to being 34% (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 48: Standardised mortality rate for external causes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Diabetes

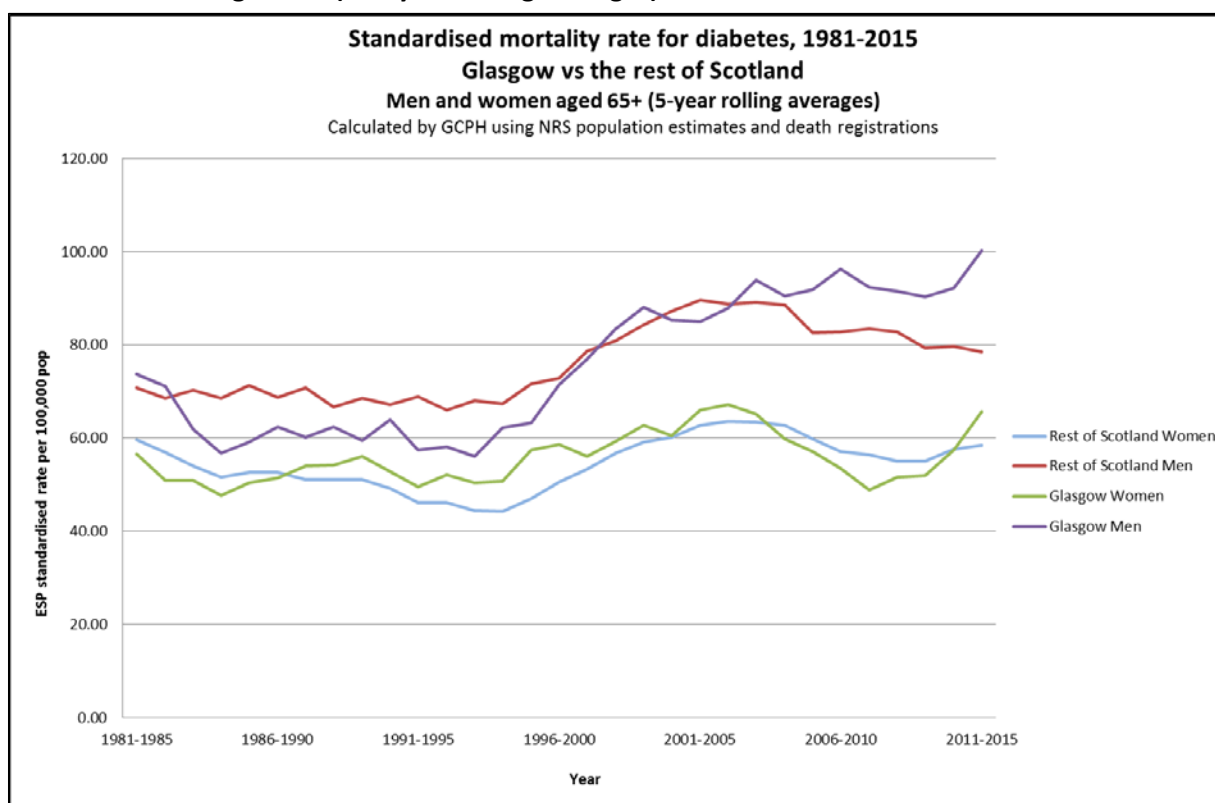
In 2011-2015, diabetes was listed as the main cause in approximately 1% (3,124 cases over five years) of deaths among people aged 65 and older in Scotland.

Mortality from diabetes increased among men aged 65+ between 1981 and 2015. This increase was particularly notable in Glasgow, where the male mortality rate increased from 73.6 in 1981-1985 to 100.2 in 2011-2015, a relative increase of 36%. Among women in Glasgow, the rate increased from 56.6 in 1981-1985 to 65.7 in 2011-2015, a more modest relative increase of 16% (Figure 49, Tables A3 & A4 in Appendix).

The rate among men in the rest of Scotland increased from 70.7 in 1981-1985 to 78.5 in 2011-2015, up 11%, whereas the rate among women in the rest of Scotland decreased very slightly from 59.6 in 1981-1985 to 58.5.

For both genders, the relative difference between Glasgow and the rest of Scotland increased in the period. Among women, the Glasgow mortality rate was 5% lower than the female rate in the rest of Scotland in 1981-1985, but was 12% higher in 2011-2015. Among men, the mortality rate in Glasgow was 4% lower than that in the rest of Scotland in 1981-1985 but rose to be 28% higher in 2011-2015 (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 49: Standardised mortality rate for diabetes, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Alcohol-related deaths

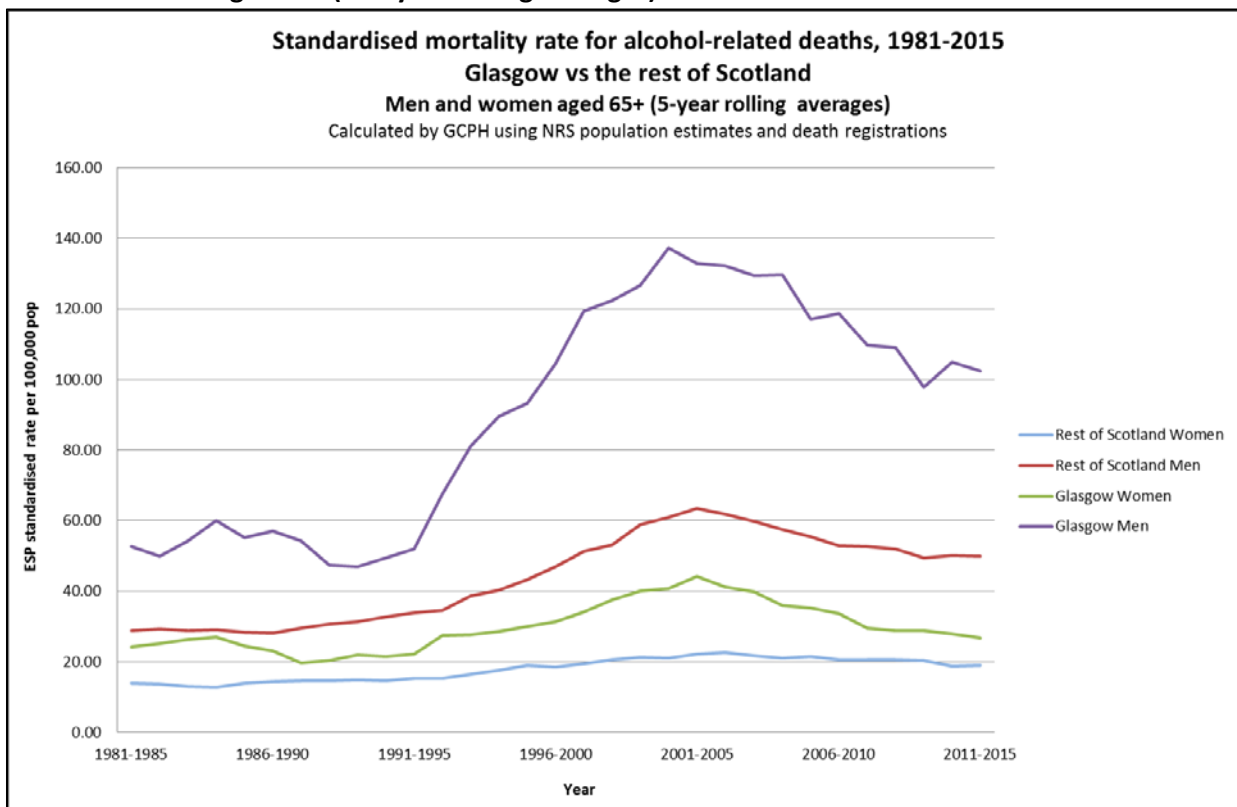
In Scotland as a whole, less than 1% (1,670 cases over five years) of deaths in this age group were attributed to alcohol in 2011-2015. The trends in alcohol-related mortality rates among people aged 65+ are largely similar to those seen in the younger age groups with peaks in the early 2000s followed by declines towards 2015, and consistently higher rates in Glasgow compared with the rest of Scotland (Figure 50, Tables A3 & A4 in Appendix).

Among women in Glasgow, the rate peaked in the early 2000s but declined strongly towards 2015, resulting in a relatively small overall increase in the rate from 24.3 in 1981-1985 to 26.8 in 2011-2015, a relative rise of 10%. Among men in Glasgow, the peak in the early 2000s was much more prominent and the subsequent decline less so, which left the 2011-2015 rate (102.3) 94% higher than the 1981-1985 rate (52.6).

In the rest of Scotland, the rate among women displayed a more steady increase from 13.9 in 1981-1985 to 19.1 in 2011-2015, representing a relative rise in mortality of 37%, while the male rate also showed net increase from 28.9 in 1981-1985 to 50.0 in 2011-2015, a rise of 73%.

The mortality gap between Glasgow and the rest of Scotland decreased among women, from mortality being 74% higher in Glasgow in 1981-1985 to being 41% higher in 2011-2015. However, the mortality gap among men increased from being 82% higher in Glasgow to being 104% higher in Glasgow over the same period (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 50: Standardised mortality rate for alcohol-related deaths, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



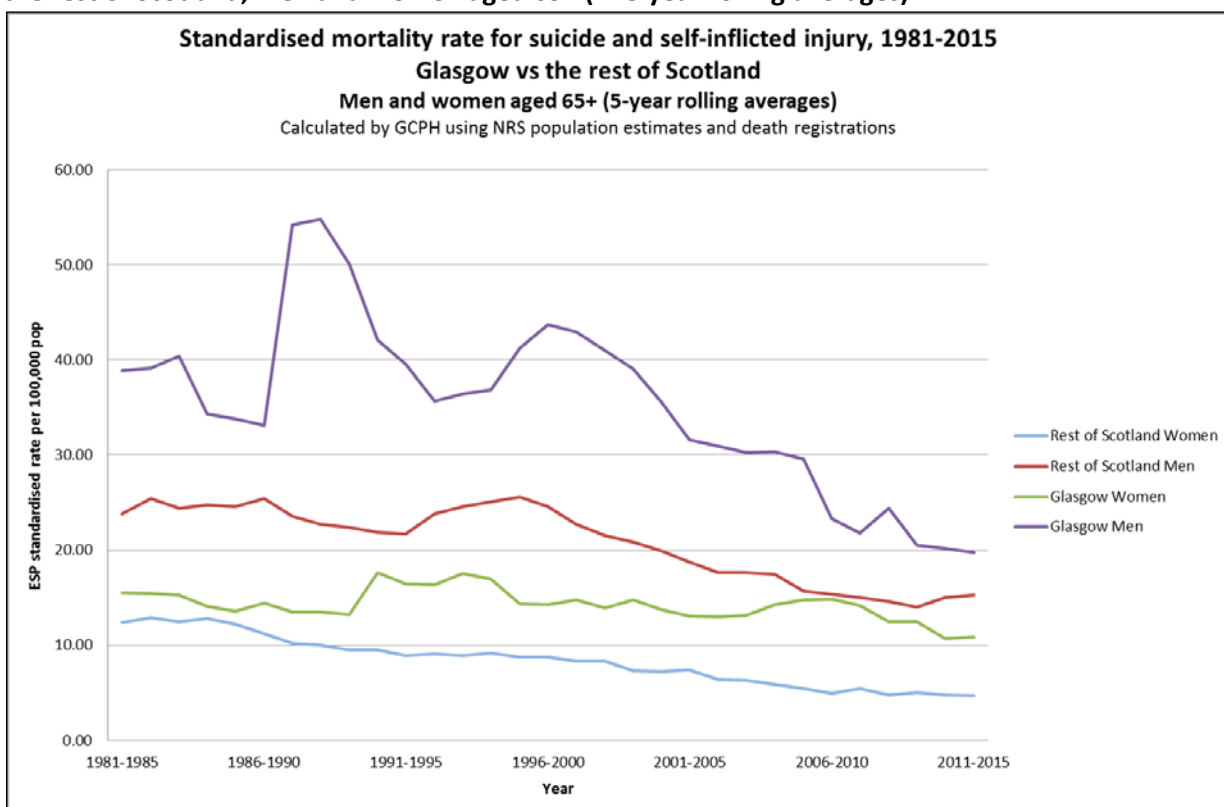
Suicide and self-inflicted injury

In 2011-2015, less than 1% (425 cases over five years) of deaths among people in Scotland aged 65 and older were recorded as a suicide or as caused by self-inflicted injury. The rates of suicide and death from self-inflicted injury showed positive trends in the 65+ age group, particularly among women in the rest of Scotland, where the rate fell from 12.4 in 1981-1985 to 4.7 in 2011-2015, a relative reduction of 62%. Among women in Glasgow, the rate fell from 15.5 1981-1985 to 10.9 in 2011-2015, representing a reduction of 30%.

Among men in the rest of Scotland, the mortality rate for this cause fell from 23.8 in 1981-1985 to 15.2 in 2011-2015, a reduction of 36%, while the rate among men in Glasgow fell from 38.9 in 1981-1985 to 19.8 in 2011-2015, a reduction of 49% (Figure 51, Tables A3 & A4 in Appendix).

The stronger decline in the rate among women in the rest of Scotland increased the female mortality gap between Glasgow and the rest of Scotland. In 1981-1985, the mortality rate among women in Glasgow was 25% higher than the rate among women in the rest of Scotland, and in 2011-2015 this had increased to being 132% higher. In contrast, the gap in male mortality rates decreased from being 64% higher in Glasgow in 1981-1985 to being 30% higher in Glasgow in 2011-2015 (see Table 4 and Figures 54 & 55, pages 63-64).

Figure 51: Standardised mortality rate for suicide and self-inflicted injury, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Motor vehicle traffic accidents

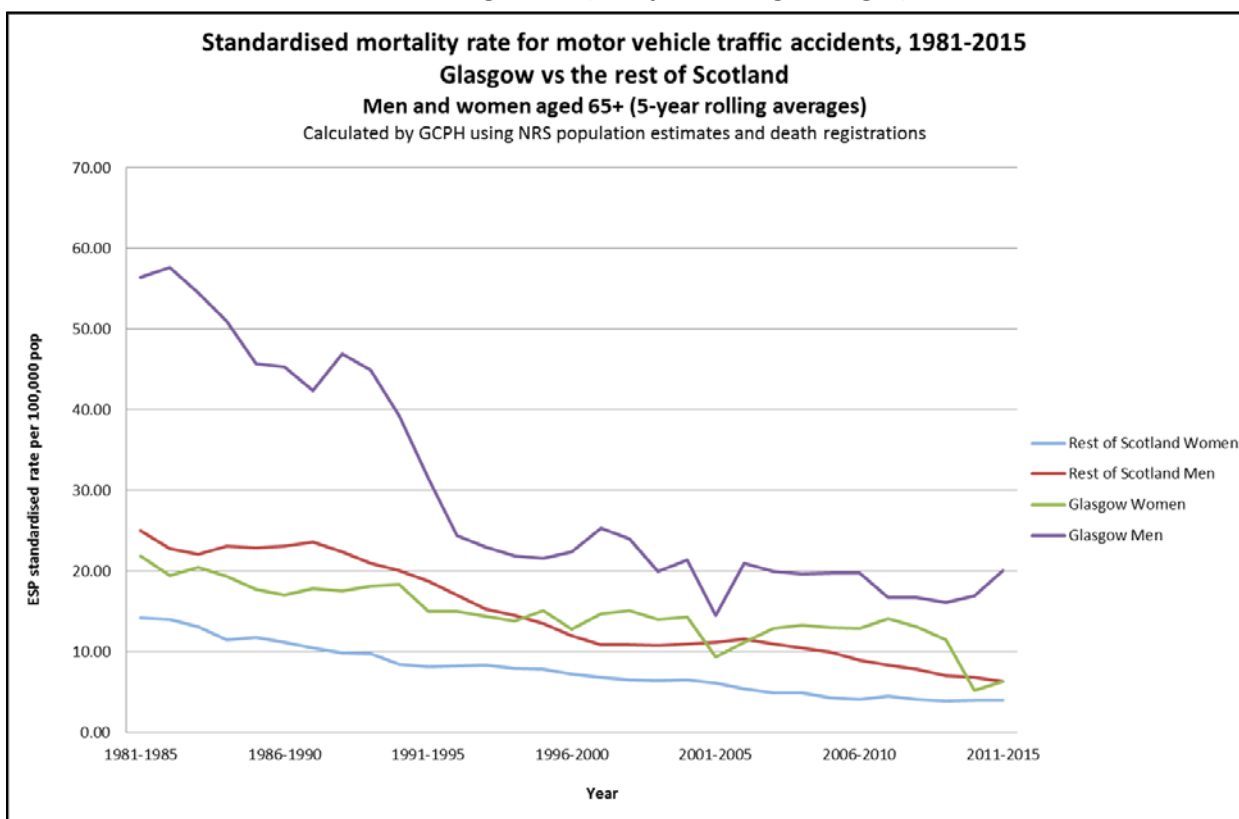
In 2015, motor vehicle traffic accidents (MVTAs) caused less than 1% (232 cases over five years) of all deaths among people aged 65 and older in Scotland. Between 1981 and 2015, there were substantial declines in the mortality rates from MVTAs across Scotland (Figure 52, Tables A3 & A4 in Appendix).

In Glasgow, the female rate fell from 21.9 in 1981-1985 to 6.3 in 2011-2015, a relative reduction of 71%, and the male rate fell from 56.4 in 1981-1985 to 20.1 in 2011-2015, a reduction of 64%.

In the rest of Scotland, the female rate fell from 14.2 in 1981-1985 to 4.0 in 2011-2015, a reduction of 72%, and the male rate fell from 25.0 in 1981-1985 to 6.4 in 2011-2015, a reduction of 75%.

The slightly larger decreases in the rest of Scotland widened the gap between rates in Glasgow and the rest of Scotland, particularly for men. In 1981-1985, the female mortality rate in Glasgow was 55% higher than that in the rest of Scotland, and in 2011-2015, the gap had increased slightly to be 58% higher. For men the rate in Glasgow was 125% higher in 1981-1985, but by 2011-2015 it was 216% higher in 2011-2015 (see Table 4 and Figures 54 & 55, pages 63-64). However, it is worth bearing mind that these rates, particularly in Glasgow, are based on a relatively small number of actual deaths.

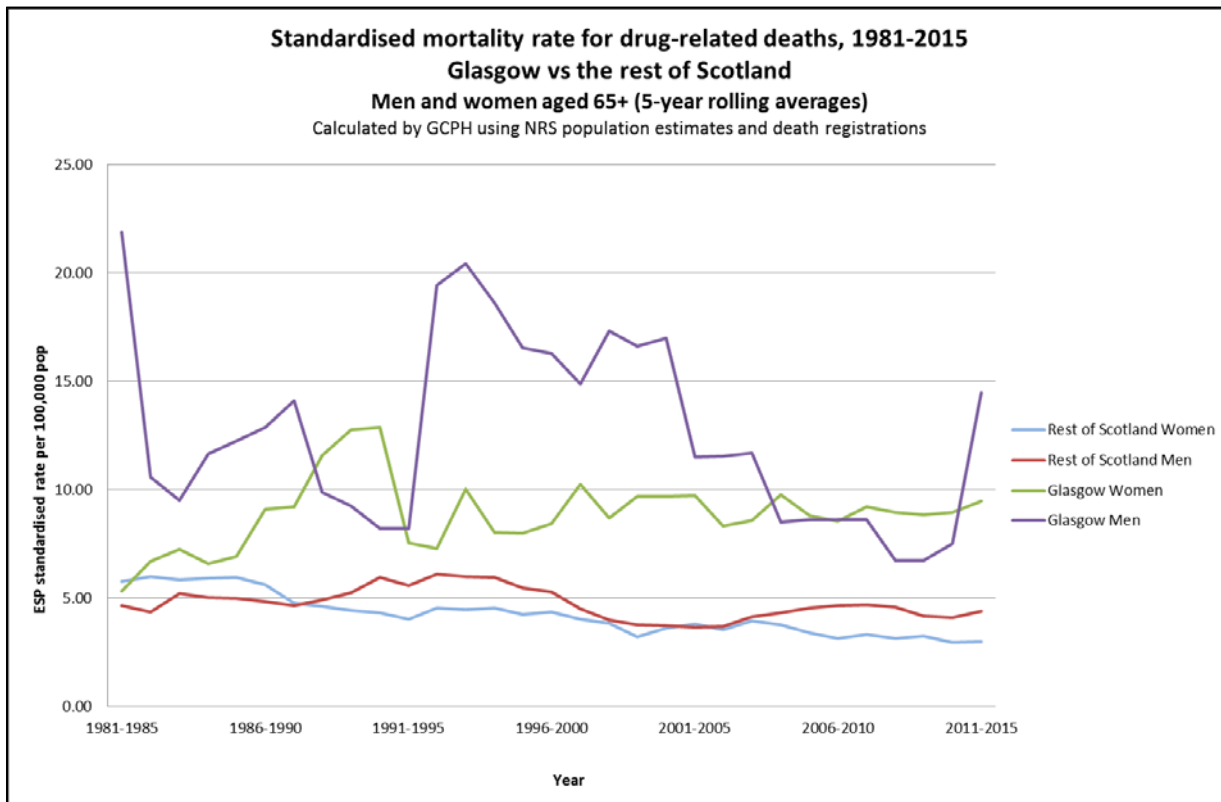
Figure 52: Standardised mortality rate for motor vehicle traffic accidents, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Drug-related deaths

In 2011-2015, less than 1% (158 cases over five years) of deaths among people aged 65 and older in Scotland were drug related. As drug-related mortality in this age group is relatively low, there have been noticeable fluctuations and regional disparities in mortality rates between 1981 and 2015. There are no clear patterns to be discerned, and figures should be interpreted cautiously (see Figure 53, Tables A3 & A4 in Appendix).

Figure 53: Standardised mortality rate for drug-related deaths, 1981-2015, Glasgow versus the rest of Scotland, men and women aged 65+ (five-year rolling averages).



Overview of trends

Table 4 (and Figures 54 & 55) illustrate how the standardised mortality rate in Glasgow compared with the rest of Scotland for this age group changed. Glasgow's mortality for all causes remained higher – 17% higher for females and 31% higher for males in 2015 – and this gap increased in the period 1981 to 2015 for both women and for men.

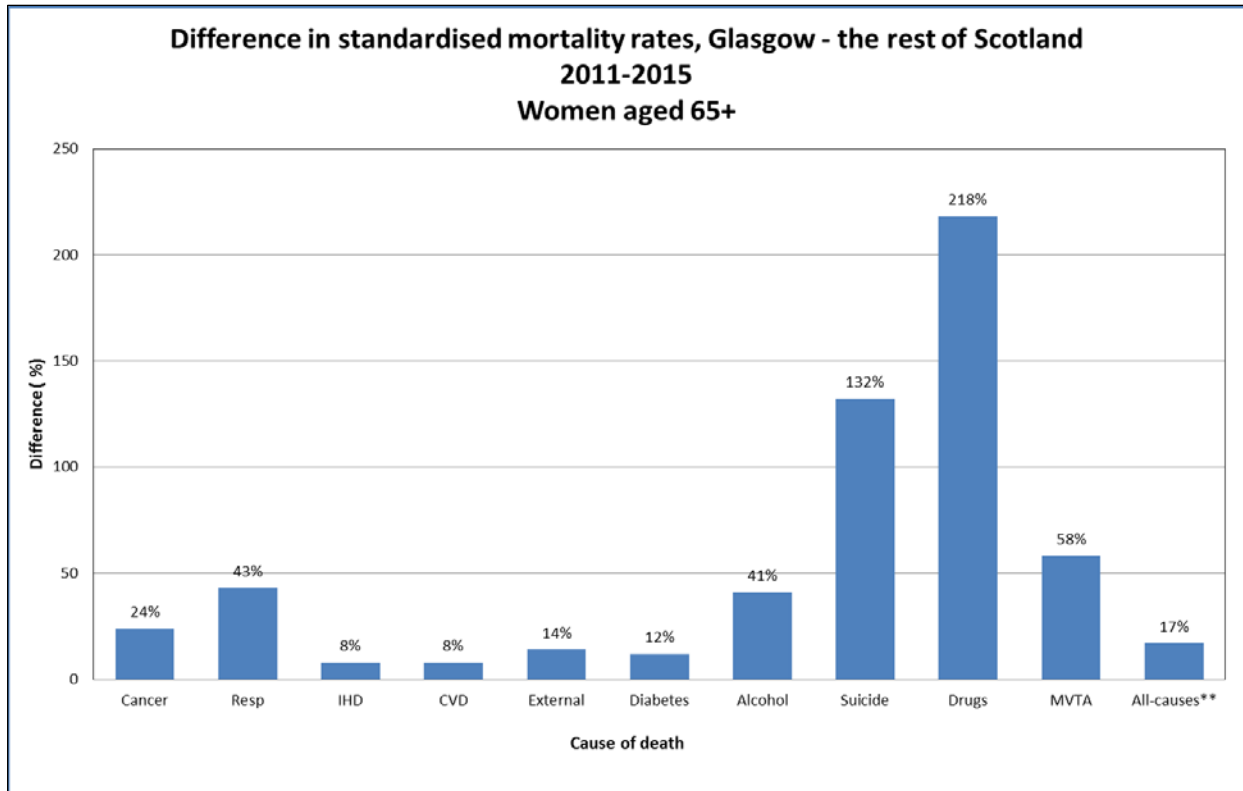
For most causes analysed, the mortality gap between Glasgow and the rest of Scotland widened over time for both men and women. Exceptions to this trend were female alcohol-related mortality, male suicide rates and male drug-related mortality, where for each of these causes the gap in mortality rates narrowed.

Table 4. Difference between standardised mortality rates (SMR) in Glasgow and the rest of Scotland, age 65+.

Difference: SDR in Glasgow – SDR rest of Scotland (%)*						
Age	65+					
Gender	Women			Men		
Year	1981-1985	2011-2015	Change**	1981-1985	2011-2015	Change**
Cause	Difference(%)	Difference(%)		Difference(%)	Difference(%)	
Cancer	19 +	24 +	5	29 +	34 +	5
Respiratory disease	32 +	43 +	11	43 +	48 +	5
Ischaemic heart disease (IHD)	2	8	6	-2	15	17
Cerebrovascular disease (CVD)	-6	8	14	-4	20	25
External	-10	14	24	28	34	6
Diabetes	-5	12	17	4	28	24
Alcohol related	74	41	-33	82	104 +	22
Suicide	25	132	107	64	30	-34
Drug related	-8	218	226	369	231	-138
Motor vehicle traffic accidents (MVTA)	55	58	3	125	216	91
All-causes***	9 +	17 +	8	17 +	31 +	14

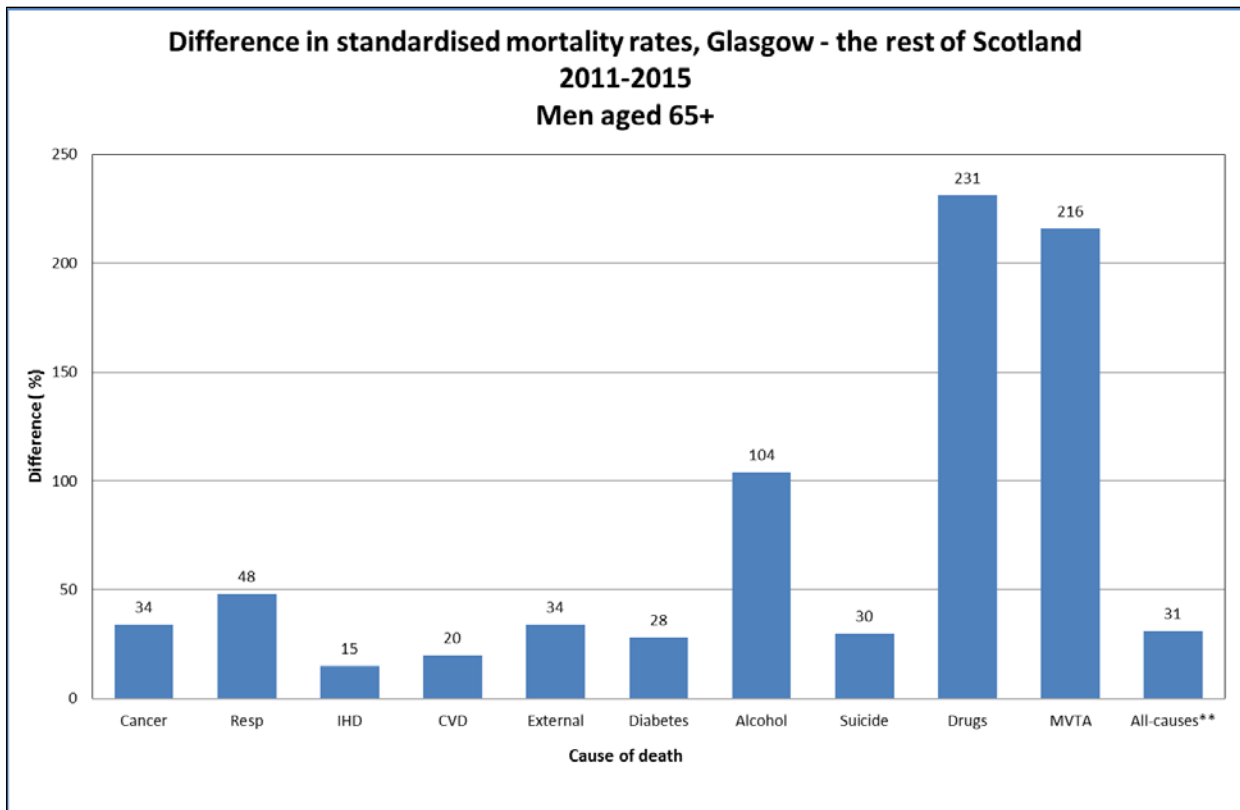
* Calculated as the percentage difference in standardised mortality rate between Glasgow and the rest of Scotland. Negative figures in the % difference columns indicate lower rates in Glasgow. In the Change column: red figures indicate increases in the Glasgow excess; green figures indicate reductions in the Glasgow excess or that rates have become increasingly lower in Glasgow. ** This is a change in percentage points. *** All-cause mortality rates are for single years (1981-2015). + indicates a statistically significant difference (based on non-overlapping 95% confidence intervals).

Figure 54: Difference in standardised mortality rates, Glasgow – the rest of Scotland, 2011-2015, women aged 65+.



IHD=Ischaemic heart disease; Resp=Respiratory disease; CVD=Cerebrovascular disease; MVTA=Motor vehicle traffic accidents. ** All-cause rates are compared for single years (i.e. 1981 and 2015).

Figure 55: Difference in standardised mortality rates, Glasgow – the rest of Scotland, 2011-2015, men aged 65+.



Summary of findings

Overall, all-cause mortality decreased in all age groups across Scotland between 1981 and 2015, but there were clear differences in the trends by age, gender, cause and geographic location. The following sections sum up the main results for each age group.

Infants

Infant deaths accounted for 0.3% of all deaths in Scotland in 2015.

Infant mortality rates reduced substantially in Scotland between 1981-1985 and 2011-2015, but to a lesser degree in Glasgow. This resulted in 25% higher infant mortality in Glasgow than in the rest of Scotland in 2011-2015.

In 2015, the majority of infant deaths in Glasgow, as well as in the rest of Scotland, were caused by congenital malformations, deformations and chromosomal abnormalities. The relative proportion of deaths due to this category of causes remained stable over the period, whereas infectious or congenital disorders of the respiratory systemⁱⁱⁱ became more common as a proportion of all deaths, most notably in Glasgow.

1-14

Deaths among children aged 1-14 accounted for 0.2% of all deaths in Scotland in 2015.

In the 1-14 age group, the all-cause mortality rate decreased across Scotland over the period studied, but less so in Glasgow, which led to a widening of the gap between Glasgow and the rest of Scotland. In 2011-2015, overall mortality in this age group was 47% higher among girls in Glasgow than among girls in the rest of Scotland, and 41% higher among boys in Glasgow than among boys in the rest of Scotland.

In 2015, the most common cause of death among Scottish children aged 1-14 was cancer, whereas in 1981 the most common cause of death had been external causes. Between 1981 and 2015, proportionately, deaths due to cerebral palsy became more common among boys, and deaths due to congenital malformations, deformations and chromosomal abnormalities became more common among girls across Scotland.

15-44

Deaths among people aged 15-44 accounted for 3.3% of all Scottish deaths in 2015.

Over the period studied (1981-2015), the all-cause mortality rate declined more in Glasgow than in the rest of Scotland for the 15-44 age group. This is particularly evident since the mid-2000s, and while mortality rates in Glasgow were still considerably higher in 2015 (32% higher among women, 18% higher among men), the gap between Glasgow and the rest of Scotland had narrowed.

In terms of the numbers of deaths in the young working-age group (aged 15-44), there were large increases nationwide in the number of drug-related deaths, most notably among men, from the early 1990s onward. In this age group, drug deaths were the most common cause of death in 2015 among Glaswegian women, and among men across Scotland (including in Glasgow). Among women in the rest of Scotland, cancer surpassed drugs as the most common cause of death. Alcohol-related deaths also

ⁱⁱⁱ The bulk of this category in 2011-2015 were cases of 'respiratory distress of newborn (ICD10 P22)', and 'chronic respiratory disease originating in the perinatal period (ICD10 P27)'.

increased across Scotland in this age group, with sharp rises and subsequent falls seen for men. Over the whole period, however, the increase in alcohol-related deaths was more pronounced among women. While numbers of suicides and deaths from self-inflicted injury declined in Glasgow, these types of deaths became more frequent for both genders in the rest of Scotland.

In terms of cause-specific mortality rates, nationwide decreases were seen for both genders in deaths from motor vehicle traffic accidents (MVTAs), cancer (with rates in Glasgow, and particularly among Glaswegian women showing the largest improvement), cerebrovascular disease, and ischaemic heart disease. However, reductions in the female ischaemic heart disease mortality rate in Glasgow lagged behind reductions in the rest of Scotland, and as a consequence, female IHD mortality in Glasgow was 155% higher than in the rest of Scotland in 2011-2015.

The rate of mortality from all external causes (including accidents and assaults, MVTAs, suicides and events of undetermined intent, and some cases of drug- and alcohol-related deaths) increased among all groups, but least among Glaswegian men. Rates of suicides and deaths from self-inflicted injury declined in Glasgow, but increased for both genders in the rest of Scotland.

The largest increases in standardised mortality rates were seen for drug-related deaths, where rates among men in Glasgow and the rest of Scotland increased by 332% and 479%, respectively, between 1981-1985 and 2011-2015. The second largest increase was in alcohol-related mortality, for which rates among women in the rest of Scotland more than doubled. For both genders, the overall rise in drug- and alcohol-related mortality was less pronounced in Glasgow than in the rest of Scotland, due to a declining trend in the city since the late 2000s. Thus, despite a large increase in drug-related mortality across Scotland between 1981 and 2015, the difference in mortality rates between Glasgow and the rest of Scotland reduced.

Finally, while the mortality rate from respiratory disease among men across Scotland showed a fluctuating but largely declining trend, the rate among women, and particularly Glaswegian women, rose from the early 2000s towards 2015. In 2011-2015, the rate of mortality from respiratory disease among Glasgow's women was more than double that among women in the rest of Scotland (7.0 versus 2.8 per 100,000 population).

45-64

Deaths among people aged 45-64 accounted for 13.8% of all Scottish deaths in 2015.

The all-cause mortality rate among 45-64 year olds declined across Scotland, but less so in Glasgow and therefore the mortality gap between Glasgow and the rest of Scotland widened in the period studied (1981-2015), particularly in terms of male mortality. In 2015, the overall mortality rate in Glasgow compared with the rest of Scotland was 37% higher for women and 72% higher for men.

The number of alcohol- and drug-related deaths among 45-64 year olds increased across Scotland, but less so in Glasgow than in the rest of Scotland. In Glasgow, there were additional increases in deaths due to diabetes, while in the rest of Scotland the number of male deaths due to suicide and self-inflicted injury went up. In 2015, the most common cause of death for both men and women across Scotland was cancer, followed by respiratory disease among women and ischaemic heart disease among men. Cancer thus replaced ischaemic heart disease as the most common cause of death among Scottish men, and respiratory disease replaced ischaemic heart disease as the second most common cause of death among Scottish women.

Turning to mortality rates, cause-specific mortality rates for ischaemic heart disease, motor vehicle traffic accidents (MVTAs), cerebrovascular disease, cancer, respiratory disease, all external causes, and suicide and self-inflicted injury decreased over the period in Glasgow and in the rest of Scotland. However, improvements in mortality were proportionately smaller for Glaswegian women compared with women in the rest of Scotland for the majority of causes. Furthermore, reductions in mortality rates from external causes, cancer, respiratory disease, MVTAs, and suicide and self-inflicted injury were lower proportionately among Glaswegian women than among Glaswegian men. In addition, reductions in mortality were proportionately less among Glaswegian men compared with men in the rest of Scotland for most of the listed causes, although mortality reductions were greater among Glaswegian men for alcohol-related causes, MVTAs, and suicide and self-inflicted injury.

Across Scotland, drug- and alcohol-related mortality rates increased. The increase in the drug-related mortality rate was larger in Glasgow, and particularly among Glaswegian men, leading to Glasgow's male drug-related mortality rate being 177% higher than that in the rest of Scotland in 2011-2015. Although the overall rise in alcohol-related mortality was larger in the rest of Scotland, the gap in male alcohol-related mortality between Glasgow and the rest of Scotland remained high in 2011-2015 (+118%). Additionally, although numbers are relatively small, diabetes mortality appeared to be rising among Glaswegian men in this age group.

65+

Deaths among people aged 65 and over accounted for 82.4% of all Scottish deaths in 2015.

The overall mortality rate in this age group declined across Scotland over the period studied; the decline was greater among men than women and lower among women in Glasgow than women in the rest of Scotland. As a consequence, by 2015, the overall mortality rate in Glasgow was 17% higher for women and 31% higher for men than in the rest of Scotland.

In 2015, the most common causes of death among people of both genders in this age group in Glasgow, and among women in the rest of Scotland, were cancer and respiratory disease, while in 1981 ischaemic heart disease had been the most common cause of death. Ischaemic heart disease was also replaced by cancer as the main cause of death among men in the rest of Scotland in 2015, but it remained the second most common cause. In Glasgow, the actual number of alcohol-related deaths and deaths due to diabetes increased between 1981 and 2015 among men in this age group.

There were clear gender differences in cancer mortality in this age group, with male rates decreasing and female rates increasing in Glasgow and the rest of Scotland. For both genders, the gap in cause-specific mortality between Glasgow and the rest of Scotland widened for all causes, except alcohol (for women) and suicide and drug-related mortality (for men) (see Tables 4, A3 & A4).

Discussion

As noted in the introduction to this report, Scotland has one of the worst health profiles among Western European countries, as measured by mortality or life expectancy. Indeed since the late 1970s, Scotland has had the highest level of mortality among working-age men and women in Western Europe. Within the UK, Glasgow has stood out as the city with the highest mortality, lowest life expectancy and one of the greatest concentrations of deprivation of any Scottish and UK city. There are many reasons for this position. Glasgow's economic and population adjustments during the post-industrial era have been accompanied by a range of health-related impacts accumulated over the life-course, which in turn have been strongly influenced by government decisions and policies, and by socio-political circumstances.

There is therefore considerable interest in understanding whether health in Glasgow and the rest of Scotland is improving overall, but also whether these geographic differences, or inequalities, in health have been reducing or increasing over time. This report attempts to shed light on these inter-related issues and therefore focuses both on trends in mortality rates in Glasgow and the rest of Scotland and changes in the mortality gap between Glasgow and the rest of Scotland.

Although most of this report focuses on comparing population-based mortality rates, it is useful to note some of the changes in the leading causes of death in each age group. Table 5 summarises the leading causes of death in each age group in 2015 and changes over time in the prevalence of particular causes.

Table 5. Main causes of death by age group (2015) and changes in main causes over time.

Age group	Main causes of death (2015)	Changes over time (1981-2015)
Infants (< 1 year)	Congenital malformations, deformations and chromosomal abnormalities.	Infectious or congenital disorders of the respiratory system became more prominent, proportionately.
Children (1-14 years)	Cancer replaced deaths due to external causes as most common cause of death.	Deaths due to cerebral palsy became more prominent, proportionately (boys); deaths due to congenital malformations, deformations and chromosomal abnormalities became more prominent, proportionately (girls).
Younger working adults (15-44 years)	Drugs related deaths – most common cause among men across Scotland and among Glaswegian women. Among women outside of Glasgow, cancer deaths surpassed drugs.	Drug-related deaths increased nationwide from early 1990s, most notably among men. Suicide and self-inflicted injuries (men) became second most common cause of death in rest of Scotland. Alcohol-related deaths increased across Scotland. Motor vehicle fatalities and cancer became proportionately less prominent.
Older working age adults (45-64 years)	Cancer – most common cause (both men and women); second most common, respiratory disease (women) and ischaemic	Cancer replaced ischaemic heart disease as most common cause of death (men). Respiratory disease replaced ischaemic

	heart disease (men).	heart disease as second most common cause of death (women). Alcohol- and drug-related deaths increased across Scotland.
Older adults (65 years and over)	Cancer and respiratory disease – most common causes of death; exception, IHD second most common cause in rest of Scotland (men).	Ischaemic heart disease deaths declined and replaced by cancer as the main cause of death. Rises in cancer deaths, respiratory, alcohol-related deaths and deaths due to diabetes (small numbers).

Table 5 highlights some of the shifts in the burden of mortality over time. For example, the large increase in drug-related deaths (which is now the main cause of death among 15-44 year olds and rapidly rising as a cause of death among 45-64 year olds), cancer mortality replacing ischaemic heart disease mortality as the main cause of death among older adults and the increasing importance of respiratory disease (particularly among women) as a cause of death in older age groups. These changes have implications for prevention priorities and for health and social care particularly in the older population.

Turning to trends in mortality, as measured as a population-based rate over the 35-year period analysed (1981-2015), there was a fall in all-cause mortality in every age group for men and women in Scotland and in Glasgow. However this decline has not always been steady or consistent and there is evidence of cohort effects and the impacts of behavioural and societal change.

The decline in infant and child (1-14 years) mortality across Scotland is clearly a positive trend. Between 1981 and 2015, infant and child mortality rates more than halved. However, it is of concern that the rate of improvement has been slower in Glasgow, resulting in the city having higher mortality rates than the rest of Scotland. It is also important to be cautious in interpreting these differences, as the mortality rates for infants and children are based on low numbers of deaths, particularly in Glasgow, making it difficult to distinguish true trends from random fluctuations.

As pointed out by previous studies^{5,6}, all-cause mortality among the younger working-age population (aged 15-44) showed no net improvement between the mid-1980s and 2012, and worsened during the 1990s, especially among men. From the late 2000s onwards, however, the mortality rate in this age group started to decline, more notably in Glasgow than in the rest of Scotland. Thus, when looking at the net changes between 1981 and 2015, 15-44 year olds are the only age group for which the all-cause mortality gap between Glasgow and the rest of Scotland has become smaller, whereas it has increased for all other age groups. However, reductions in the all-cause mortality gap for this age group mask a widening gap in mortality between Glasgow and the rest of Scotland due to respiratory disease, ischaemic heart disease and cerebrovascular disease (women only) (see Tables 2, A3 and A4).

The narrowing gap in all-cause mortality rates among 15-44 year olds was partly due to large increases in deaths due to suicide, alcohol and drugs in the rest of Scotland in the period 1981-2015, while in the same period in Glasgow rates of suicide, drug- and alcohol-related deaths rose but then declined.

Explaining this in more detail for each cause, the rate of suicide in Glasgow showed a net decrease for both genders over the years. In contrast, it increased in the rest of Scotland and as a result, by 2011-2015, the male suicide rate was 10% lower in Glasgow than in the rest of Scotland. Similarly, the rate of

alcohol-related deaths – which rose steeply in the 1990s and has been highlighted as a particular concern among young women in UK and Scottish cities^{9,10} – declined recently from peaks during the 2000s among women aged 15-44 in Glasgow, but increased disproportionately (+110%) among women aged 15-44 in the rest of Scotland from 1981-1985 to 2011-2015. Therefore, while alcohol-related mortality among younger Glaswegian women (and men) was still substantially higher than in the rest of Scotland in 2011-2015, the gap had narrowed.

The largest single net increase in mortality between 1981-1985 and 2011-2015 found in this study was in the rate of drug-related deaths among men aged 15-44; the rate among Glaswegian men more than tripled in this period (+332%) and the rate in the rest of Scotland increased even more (+479%), (see Table A4). The number of drug (mainly heroin) users in the UK increased dramatically through the 1980s and early 1990s and the level of associated harm was strongly associated with levels of deprivation¹¹. Recent research has highlighted an increase in drug-related deaths for a cohort born between 1960 and 1980, especially among men living in the most deprived areas of Scotland¹². The age of death from drug-related incidents in Scotland has been increasing since the early 1990s¹³, but the majority of these deaths still occur among younger working-age men.

The rises in drug- and alcohol-related mortality rates among younger adults (aged 15-44) are concerning, but it is also worth noting that across the whole period (1981-2015) overall increases in mortality have been smaller in Glasgow than in the rest of Scotland mainly due to declining trends since the mid-2000s in the city. Also of concern are the recent increasing trends in respiratory disease mortality, and the disproportionately slow improvement in mortality due to ischaemic heart disease among Glasgow's younger women.

Among women aged 15-44, the gap between Glasgow and the rest of Scotland narrowed for suicide, alcohol- and drug-related mortality in the period analysed, but the gap for all external causes (which includes suicide, alcohol and drugs) increased slightly to 52%. This indicates a persistently higher incidence of female deaths in the city caused by other external causes, such as assaults, MVTAs, and accidental falls and poisonings. It is also notable that despite the reductions in the overall mortality gap by gender in the 15-44 age group between Glasgow and the rest of Scotland, the gap is larger among women – 32% higher mortality among Glaswegian women compared with 18% among Glaswegian men in 2015. When specific causes of death are considered IHD mortality among women in this age group in Glasgow is, strikingly, 155% higher than for women in the rest of Scotland and respiratory disease mortality among Glaswegian women is 152% higher (in 2011-2015). Additionally, the female mortality gap between Glasgow and the rest of Scotland for both these conditions increased over the period studied.

The most notable differences in mortality rates between Glasgow and the rest of Scotland were found among people of older working age (45-64), and most clearly among men. In 2015, the all-cause mortality rate among men aged 45-64 in Glasgow was 72% higher than that among men in the rest of Scotland and this excess has increased since 1981, when it stood at 45%. The mortality gap between Glasgow and the rest of Scotland is apparent for all the specific causes, but is particularly high among men with respect to deaths caused by drugs, respiratory diseases and alcohol (see Table 3).

It is notable that the mortality gap between Glasgow and the rest of Scotland varies by gender and age group. In the younger adult age group (15-44 years old) the gap is greater for females than males, but the reverse is seen in older age groups (45-64 years old and 65 years and over).

The more pronounced decline in drug- and alcohol-related deaths in recent years among younger adults (15-44) in Glasgow compared with the rest of Scotland may be partly explained by an ageing cohort of individuals who were vulnerable to substance abuse as a consequence of societal influences during their young adulthood^{9,12}. As these individuals get older, the age of death caused by substance abuse increases, and rates of mortality in the 15-44 years age group subsequently declines. It is notable that the rate of drug-related deaths in the 45-64 years age group has been rising since 2000 and that this increase has become progressing steeper in recent years, particularly for men, and especially among Glaswegian men.

It has been observed that rising female consumption of alcohol and the progression of higher-consuming birth cohorts through the life-course have driven increased per capita alcohol consumption in the United Kingdom, while recent declines in consumption appear to be attributable to reduced consumption and increased abstinence rates among the most recent birth cohorts, especially males¹⁴. The decline in alcohol-related mortality in Scotland since the early 2000s has been partly explained by a model predicting the impact of declining incomes¹⁵.

Male suicide rates declined more across all ages in Glasgow than in the rest of Scotland between 1981-1985 and 2011-2015. Parkinson *et al.*¹⁶ have identified a cohort of individuals at increased risk of suicide born between 1960 and 1980, particularly those born between 1965 and 1974. This vulnerable cohort consisted mainly of men and people living in the most deprived areas of Scotland. Our analyses show that suicide rates in 2011-2015 were higher among men and highest among men in Glasgow in the 45-64 age group despite recent reductions. The mortality contribution of an ageing cohort of vulnerable Glaswegian men may partly explain the finding that suicide rates rose and fell more among men in Glasgow than in the rest of Scotland between 1981 and 2015.

Recent mortality trends (from around 2006 onwards) show increases in mortality from all external causes in the 15-44 years and 45-64 years age groups. This can partly be explained by drug-related deaths accounting for an increasingly larger proportion of the deaths in the 'all external causes' category, and drug-related deaths increasing, particularly among 45-64 year olds.

In the oldest age group (65+) there was a marked increase in all-cause mortality between 2014 and 2015. A rise in mortality in this period, particularly among the elderly, has been noted by others^{17,18} and occurred in all areas of the United Kingdom. These authors have noted competing reasons for the rise, including a spike in seasonal disease (i.e. influenza) and the impact of austerity-related cuts in healthcare and social services on a vulnerable population. Our analyses, which were focused on broad disease groupings, do not provide support for one explanation over the other, but show that increased mortality among the elderly was driven largely by rises in deaths due to respiratory disease, ischaemic heart disease, cancer, cerebrovascular disease and external causes (mostly accidental falls in this age group).

In the older age group (65+), there was a clear gender difference in cancer mortality, with rates among men decreasing and rates among women increasing. This may in part be explained by the fact that women generally live longer than men, and that cancer mortality increases with age. It is, however, also likely to be partly explained by a recognised trend of increasing cancer incidence among women. In this report, we did not analyse specific types of cancer, but other research has pointed out that, as several of the obesity-related cancers selectively affect women (e.g. uterine and breast cancer), the growing number of people who are severely overweight will have a greater effect on cancer incidence among women than among men¹⁹. Also, lung cancer has been shown to be increasing among women as a

consequence of the uptake in smoking occurring later among women, and this has brought female lung cancer rates closer to that of males in recent decades.

It is worth noting with caution – due to the relatively small numbers of deaths for this cause – that we have observed a rise in diabetes mortality in Glasgow among men aged 45-64 years old and among both men and women aged 65 years and older. It is concerning too that the downward trend in respiratory disease mortality among 45-64 year olds appears to have stalled in Glasgow, particularly among women. Additionally, while all-cause mortality among Glaswegians aged 45 and older has reduced, the gap between Glasgow and the rest of Scotland has widened for these age groups.

While the mortality gap between Glaswegians and the rest of Scotland for men and women aged 15-44 is still large for most causes, recent relative improvements seen in Glasgow (particularly in terms of mortality due to alcohol, drugs and suicide) reduced the gap in this age group more than in any other of the age groups. However, the relatively positive recent trends in mortality among Glasgow's young working-age population should be considered in the light of warnings that the prolonged post-recession austerity and consequential changes in social security structures may have created new cohorts vulnerable to suicide, and alcohol- and drug-related harm²⁰. Unless effective strategies for prevention and reduction of these problems are in place, Glasgow's recent progress in relation to these 'diseases of despair' may be undone in the coming decades.

Strengths and limitations of the analyses

This study focuses on mortality which is a useful objective measure of ill health and premature death that can be monitored over time. However, this type of analysis takes no account of morbidity during the life-course. The recent publication by NHS Health Scotland of the Burden of Disease Study²¹ provides a more comprehensive picture at a national level of health through the life-course, quantifying the combined impacts of illness, injury, disability and early death.

It should also be noted that the analyses in this study did not control for deprivation or socioeconomic position. Health trends, and inequalities in health, are strongly influenced by people's life circumstances, levels of income, wealth and ability to access services. Glasgow has a much more deprived population than the rest of Scotland and this will have an impact on the levels of mortality observed across the life-course and in relation to specific causes. It is also known that over the period of study there have been changes in many social determinants, nationally and within Glasgow (e.g. housing quality and tenure, educational attainment, income and income inequalities, the welfare system, migration) that will have had direct and indirect impacts on health. These social changes and caveats need to be borne in mind when interpreting the study findings.

The analyses were based on mortality data collected by National Records for Scotland (NRS) and efforts were made to provide as comprehensive a picture as possible of the underlying causes of death. However, some detail was omitted in the process of categorisation of deaths according to causes, in order to reduce the number of categories to a manageable number. In each year a number of deaths remained unspecified (categorised as 'other') because they could not be grouped together under any more meaningful category of causes and each cause contributed too little to merit its own separate category. This only affects the analyses of cause-specific mortality, while the analysis of all-cause mortality includes all recorded deaths. In the <1 age group the 'other' category comprised 12% of the total number of deaths over the years; in the 1-14 age group, 18%; in the 15-44 age group, 17%; in the 45-64 age group, 14%; in the 65+ age group, 22%.

In 2011, the National Records of Scotland upgraded the software used to code causes of death to take account of updates made by the World Health Organization (WHO) to the codes for certain causes of death. As a result, there is a difference in how deaths were coded from 2011 onwards to previous years, with deaths previously coded under 'mental and behavioural disorders' now being classed as 'self-poisoning of undetermined intent' consequently included in the group causes defined as suicides. Further details on changes to the coding of causes of death between 2010 and 2011 are available on the NRS website²².

The difference between rates based on old and new coding rules is small, and our report focuses on the difference in rates and their pattern between Glasgow and the rest of Scotland, which makes continuity breaks in rates less important.

Conclusions

There have been large reductions in mortality rates in most age groups in Glasgow and the rest of Scotland in the period 1981-2015. However, improvements in infant mortality (<1 year), child mortality (aged 1-14), mortality among 45-64 year olds and among people aged 65 and over have been relatively greater in the rest of Scotland than in Glasgow. Therefore, as a consequence of Glasgow lagging behind the rest of Scotland in terms of mortality reductions, there has been a widening in the gap in mortality between Glasgow and the rest of Scotland in these age groups.

All-cause mortality rates among younger working-age people (15-44 year olds) across Scotland remained relatively unchanged between the early 1980s and the mid-2000s, when the stability was replaced by a downward trend in mortality towards 2015. The decrease in mortality rates was more pronounced in Glasgow and largely driven by recent reductions in deaths caused by drugs, alcohol, and suicides. As a result, the gap in mortality for younger working-age people between Glasgow and the rest of Scotland narrowed from being 49% higher among women in Glasgow in 1981 to being 32% higher in 2015 and from being 34% higher for Glaswegian men in 1981 to being 18% higher in 2015.

Some cause-specific trends raise concerns. Improvements in mortality due to ischaemic heart disease, respiratory disease and cerebrovascular disease (for women) among younger working-age people have been slower in Glasgow. Respiratory disease has become a more prominent cause of death in older age groups. In addition, among people aged 45 years and over, Glasgow already had higher mortality from respiratory disease than the rest of Scotland and reductions in mortality from this cause have been lower in Glasgow leading to the mortality gap between Glasgow and the rest of Scotland widening further. It is also notable that drug-related deaths have become increasingly common and were the main cause of death among young men across Scotland and young women in Glasgow in 2015. Changes in the burden of mortality from specific causes for different age groups will have implications for prevention priorities and health and social care provision.

These analyses do not take account of periods of life spent in ill health or with a disability. Nor do these analyses focus on differences in mortality related to deprivation or social position. However, further publications arising from the Scottish Burden of Disease study will include deprivation and sub-national local analyses and these should complement the present study.

In contrast to the general pattern of a reduction in the mortality gap between Glasgow and the rest of Scotland seen among young working-age people, in older age groups (45 years and over), while mortality has reduced, improvements have been slower in Glasgow. This has led to a widening gap in mortality between Glasgow and the rest of Scotland among older adults for the majority of causes analysed.

These findings highlight the importance of taking a gendered perspective. The mortality gap between Glasgow and the rest of Scotland in the 15-44 years old age group is greater among women than men, while the reverse is true in older age groups with Glaswegian men having much higher mortality than men in the rest of Scotland. It is also notable that respiratory mortality has become a much more prominent cause of death, particularly among older women, and that, while cancer mortality among older men (65 years and over) has been reducing, cancer mortality among women has been rising.

This study underlines the importance of a continued focus on health in Glasgow using up-to-date data and one that is informed by awareness of the historical context, the impacts of cohort effects, harms to health accumulating over the life-course and of the impacts of past and present policies and political contexts.

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Appendix: Changes in all-cause and cause-specific mortality rates, Glasgow versus the Rest of Scotland, by age group.

Table A1. Changes in all-cause mortality 1981-2015, Glasgow versus the Rest of Scotland, by age group (<15).

All-cause mortality			Numbers		Standardised rates							
	Place	Gender	Year		% Change	1981-85	LCL	UCL	2011-15	LCL	UCL	% Change
			1981	2015								
Glasgow	Female	<1	52	13	-75%	10.1	7.1	13.0	3.9	1.8	5.9	-62%
		1-14	14	6	-57%	22.7	10.6	34.7	11.6	1.4	21.8	-49%
	Male	<1	56	14	-75%	11.0	8.0	14.0	4.7	2.5	6.8	-58%
		1-14	18	4	-78%	44.2	27.4	61.0	16.7	4.5	29.0	-62%
Rest of Scotland	Female	<1	289	63	-78%	9.0	7.9	10.1	3.1	2.4	3.8	-66%
		1-14	106	18	-83%	26.2	21.3	31.2	7.9	4.9	10.8	-70%
	Male	<1	376	77	-80%	11.7	10.4	12.9	3.7	3.0	4.5	-68%
		1-14	167	42	-75%	35.8	30.2	41.4	11.9	8.4	15.4	-67%

*Rates for infants are crude (not standardised, but calculated per 1,000 live births)

Table A2. Changes in all-cause mortality 1981-2015, Glasgow versus the Rest of Scotland, by age group (15+).

All-cause mortality												
	Numbers					Standardised rates						
	Place	Gender	Age	Year		% Change	1981			2015		
1981				2015	1981		LCL	UCL	1981	LCL	UCL	
Glasgow	Female	15-44	135	103	-24%	118.7	98.0	139.3	89.1	71.7	106.6	-25%
		45-64	932	415	-55%	1,022.0	956.2	1,087.9	563.8	509.2	618.4	-45%
		65+	4,326	2,747	-37%	6,782.0	6,573.0	6,991.0	5,126.6	4,932.7	5,320.5	-24%
	Male	15-44	273	190	-30%	223.8	195.8	251.8	155.2	132.7	177.8	-31%
		45-64	1,527	734	-52%	1,943.0	1,845.4	2,040.7	1,059.6	982.7	1,136.5	-45%
		65+	3,460	2,243	-35%	11,085.4	10,637.3	11,533.4	7,224.3	6,918.9	7,529.7	-35%
Rest of Scotland	Female	15-44	653	583	-11%	79.9	73.7	86.1	67.8	62.3	73.3	-15%
		45-64	3,984	2,782	-30%	765.3	741.6	789.1	410.9	395.6	426.2	-46%
		65+	21,421	22,840	7%	6,216.4	6,130.9	6,301.8	4,388.2	4,331.0	4,445.3	-29%
	Male	15-44	1,365	1,068	-22%	166.5	157.7	175.3	131.3	123.5	139.1	-21%
		45-64	6,211	3,962	-36%	1,343.0	1,309.5	1,376.4	617.2	598.0	636.4	-54%
		65+	17,923	19,377	8%	9,502.0	9,340.5	9,663.6	5,532.8	5,453.4	5,612.1	-42%

Table A3. Cause-specific standardised mortality rates 1981-85 to 2011-15, Glasgow versus the Rest of Scotland, women by age group.

Cause	Age	Glasgow				Rest of Scotland				Mortality Gap
		% of total in age group, 2011-2015	1981-1985	2011-2015	% Change	% of total in age group, 2011-2015	1981-1985	2011-2015	% Change	Mortality rate in Glasgow as a percentage of mortality rate in the rest of Scotland
All external causes	15-44	33.8%	25.4	30.1	19%	30.3%	16.9	19.9	17%	52%
	45-64	7.6%	44.8	42.7	-5%	5.8%	33.6	24.1	-28%	78%
	65+	2.3%	176.0	108.1	-39%	2.2%	195.7	94.6	-52%	14%
Drugs	15-44	22.8%	12.2	21.1	73%	17.7%	4.4	11.7	169%	80%
	45-64	4.1%	12.7	23.8	87%	2.5%	7.9	10.5	32%	127%
	65+	0.1%	5.3	9.5	78%	0.1%	5.8	3.0	-48%	217%
Cancer	15-44	19.4%	36.9	19.5	-47%	27.4%	29.8	18.0	-40%	8%
	45-64	42.2%	368.1	256.3	-30%	48.6%	311.5	205.0	-34%	25%
	65+	31.3%	1,188.4	1,334.1	12%	24.3%	999.0	1,078.7	8%	24%
Suicide	15-44	13.7%	14.7	12.8	-13%	9.7%	7.0	9.7	40%	31%
	45-64	2.6%	18.5	16.8	-10%	2.6%	16.2	10.5	-35%	59%
	65+	0.3%	15.5	10.9	-30%	0.1%	12.4	4.7	-62%	132%
Alcohol	15-44	11.4%	8.7	11.8	35%	8.6%	2.7	5.8	111%	105%
	45-64	7.6%	36.4	44.4	22%	6.4%	16.8	26.7	59%	66%
	65+	1.1%	24.3	26.8	10%	0.4%	13.9	19.1	37%	41%
Respiratory disease	15-44	5.4%	7.2	7.0	-3%	3.9%	4.0	2.8	-31%	152%
	45-64	12.2%	91.7	75.0	-18%	8.1%	51.9	34.4	-34%	118%
	65+	14.1%	973.8	858.4	-12%	14.0%	738.5	600.8	-19%	43%
Ischaemic heart disease	15-44	4.5%	10.3	6.0	-42%	3.2%	4.9	2.3	-53%	155%
	45-64	7.2%	211.3	43.4	-79%	7.1%	167.8	30.0	-82%	45%
	65+	16.1%	1,669.9	547.0	-67%	11.7%	1,641.9	504.8	-69%	8%
Cerebrovascular disease	15-44	2.6%	11.9	4.6	-62%	2.8%	6.3	2.1	-67%	118%
	45-64	3.5%	77.6	21.3	-73%	4.1%	70.5	17.3	-75%	23%
	65+	7.6%	1,131.0	477.1	-58%	10.4%	1,206.1	440.8	-63%	8%
Diabetes	15-44	1.4%	3.4	3.7	9%	1.9%	1.1	1.3	15%	182%
	45-64	1.5%	10.1	11.5	14%	1.4%	7.2	5.8	-20%	98%
	65+	1.5%	56.6	65.7	16%	1.3%	59.6	58.5	-2%	12%
Motor vehicle traffic accidents	15-44	0.6%	6.8	2.3	-66%	2.5%	5.0	1.7	-66%	37%
	45-64	0.3%	9.0	6.7	-25%	0.3%	4.8	1.6	-67%	325%
	65+	0.1%	21.9	6.3	-71%	0.1%	14.2	4.0	-72%	58%

Table A4. Cause-specific standardised mortality rates 1981-85 to 2011-15, Glasgow versus the Rest of Scotland, men by age group.

Men		Glasgow				Rest of Scotland				Mortality Gap
Cause	Age	% of total in age group, 2011-2015	1981-1985	2011-2015	% Change	% of total in age group, 2011-2015	1981-1985	2011-2015	% Change	Mortality rate in Glasgow as a percentage of mortality rate in the rest of Scotland
All external causes	15-44	49.7%	75.2	82.4	9%	53.3%	59.5	69.6	17%	18%
	45-64	9.9%	116.1	100.4	-14%	9.6%	70.0	57.6	-18%	74%
	65+	2.4%	247.6	168.0	-32%	2.3%	193.4	125.7	-35%	34%
Drugs	15-44	29.1%	11.7	50.6	332%	25.8%	5.9	34.2	479%	48%
	45-64	4.6%	10.9	47.1	330%	2.8%	5.5	17.0	209%	177%
	65+	0.1%	21.9	14.5	-34%	0.1%	4.7	4.4	-6%	231%
Cancer	15-44	9.9%	32.1	18.2	-43%	10.2%	22.4	13.4	-40%	36%
	45-64	31.8%	535.7	345.1	-36%	35.1%	367.9	215.1	-42%	60%
	65+	32.1%	2,415.4	2,174.1	-10%	31.3%	1,874.4	1,620.6	-14%	34%
Suicide	15-44	16.5%	31.8	27.1	-15%	23.3%	20.4	30.3	49%	-10%
	45-64	3.2%	47.7	31.7	-34%	4.5%	27.2	27.1	0%	17%
	65+	0.2%	38.9	19.8	-49%	0.3%	23.8	15.2	-36%	30%
Alcohol	15-44	11.5%	15.1	21.4	41%	7.2%	5.4	9.9	83%	116%
	45-64	11.4%	86.1	117.6	37%	8.9%	28.9	54.1	87%	118%
	65+	1.6%	52.6	102.3	94%	1.1%	28.9	50.0	73%	104%
Respiratory disease	15-44	2.9%	11.3	7.0	-38%	2.2%	5.4	3.1	-43%	129%
	45-64	8.8%	151.4	95.6	-37%	6.5%	83.1	39.7	-52%	141%
	65+	16.2%	2,082.4	1,172.6	-44%	14.1%	1,452.0	791.3	-46%	48%
ischaemic heart disease	15-44	6.0%	34.4	14.2	-59%	6.5%	22.6	8.7	-61%	62%
	45-64	16.5%	640.2	176.2	-72%	18.2%	543.6	111.2	-80%	58%
	65+	14.5%	2,792.0	1,000.1	-64%	16.1%	2,834.0	868.5	-69%	15%
Cerebrovascular disease	15-44	1.5%	12.0	4.9	-60%	1.7%	5.7	2.5	-56%	96%
	45-64	3.3%	100.5	36.6	-64%	3.4%	84.9	21.0	-75%	74%
	65+	7.2%	1,273.5	517.6	-59%	7.6%	1,323.9	429.6	-68%	20%
Diabetes	15-44	1.1%	4.4	4.4	0%	1.2%	1.6	1.7	4%	156%
	45-64	1.6%	14.8	18.0	21%	1.4%	10.5	8.7	-17%	106%
	65+	1.5%	73.6	100.2	36%	1.5%	70.7	78.5	11%	28%
Motor vehicle traffic accidents	15-44	1.4%	18.1	4.8	-74%	5.6%	21.6	7.2	-67%	-34%
	45-64	0.4%	21.8	7.5	-65%	0.9%	14.6	5.3	-64%	43%
	65+	0.1%	56.4	20.1	-64%	0.1%	25.0	6.4	-75%	216%