National Records of Scotland

Scotland's Population

The Registrar General's Annual Review of Demographic Trends

2017

163rd Edition

NATIONAL STATISTICS

Preserving the past | Recording the present | Informing the future

Annual Report of the Registrar General of Births, Deaths and Marriages for Scotland 2017

163rd Edition

To Scottish Ministers

I am pleased to present to you my Annual Report for the year 2017, which will be laid before the Scottish Parliament pursuant to Section 1(4) of the Registration of Births, Deaths and Marriages (Scotland) Act 1965.

Anne Slater
Registrar General for Scotland
1 August 2018

Published 1 August 2018

SG/2018/90

Contents

Page

Foreword 7

Headline Messages 9

Chapter 1 – Population 23

Chapter 2 – Births 39

Chapter 3 – Deaths 51

Chapter 4 – Life expectancy 69

Chapter 5 – Migration 81

Chapter 6 – Marriages and civil partnerships 97

Chapter 7 – Adoptions 107

Chapter 8 – Households and housing 111

Chapter 9 – Statutory registration 119

Chapter 10 – Invited chapter: Burden of Disease in Scotland 127

Appendix 1 – Summary Tables 149

Appendix 2 – Notes, Definitions and Quality of Statistics 153

Notes on Statistical Publications 163

Foreword

It gives me great pleasure to present the 163rd Registrar General's Annual Review, my first annual report since taking up the position of Registrar General and Acting Chief Executive of National Records of Scotland.

The report provides an overview of Scotland in 2017 looking at key demographic trends for population, migration, and households, as well as analysis of key life events including births, deaths, marriages and civil partnerships.

The impact of migration on Scotland's population growth continues to be a matter of regular public debate. The population is at its highest ever at just over 5.42 million, growing by 5% over the last 10 years – with the majority of this growth due to migration. While the impact of the UK voting to leave the European Union remains unclear, it will undoubtedly have consequences for the people of Scotland and it is therefore more important than ever that good evidence is available to support any related policies or decisions.

Latest figures also show that Scotland's population is projected to continue to age over the next 25 years, with the fastest growing age group those aged 75 and over, projected to increase by nearly 80%. While Scotland is similar to the rest of the UK and many countries around the world in enjoying the positive benefits associated with people living longer, this has implications for funding allocations, tax revenues, pensions, education, health and social care provision. The growing and ageing population has also slowed the long-term downward trend in overall numbers of deaths in Scotland and, alongside the 2% increase in the year to 2017, it may be expected that the number of deaths will increase for the foreseeable future.

While we continue to report on the trends in causes of death in Scotland, this year's invited chapter explores the concept of burden of disease. This is a measure of the health of a population, and the first time that Scotland-specific estimates have been calculated using the full range of data sources in Scotland. It allows an estimate of the contribution that different diseases, conditions and injuries make to the total burden of disease. The research shows that burden of disease is generally greater in more deprived areas of Scotland, and that burden is more likely to be fatal. This provides information to support decisions about where prevention and service activity could be focussed.

Communicating our statistics clearly and with impact is essential in ensuring that the vital demographic information published at NRS is integral to decision making in Scotland – sharing the expertise we have to influence in a valuable way. Following a

review of our demographic statistics publications, we welcome feedback on the improvements we have made to the format and content of this year's annual report.

I would also like to acknowledge the vital work undertaken by the Registration Services located across Scotland. The production of this report simply wouldn't have been possible without their collective commitment and professionalism. This information plays a pivotal role in supporting evidence based decision making and the delivery of public services; informing both regional and international comparisons; and underpinning our population estimates and projections, which are integral to the policy development and evaluation work undertaken by both central and local government.

In keeping with our new vision for NRS statistics, we will continue to provide trustworthy and relevant information to inform the important decisions that need to be made in Scotland, while also increasing our reach and impact across all users of our data.

Anne Slater
Registrar General,
National Records of Scotland

Headline Messages

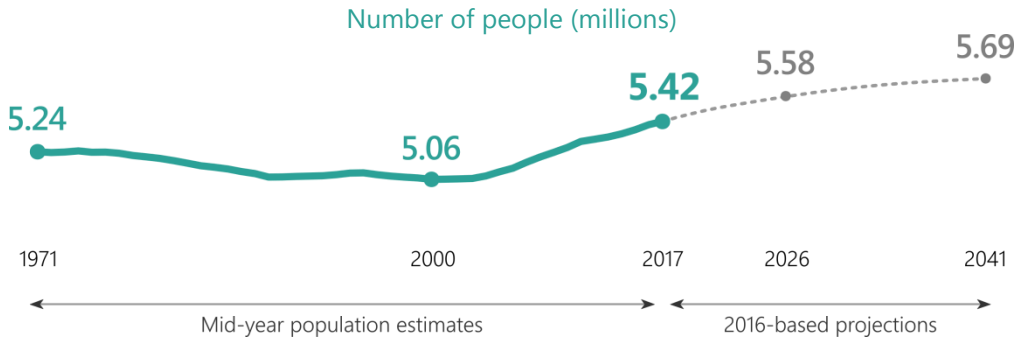
Population

Scotland's population continued to grow over the latest year to mid-2017 and is projected to keep growing

The population of Scotland on 30 June 2017 was 5,424,800. The population has increased every year since 2000 and in 2017 was the largest ever seen.

Over the latest year to mid-2017, Scotland's population has grown at a slower rate (0.4%) than that seen in the previous year to mid-2016 (0.6%), but within the range of population change we have seen over the past 10 years, where annual growth rates varied between 0.3% to 0.7%.

Scotland's population is projected to grow to 5.58 million in 2026, and to continue rising to reach 5.69 million in 2041.



Migration is the main reason for Scotland's population increase

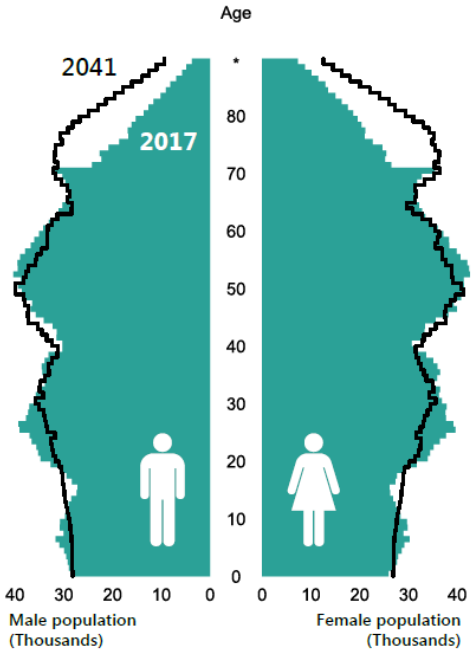
In the year to mid-2017, 23,900 more people came to Scotland than left. This contributed to the increase in Scotland's population.

In contrast, natural change (births minus deaths) has not contributed to Scotland's recent population growth, as there were 3,800 more deaths than births in the latest year.

Since 2000, Scotland's population has increased mostly due to migration (more people arrived than left) and this trend is projected to continue over the next 25 years. Scotland's future population growth is projected to be entirely reliant on migration, as there are projected to be more deaths than births each year going forward.

Scotland's population is projected to age

In the year to mid-2017, just under one in five people (19%) were aged 65 and over. However by 2041, one in four people (25%) are projected to be in this age group.



	Estimated in 2017	Projected in 2041
65 and over	19%	25%
between 16 and 64	64%	59%
15 and under	17%	16%

* Only people aged 89 and under are shown for illustrative purposes.

The fastest growing age group in Scotland is projected to be those aged 75 and over, increasing by 79% over the 25 year period between 2016 and 2041. This is followed by those aged 65 to 74, projected to grow by 17% over the same period.

In contrast, the population of all other groups (below age 65) are projected to decline over the 25 year period to 2041.

Projected population change varies by council area in Scotland, with some areas projected to face depopulation

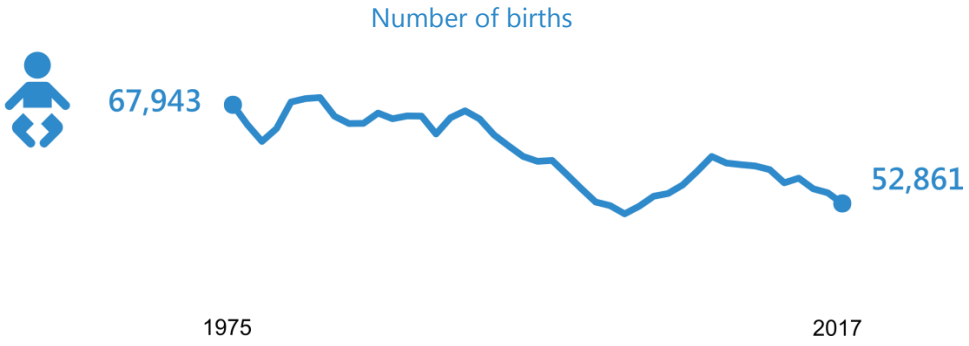
Between 2016 and 2026, the population is projected to grow in most council areas across Scotland.

- 12 councils are projected to grow faster than the Scottish average (>3.2%)
- 12 councils are projected to grow but at a slower rate than the Scottish average (≤3.2%).
- 8 councils are projected to experience depopulation and these areas are concentrated in the west of Scotland.

Births

The number of births in Scotland continued to fall in 2017

There were 52,861 births registered in Scotland in 2017, which represents 1,627 (3%) fewer births than in 2016 and 15,082 (22%) fewer births than in 1975.



The average age of mothers was 30.5 in 2017, compared to 27.4 in 1991, 26.1 in 1977 and 27.4 in 1964. Similarly, the average age of fathers has also increased to 33.0 in 2017, compared to 30.0 in 1991 and 28.6 in 1977.

The total fertility rate in Scotland has been the lowest in the UK since 1980

In 2017, the total fertility rate for Scotland was 1.47. For a population to replace itself, the total fertility rate needs to be around 2.1. The last time Scotland met the replacement total fertility rate was in 1973, with a total fertility rate of 2.13.

Since the early 1980s, Scotland's total fertility rate has been below the levels for the other parts of the United Kingdom.

The rise in fertility levels in Scotland between 2002 and 2008 was broadly paralleled elsewhere in the UK. Fertility rates for all UK countries have fallen since 2008 with Scotland falling at a faster rate than the other countries.

Most births in Scotland in 2017 were to mothers who were born in the UK

In 2017, 83% of births were to mothers who were born in the UK, including 73% who were born in Scotland.

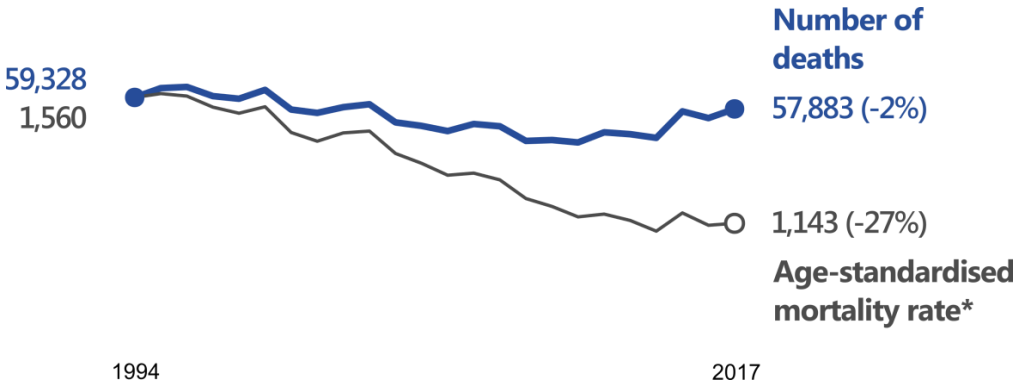
Mothers born elsewhere in the European Union (EU) represented 9%, including 6% who were born in countries which joined the EU in 2004 or later.

Deaths

The number of deaths registered in Scotland increased in 2017

There were 57,883 deaths in 2017 – 2% more than in 2016, and the highest number of deaths since 2003.

The age-standardised mortality has decreased by 27% since 1994 but increased by 0.6% in the last year. This offers a more accurate picture of the trend in deaths as it takes account of changes in the population structure and shows what the trend would be if the population structure had remained the same over time. There has been no improvement in the age-standardised death rate in the last three years, suggesting that we may be reaching a turning point, or a plateau, in the downward trend.



* European Age-standardised rate (EASR) per 100,000 population using the 2013 European Standard Population. For comparison, the two lines start at the same point.

Leading causes of death in Scotland in 2017

The leading cause of death in 2017 was ischaemic heart disease, which accounted for 11.6% of all deaths. This was closely followed by dementia and Alzheimer's disease which accounted for 11.3% of all deaths.

The leading cause differed by sex, with men more likely to die from ischaemic heart disease (14.3% of all deaths) and women more likely to die from dementia and Alzheimer's disease (14.8% of all deaths).

The leading cause of death analysis is based on a list of causes developed by the World Health Organisation (WHO). There are around 60 categories in total and cancers are grouped separately according to the type of cancer, for example, lung, breast and prostate cancer are all counted as separate causes. If all cancers were grouped together, cancer would be the leading cause of death.

In 2017, stillbirth and infant deaths rates fell, remaining close to their lowest ever levels

There were 225 stillbirths and 176 infant deaths in Scotland in 2017.

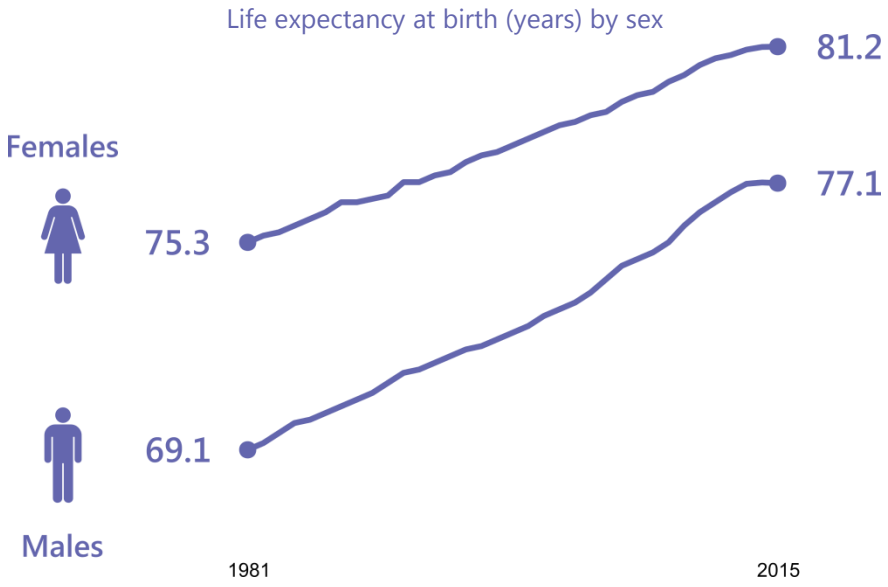
In 2017, the stillbirth rate (4.2 per 1,000 live and still births) and the infant death rate (3.3 per 1,000 live births) were very low in historic terms, with 2015 having the lowest rates ever.

Life expectancy

Life expectancy in Scotland has increased over the past three decades, but has stalled in recent years

Since 1981 life expectancy in Scotland has increased, rising from 69.1 years for males and 75.3 for females born around 1981 to 77.1 for males and 81.2 for females born around 2015.

The gap in life expectancy between females and males decreased from 6.2 years for those born around 1981 to 4.1 years for those born around 2015.



Life expectancy at birth was lowest in the most deprived areas of Scotland for people born around 2015

There was a difference between life expectancy in the most and least deprived areas of Scotland. This was more pronounced for men (12.6 years) than for women (9.2 years) for those born around 2015.

The gap in life expectancy between females and males was also larger in the most deprived areas (6.0 years) than in the least deprived areas (2.6 years).

Scotland has the lowest life expectancy of all UK countries

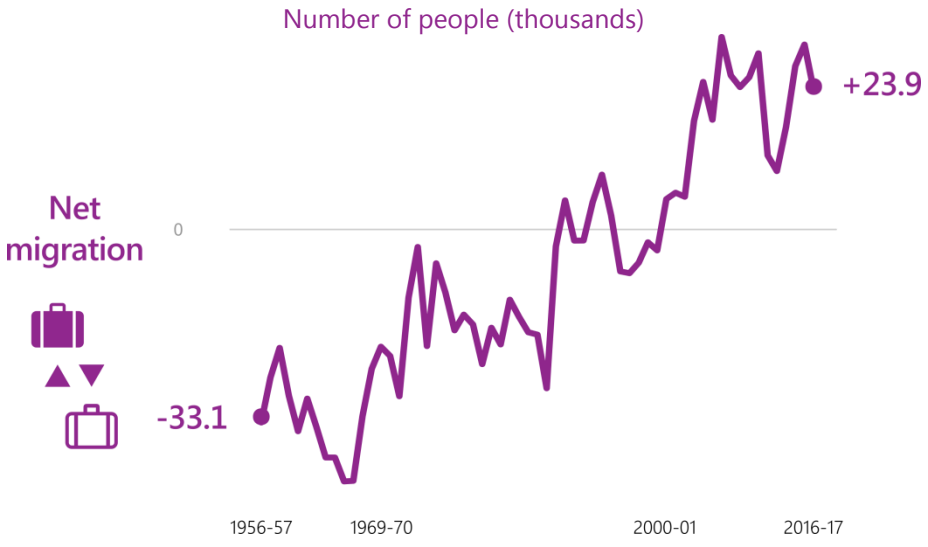
Life expectancy in Scotland has been lower than the other UK constituent countries and lower than most countries in Western Europe for both males and females for more than 30 years.

Migration

Net migration fell in the past year, but remained positive with more people coming to Scotland than leaving

Over the year to mid-2017, 23,900 more people came to Scotland than left, lower than the previous year (when net migration was +31,700 people).

Before the 1990s, Scotland was predominantly a country of negative migration with more people leaving than arriving. However during the 2000s, net migration became consistently positive and increased, peaking in the year to mid-2007 when net migration was +33,000 people.



Most people moving to Scotland come from the rest of the UK

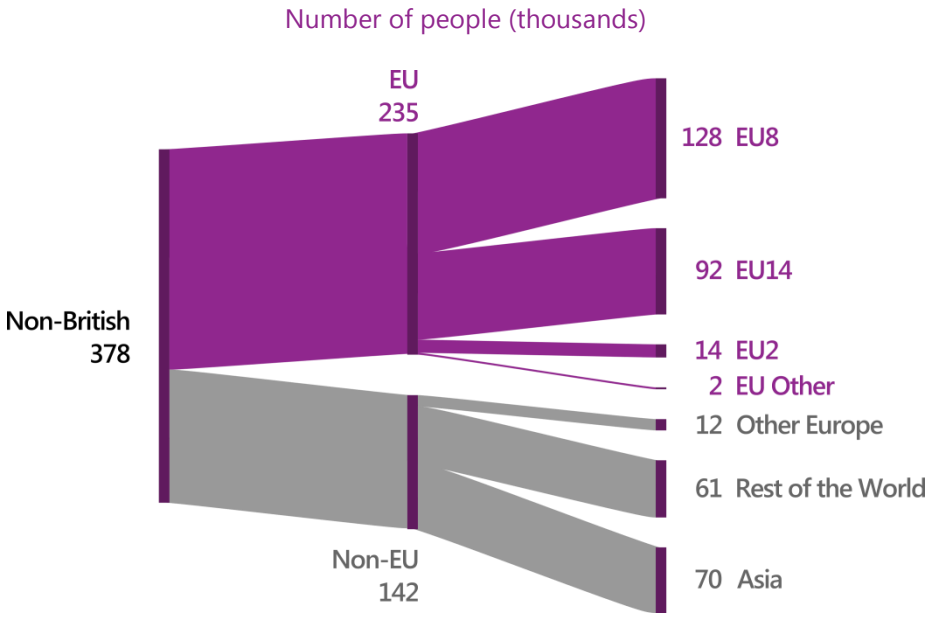
Over the year to mid-2017, the number of people moving to Scotland from the rest of UK increased: 47,600 people came to Scotland from the rest of the UK, up from 46,300 the previous year.

In contrast, the number of people coming to Scotland from overseas decreased: 32,900 people arrived from overseas, down from 40,400 the previous year.

EU nationals make up 62% of the non-British population of Scotland

In 2017, there were 378,000 non-British nationals living in Scotland, making up 7% of Scotland's population. Of all non-British nationals, 235,000 were EU nationals and 142,000 were non-EU nationals.

Within the EU national population, the largest sub-group was EU8 nationals (Poland, Latvia, Lithuania, Estonia, Czech Republic, Slovakia, Slovenia and Hungary), with 128,000 nationals of EU8 countries living in Scotland in 2017.



Polish is the most common non-British nationality in Scotland

In 2017, there were 99,000 Polish nationals living in Scotland, representing 26% of all non-British nationals, and 2% of the total resident population.

The most common non-EU nationality was India with 16,000 people living in Scotland in 2017.

Scotland's projected population varies under different assumptions of future migration

Under the principal projection, the population of Scotland is projected to grow by 5.3% to 5.69 million by 2041.

Variant projections give an idea of the uncertainty around demographic behaviour and help illustrate the potential size of the population if, for example, migration was higher or lower than that assumed under the principal projection.

In an illustrative scenario of 50% less EU migration, Scotland's population would increase at a slower rate, rising by 3.7% to 5.60 million by 2041.

Marriages and civil partnerships

3.5% of marriages in Scotland in 2017 involved same sex couples

In 2017, there were 28,440 marriages registered in Scotland, of which 27,458 were opposite-sex couples and 982 were same-sex couples. The number of civil partnerships was 70, the second lowest annual number since The Civil Partnership Act 2004 came into force.

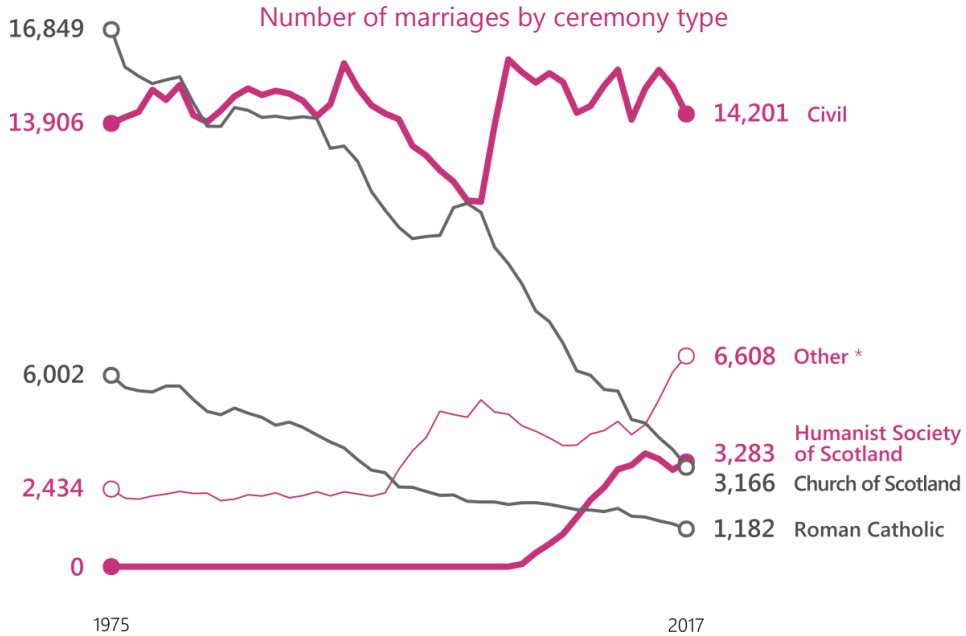
The average age at first marriage in Scotland increased in 2017 for both males and females

In Scotland, the average age at first marriage has increased for both males and females by almost 10 years since 1975. The average age at first marriage increased from 24.3 to 34.2 for males and from 22.4 to 32.5 for females.

Half of the marriages in Scotland in 2017 were civil ceremonies

Of all marriages celebrated in Scotland in 2017, 50% were civil ceremonies compared to 35% in 1975. The number of religious and other belief system marriages has fallen by 44% since 1975. Most notably, there were declines in Church of Scotland and Roman Catholic ceremonies.

Since 2005, the number of marriages conducted by humanist organisations has increased considerably, with 5,912 marriages being officiated by humanist celebrants in 2017. The largest of these groups was the Humanist Society of Scotland, which conducted 3,283 ceremonies in 2017.

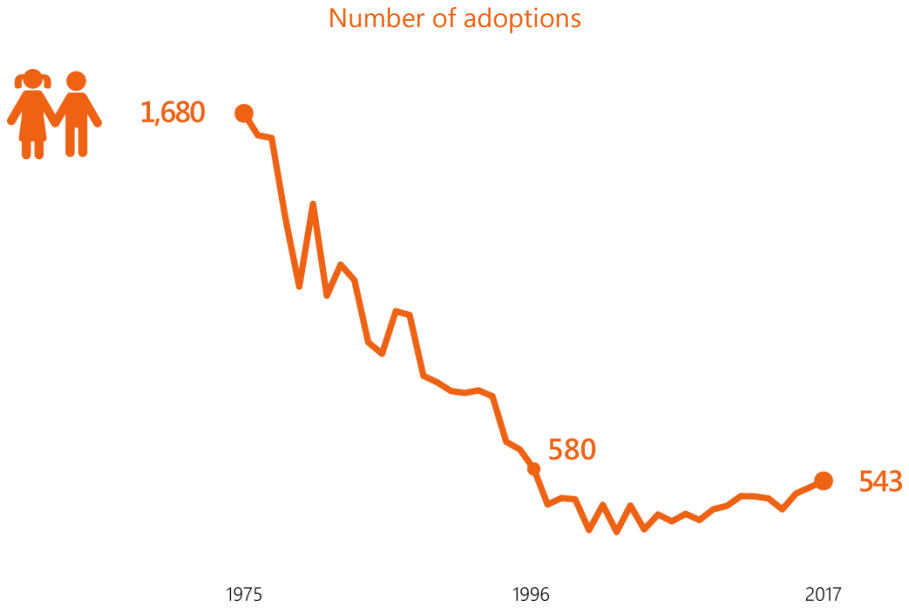


* Other religious and other beliefs systems including other Humanist organisations.

Adoptions

There were 543 adoptions in Scotland in 2017 – the highest since 1996

There were 543 adoptions recorded in 2017. This was 20 more than in 2016 and was the highest number recorded since 1996. This was around half the number recorded per year in the mid-1980s, and less than a third of the 1975 total.



Households and housing

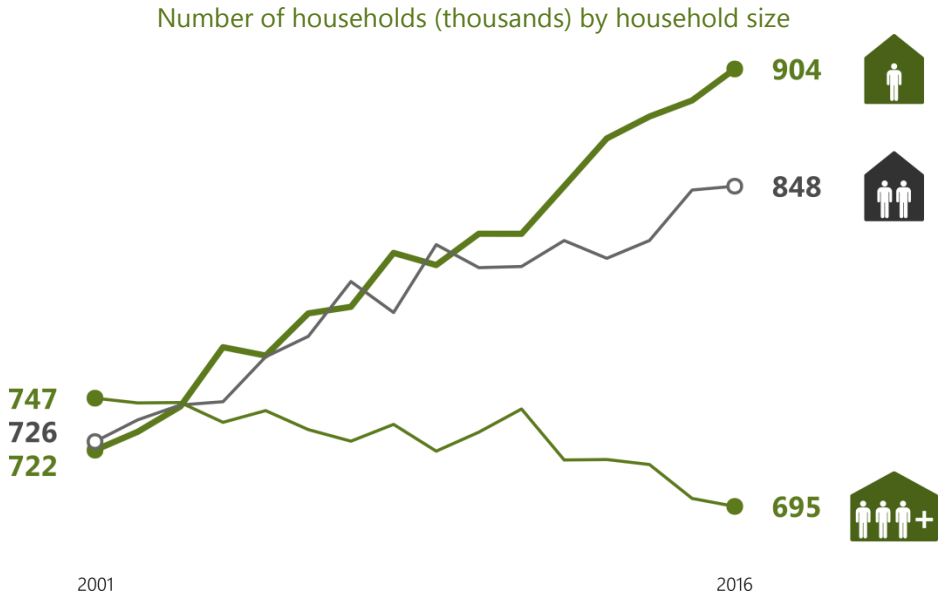
The number of households in Scotland is projected to increase

In mid-2017, there were 2.46 million households in Scotland, which is an increase of around 145,000 over the past 10 years.

The number of households is projected to increase to 2.76 million by 2041, an average annual increase of approximately 12,700 households.

People are increasingly living alone or in smaller households in Scotland

One person households are the most common type of household in Scotland. In 2016, around 900,000 people lived alone. They represented over one third of households. This is partly because Scotland's population is ageing, as older people are more likely to live alone or in smaller households.



96% of homes in Scotland were occupied in 2017

Overall in Scotland in 2017, 3% of homes were empty and 1% were second homes, though there were wide differences across the country. Remote rural areas had the highest percentage of homes that were empty or second homes.

Statutory registration

Registration

Since 1855, by law all births, deaths and marriages (and since 2005 civil partnerships) must be registered. Councils are responsible for providing the registration service under the supervision of the Registrar General.

Each year since 2007, registrars in the 32 councils have achieved a high rate of accuracy, with an average of around 97% of the records they create having no mistakes in them.

Registration data is used widely, for instance by members of the public, as a key data source for demographic statistics, as the base for future family history research and for benefits to society.

NHSCR

The NHSCR was established in the 1950s to help the new NHS manage patient registrations – ensuring patients were only registered with one doctor at a time.

The NHSCR is now used to help ensure that the movement of patients between GP practices and NHS Health Boards are properly recorded – a key way of monitoring internal migration in Great Britain.

The NHSCR provides benefits to:

- NHS – quality assuring patient registration and enabling cross-border patient moves
- Citizens – improving online access to public services and providing a tracing service used by organisations such as the police and charities
- Society – supporting important medical research, contributing to essential statistics describing Scotland and supporting research using linked data.

Invited chapter

Burden of Disease in Scotland

This year's invited chapter has been written by analysts at NHS Health Scotland and it explores the concept of burden of disease. This is a measure of the health of a population, and the first time that Scotland-specific estimates have been calculated using the full range of data sources in Scotland.

It allows an estimate of the contribution that different diseases, conditions and injuries make to the total burden of disease, by combining estimates from two individual metrics:

- Years of Life Lost (YLL) due to premature mortality
- Years Lived with Disability (YLD) due to time spent living in less than ideal health.

The measure used to describe the overall burden of disease is called the disability-adjusted life year (DALY).

The research shows that burden of disease is generally greater in more deprived areas of Scotland, and that burden is more likely to be fatal. This provides information to support decisions about where prevention and service activity could be focussed.

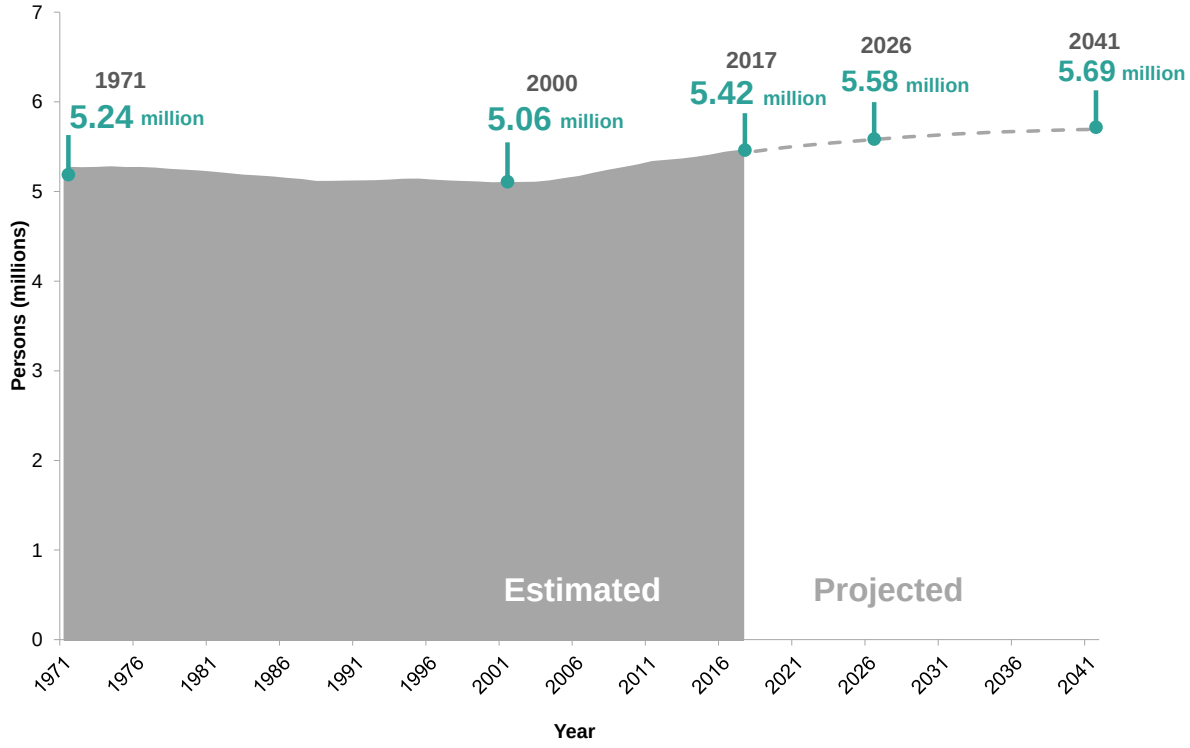
Population

"Over the past 15 years Scotland's population has grown and aged, and it is projected to continue doing so."

Scotland's population past, present and future

Scotland's population has been growing since 2000 and is projected to continue doing so over the next 25 years. The most recent population estimate recorded Scotland's population at 5.42 million as at 30th June 2017 (commonly referred to as mid-2017).

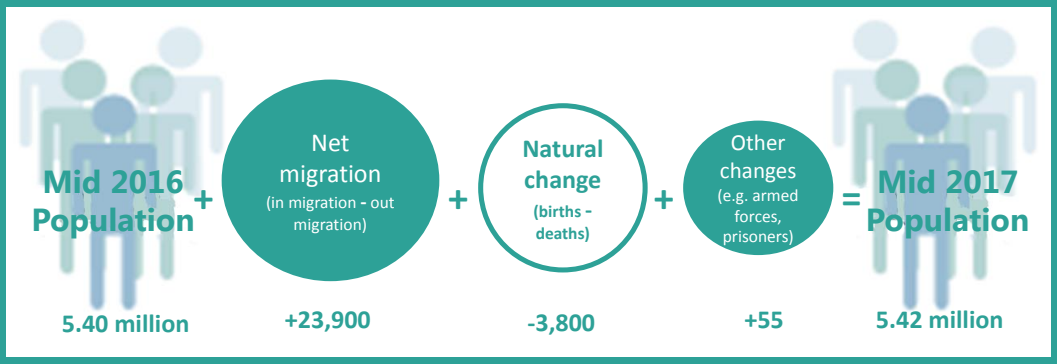
Figure 1.1: Population of Scotland, actual and projected figures, mid-1971 to mid-2041



Over the year to mid-2017, Scotland's population increased by 20,100 people (0.4%). This is a smaller increase than that seen in the year to mid-2016 (0.6%) but within the range of population change we have seen over the past 10 years, where annual growth rates varied between 0.3% to 0.7%. As can be seen in Figure 1.1, the population of Scotland is projected to keep increasing, to 5.58 million in 2026, and to reach 5.69 million people in 2041.

What is meant by the estimated and projected population?

Population estimates are based on the Census and updated annually. The main components to change are natural change (births minus deaths) and long-term net migration. We also account for changes in the armed forces and prison populations. The latest mid-year population estimates relate to the population as at 30th June 2017 (mid-2017) and we can see below how Scotland's population has changed over the year.



Population projections are based on the mid-year population estimates and a set of underlying assumptions about future levels of fertility, mortality and migration. The assumptions are based on past trends. They are not forecasts and do not attempt to predict the impact of future policy initiatives, political or economic change. The latest projections are based on the mid-2016 population estimates as they are updated every 2 years.

Components of population change

There are two main components which drive change in the population – these are natural change (births minus deaths) and changes in long term migration.

As can be seen from the light green line in Figure 1.2, natural change has not contributed to Scotland's recent population growth. In the year to mid-2017, there were 3,800 more deaths than births across Scotland, compared to 800 more deaths than births in the previous year. This was due to a decrease in the number of births and an increase in the number of deaths between mid-2016 and mid-2017.

Migration has been the main driver of the growth in Scotland's population over the past 17 years.

As the dark green line in Figure 1.2 shows, over the year to mid-2017, Scotland had positive net migration with 23,900 more people coming to Scotland than leaving, from both overseas and the rest of the UK. However there has been a reduction of 25% over the last year – previously in the year to mid-2016, overall net migration was higher with 31,700 more people arriving than leaving in that year. Whilst this coincides with the period after the UK referendum on EU membership, migration trends tend to be more volatile and there will be many factors influencing people's decisions to move to and from the UK. More information on the latest migration trends can be found in Chapter 5 - Migration.

Figure 1.2: Natural change and net migration, 1970-71 to 2040-41

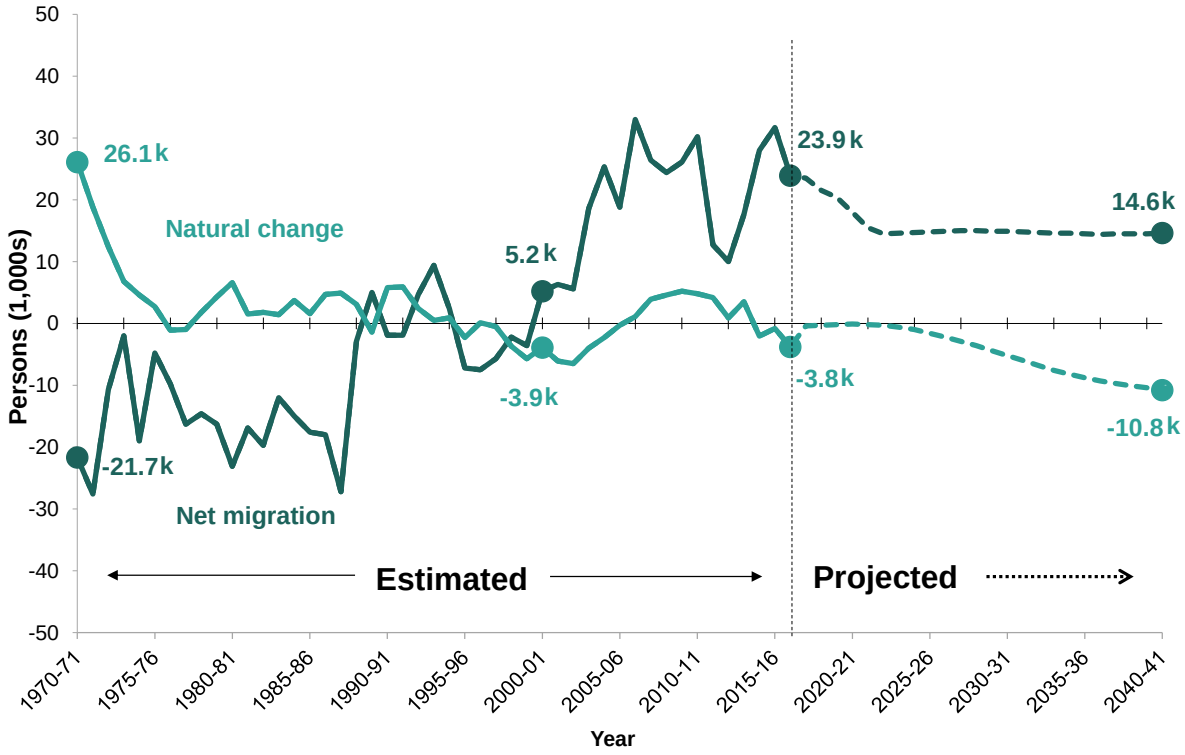
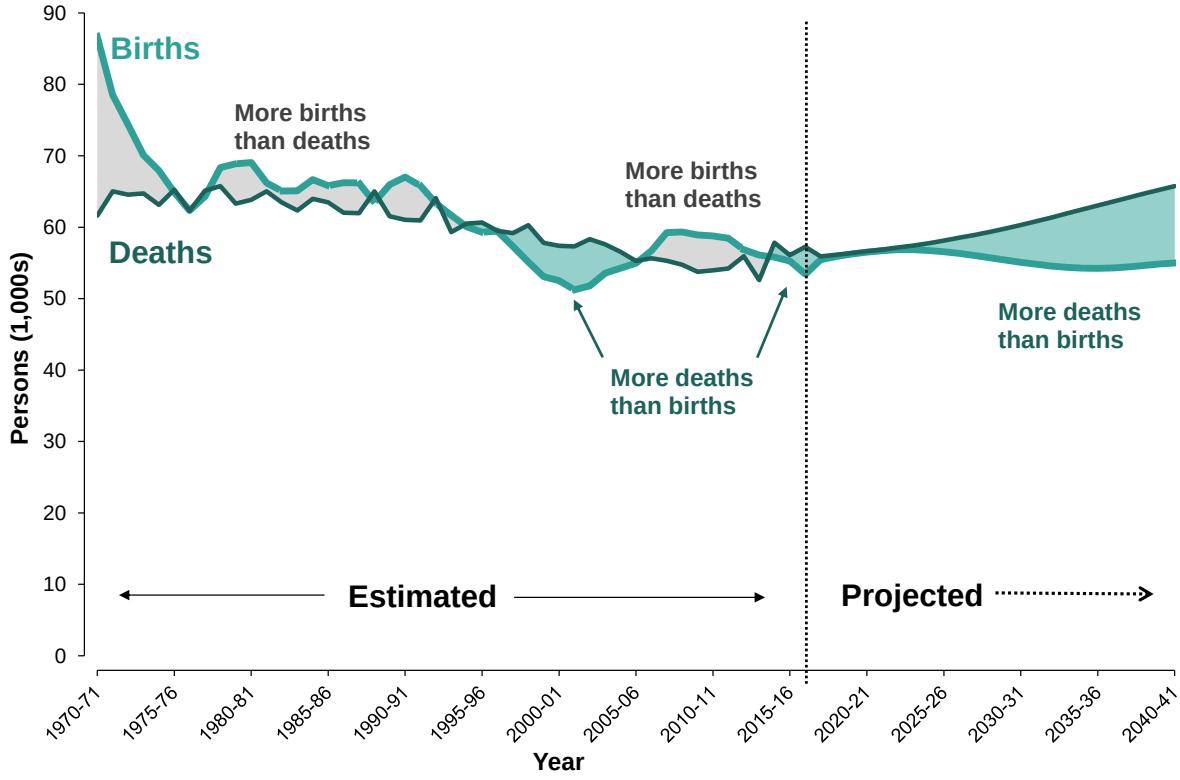


Figure 1.2 also shows that all of the projected increase in Scotland's population over the next 25 years (between 2016 and 2041) is due to net in-migration to Scotland. Over this period, 53% of net in-migration is projected to come from overseas, with 47% coming from the rest of the UK. Whilst net migration is projected to remain positive in each year up to 2041, natural change (births minus deaths) in contrast is

projected to be negative each year going forward. Figure 1.3 shows that in the year to 2041, there are projected to be over 10,000 more deaths than births that year.

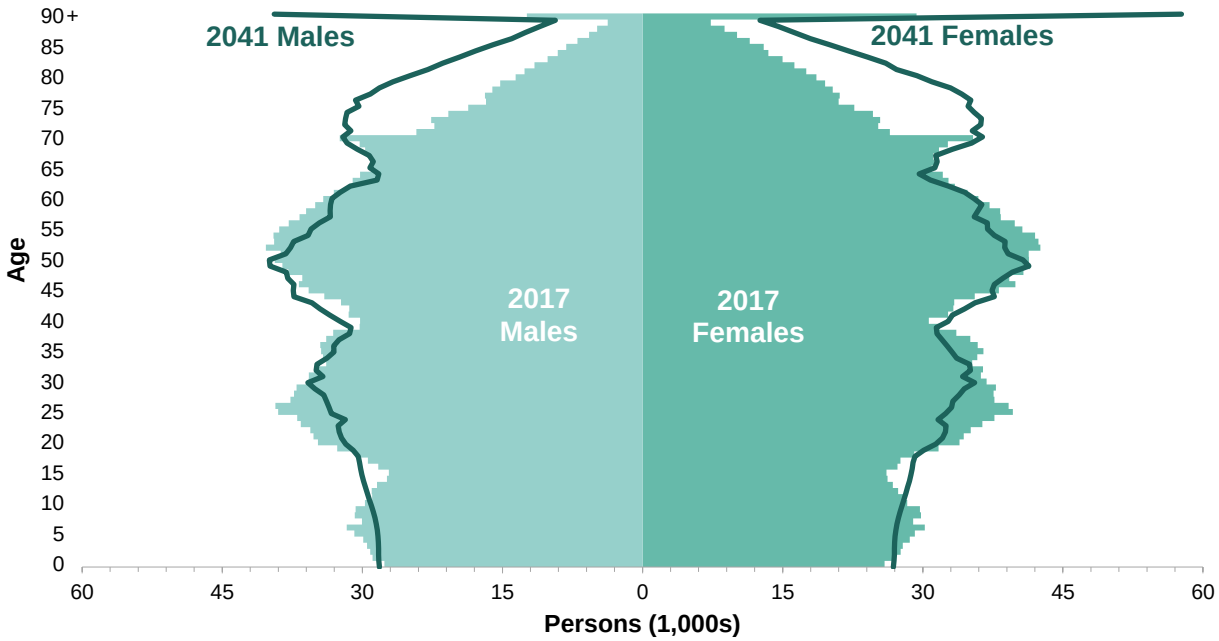
Figure 1.3: Births and deaths, actual and projected figures, 1970-71 to 2040-41



Scotland's population structure

As at mid-2017, the Scottish population had a broadly even make up of males (49%) and females (51%) and this is projected to remain constant in the upcoming years. In Figure 1.4, we can see the sex and age structure of the population. The green bars represent the actual figures from the latest mid-2017 estimates, whereas the dark green line represents the projected figures for mid-2041.

Figure 1.4: Population by age and sex, mid-2017 and mid-2041



Note: Every bar represents a single year of age, except the 90+ bar which represents people aged 90 and older (which explains the long tail).

For both the mid-2017 and the mid-2041 figures, represented in Figure 1.4, we see that the bars for younger ages are narrower than the bars for middle aged groups. This means there are fewer young people now than there were 25 years ago and there are projected to be even fewer young people in 2041 than there are now. As all people aged 90 and older are grouped together, the bars for the age group 90+ is very wide. Also for both the mid-2017 and the mid-2041 figures we see various bulges in the age bars. These are the post-war baby boomers, who are now around 70 years old, their children and their grandchildren. With every new generation the bulge becomes a little smaller since not every child of a baby boomer was born in the same year and had their potential children at the same time as other baby boom grandchildren. For the mid-2041 projections the (first) baby boom generation is hidden in the 90+ bar.

We can also see how the population of Scotland is ageing from Figure 1.4 with an increased gap between the light green bars representing mid-2017 and the dark green lines representing mid-2041 visible at ages above 70 years. Whilst Figure 1.4 shows a narrowing pyramid shape for mid-2017, the projected mid-2041 population is larger in the older age groups and only starts narrowing down around age 75, demonstrating that the current process of population ageing is projected to continue into the 2040s.

Table 1.1: Scotland's population (age) structure, mid-1981 to mid-2041

		0 to 15 years	16 to 64 years	65 years and over	Scotland's population
Estimated	1981	23%	63%	14%	5,180,200
	1986	21%	65%	15%	5,111,800
	1991	20%	65%	15%	5,083,300
	1996	20%	65%	15%	5,092,200
	2001	19%	65%	16%	5,064,200
	2006	18%	66%	16%	5,133,100
	2011	17%	66%	17%	5,299,900
	2017	17%	64%	19%	5,424,800
Projected	2021	17%	63%	20%	5,508,500
	2026	17%	62%	21%	5,578,800
	2031	16%	60%	23%	5,635,100
	2036	16%	59%	25%	5,670,900
	2041	16%	59%	25%	5,693,200

Note: Population figures rounded to nearest hundred.

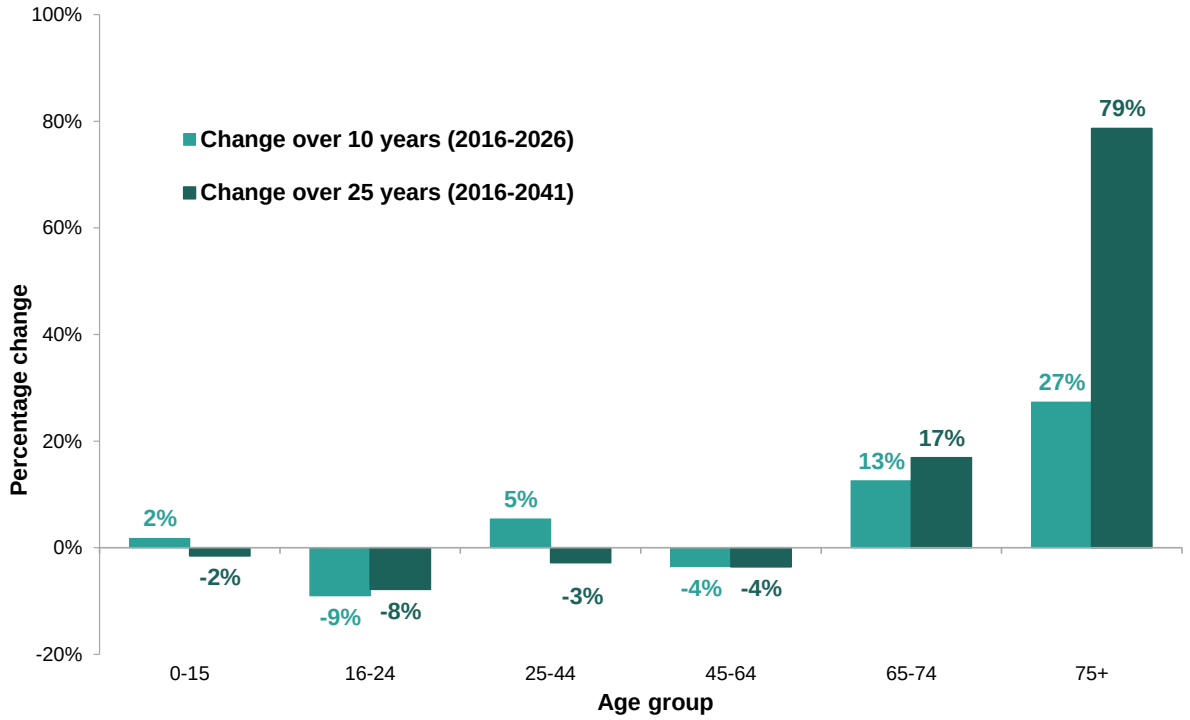
In Table 1.1, we show the ageing process through time, with the population divided into 0 to 15 year olds, 16 to 64 year olds, and 65 year olds and over. Whilst the total population of Scotland has grown and is projected to keep growing, the proportion of children has decreased steadily since 1981 (when it stood at 23% of the total population) and is projected to decline to 16% by 2041. The proportion of 16 to 64 year olds, which consists of those most likely to be working, has mostly seen an increase over the years between 1981 and 2010 but has, since 2011, started to decrease and is projected to decline to 59% of the total population in 2041. The picture for the 65 year olds and over is different; this age group has, through time, seen a steady growth and is projected to keep growing with one in four of the population projected to be in this age group by 2041.

Figure 1.5 shows how the population of different age groups are projected to change in future. The highest increase is projected in older age groups, with the number of people aged 75 and over projected to increase by 27% over the 10 year period between 2016 and 2026, and to increase by 79% over the 25 year period between 2016 and 2041. In contrast, the population of all younger age groups (below age 65) are projected to decline over the 25 year period to 2041.

People aged 75 and over are projected to be the fastest growing age group in Scotland.

Overall, the population aged 16 to 64 years (those most likely to be working) is projected to decrease from 3.49 million in 2017 to 3.46 million in 2026 (a decrease of 1%). It is then projected to decline further to 3.35 million by 2041, a total projected decrease of 4% over the 25 year period. If we look specifically at the working age population, which takes into account planned increases in state pension age, the population of working age people is projected to increase by 1% over the 25 period between 2016 and 2041 to reach 3.60 million by 2041. This changing age structure has potential implications for public policy. For example, the ageing population may place increased demand on public services such as the NHS, whereas reductions or slower growth in the working age population may impact tax revenues and economic growth.

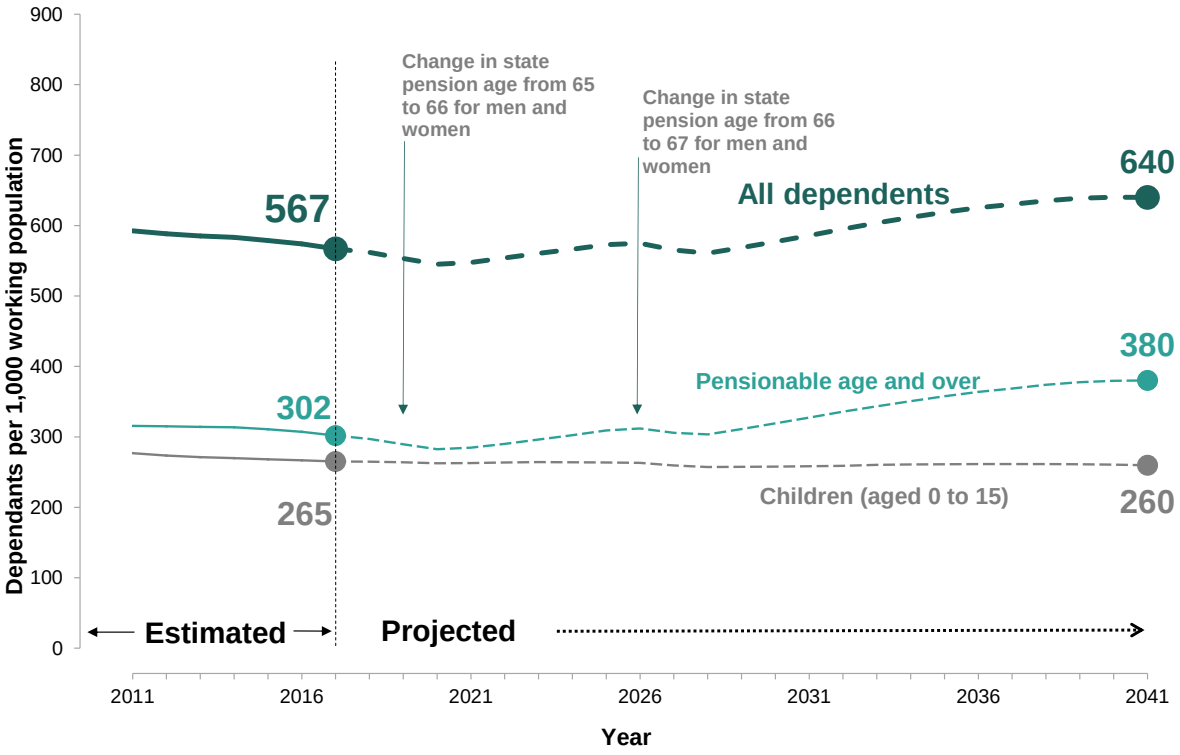
Figure 1.5: Projected percentage change in Scotland's population by age group, 2016-2026 and 2016-2041



Another way of measuring the population structure is by looking at the dependency ratio. We define the dependency ratio as the number of children aged 0 to 15 years plus the number of people of pension age and over (those who may be considered 'dependents') per 1,000 people of working age. When talking about dependency ratios an important caveat to make is that not all people in the 'dependent' category

are actually dependent on people of working age. Moreover, not everybody of working age is actually working, as some people may be studying, unemployed or economically inactive.

Figure 1.6: Dependency ratios, actual and projected figures, 2011 to 2041



The pension age for women used to be 60 and has gradually gone up to 63 years in 2017. Further increases are due to take place over the coming years, with it increasing to 67 years for both men and women between 2026 and 2028. In Figure 1.6, we can see the effect of these changes with a slight decline in the dependency ratio for people of pensionable age during the periods when the state pension age changes. Between 2017 and 2041, the number of people of pensionable age and over per 1,000 working age population is projected to increase from 302 to 380, reflecting the projected growth in the number of older people in Scotland. In contrast, the number of children per 1,000 working age population is projected to decrease from 265 to 260 over the same period. In Scotland overall, for every thousand people of working age there are projected to be 640 'dependents' in 2041, compared to 567 in 2017, an increase of 73 people per 1,000 working age population over this period.

Variant population projections

In addition to the principal population projection, additional variant population projections are also produced to show what might happen to the population under different plausible assumptions about future fertility, mortality and migration.

These help demonstrate the uncertainty around future demographic behaviour – we do not know for certain how births, deaths and migration will change in future and therefore the variant projections help illustrate the potential impact on Scotland's future population under different assumptions.

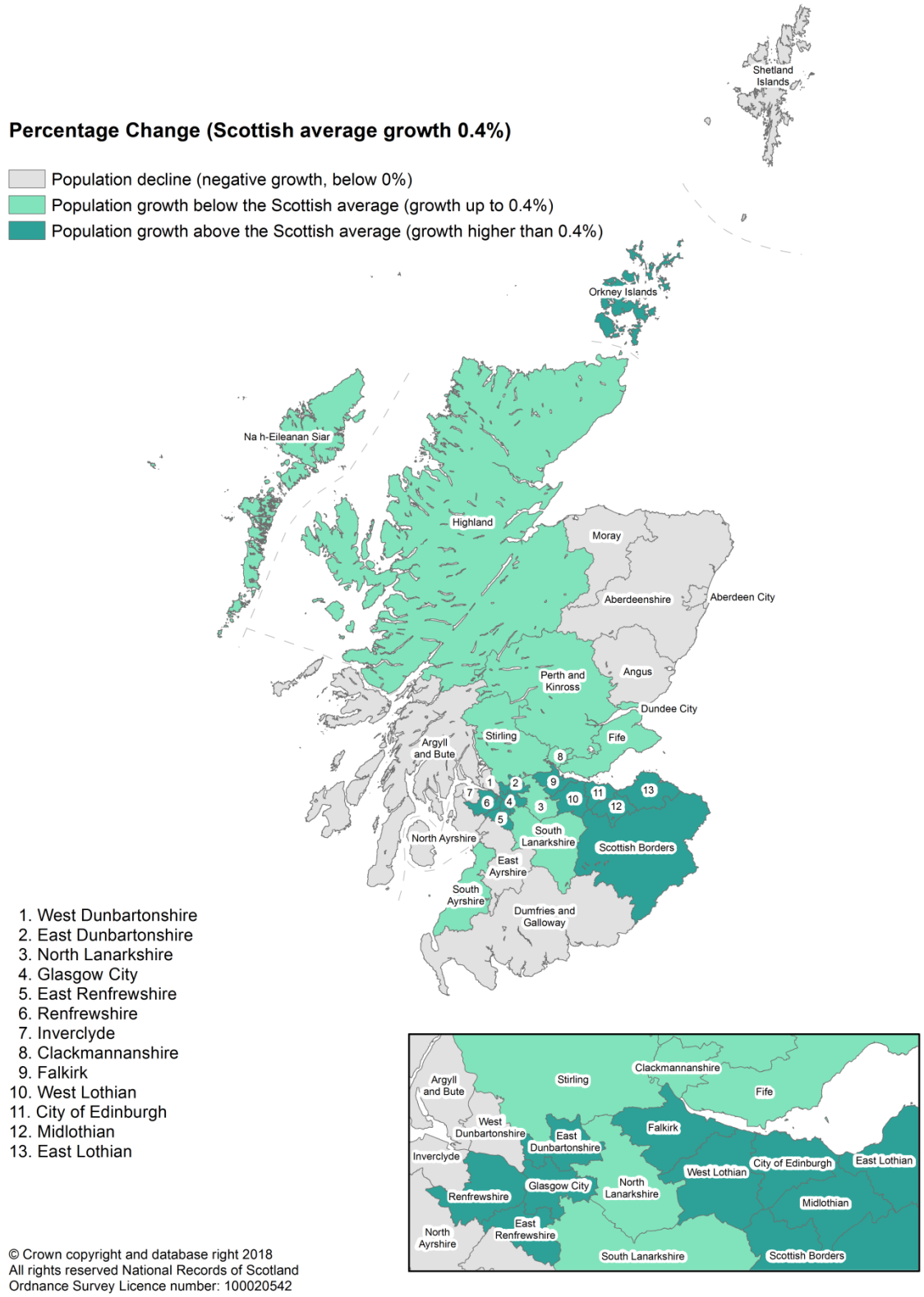
To explore the principal and variant population projections in more detail, please visit the NRS interactive visualisation.

Population change across Scotland's councils

Whilst Scotland's population has been growing and is projected to grow further, there are variations both within Scotland and across the UK. Overall, Scotland's population grew by 0.4% in the year to mid-2017. However, the level of population growth varies across Scotland, with some areas growing and others experiencing population decline. Over the year to mid-2017, the population increased in 21 council areas of Scotland while 11 council areas experienced a decrease in their population. In Figure 1.7, we see the changes between mid-2016 and mid-2017 for each council area. The areas coloured in green depict those growing in population - dark green for areas with population growth above the Scottish average and light green for areas with population growth below the Scottish average. The grey areas depict those with population decrease over the year to mid-2017.

As can be seen in Figure 1.7, the areas with relatively high population growth, above the Scottish average, are clustered in the central belt, whereas the areas with negative population growth are mainly on the west coast and in a pocket around Aberdeen. Over the year to mid-2017, the greatest increase in population was in Midlothian which grew by 1.7% while the greatest population decreases were in Aberdeen City, Inverclyde and Shetland Islands which all decreased by 0.5%. Information on population change for individual council areas over the latest year to mid-2017 can be found on the NRS website in Table A of the mid-2017 population estimates for Scotland.

Figure 1.7: Population change by council area, mid-2016 to mid-2017



Migration has played a key role in growing the population of the majority of council areas. Over the latest year to mid-2017, all except four councils experienced positive net migration, with more people arriving than leaving. Similar to the national picture, most councils experienced negative natural change (more deaths than births) over the past year, although seven councils did have positive natural change (more births than deaths).

How is the population of your local area changing?

Find out more using NRS' interactive visualisations:

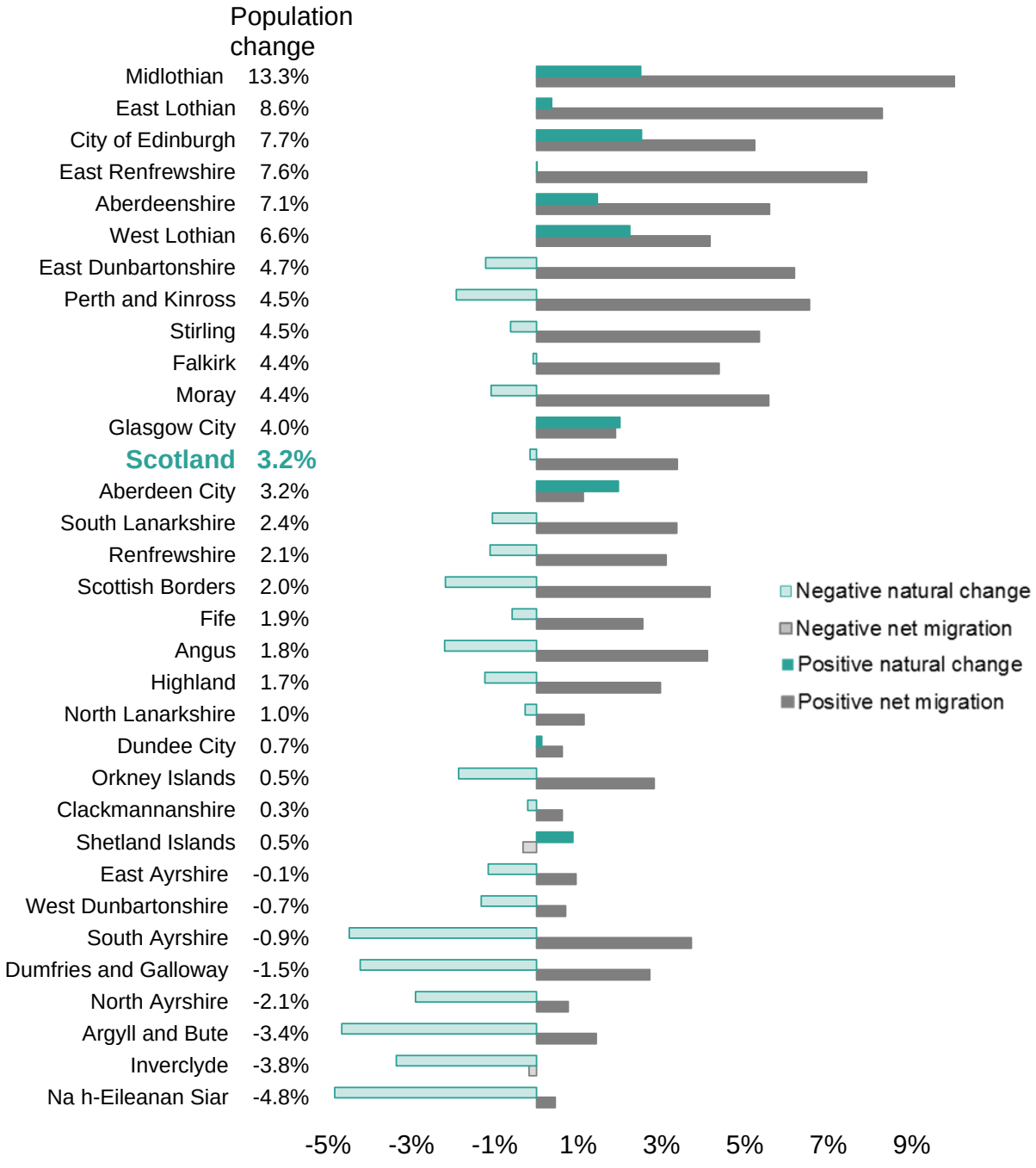
Population estimates – to understand how your local area has changed over the years up to 2017.

Population projections – to understand how your local area is projected to change in future.

The areas with the largest proportion of growth due to positive natural change (more births than deaths) over the year to mid-2017 were Midlothian, West Lothian and City of Edinburgh. In addition, Midlothian and City of Edinburgh had two of the largest rates of positive net migration (more people arriving than leaving), resulting in the largest proportion of population growth over the year in these two councils. The areas with negative net migration (more people leaving than arriving) were Aberdeen City, Aberdeenshire, Shetland Islands, and West Dunbartonshire. From these areas, West Dunbartonshire also had negative natural change (more deaths than births) over the year to mid-2017.

When looking to the future, in Figure 1.8 we see that the differences between councils is projected to keep growing. The populations of 24 of the 32 council areas in Scotland are projected to rise over the 10 year period between 2016 and 2026. The areas which are projected to have the biggest population increases are Midlothian (+13.3%), East Lothian (+8.6%), City of Edinburgh (+7.7%) and East Renfrewshire (+7.6%). Similar to the latest figures for mid-2017, we see that the areas projected to decrease in population are concentrated in the west of Scotland, with depopulation projected in Inverclyde, Argyll & Bute, the Ayrshire councils (North, East and South Ayrshire), Dumfries and Galloway, and West Dunbartonshire over the next 10 years. A total of eight councils across Scotland are projected to experience population decline over the 10 years to 2026, with Na h-Eileanan Siar projected to experience the largest percentage decline.

Figure 1.8: Projected percentage change in population by council area, 2016 to 2026



Note: Projected natural change and net migration are not the only components of change. Other changes that are not included in this figure include changes in armed forces and prisoner populations and changes due to constraining to the National Population Projections for Scotland.

Overall, less than a third of Scotland's councils are projected to have positive natural change (more births than deaths) over the next 10 years to 2026. Two thirds of

Scotland's councils (22 councils) are projected to experience negative natural change, meaning more deaths than births over the years to 2026. The positive natural change we see is again in the Lothians. Additionally, we see positive natural change in the large cities of Glasgow, Aberdeen and Dundee.

Migration is driving the projected population increase in most areas. All councils except Inverclyde and Shetland Islands, which are projected to have a small decrease due to negative net migration of 0.2% and 0.3% respectively, are projected to experience population increase due to positive net migration in the years until 2026. This includes migration to and from overseas, the rest of the UK and within Scotland. More details on migration to and from the council areas is available in Chapter 5 - Migration.

The age structure of councils varies greatly

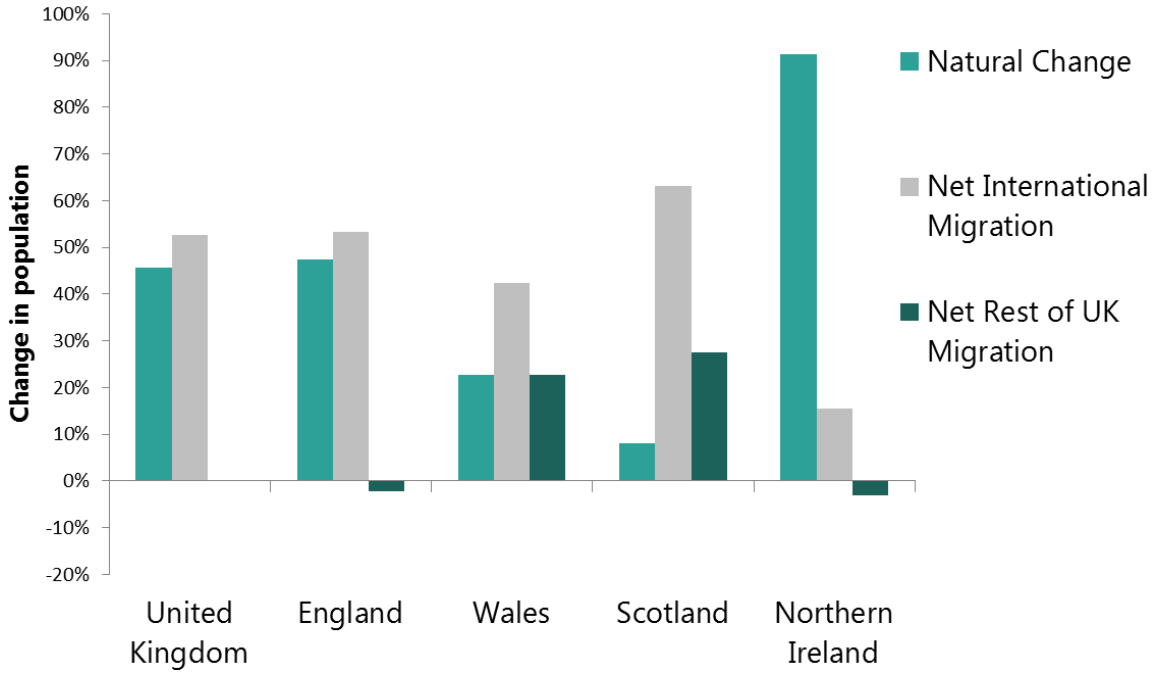
Did you know: Most of Scotland's councils with a large natural increase (more births than deaths) also have a relatively large proportion of young people. Furthermore, we find in the large cities the highest proportions of people aged 16 to 64 years, but relatively smaller proportions of children. Although a large proportion of people within childbearing ages with a relatively low proportion of children seems counter-intuitive, it could be explained by the fact that all large cities in Scotland are all university cities and students tend to have a lower fertility rate.

More information on the age structure of Scotland's councils can be found in Figure 10 of the mid-2017 population estimates for Scotland.

Population change across the UK

Similar to the regional differences we see across Scotland, there are also differences across the different constituent countries of the UK. The populations in each constituent country of the UK have increased and are projected to keep increasing. However, we can see in Figure 1.9 that the main reason for the increase over the past 10 years has varied. For example, in Northern Ireland the main reason for its population increase was predominantly due to positive natural change, with migration from overseas contributing much less to its population growth and migration from the rest of the UK being negative. Also for England, we see negative net migration from the rest of the UK, however positive natural change and international migration have almost evenly contributed to the population increase in England over the past decade. For Wales and Scotland, we can see that international migration is the main reason for population growth over the 10 years between mid-2007 and mid-2017. For both these countries, between 20 to 30 per cent of the population growth was due to positive net migration from the rest of the UK, whereas especially for Scotland the proportion of population growth attributed to natural change is relatively small.

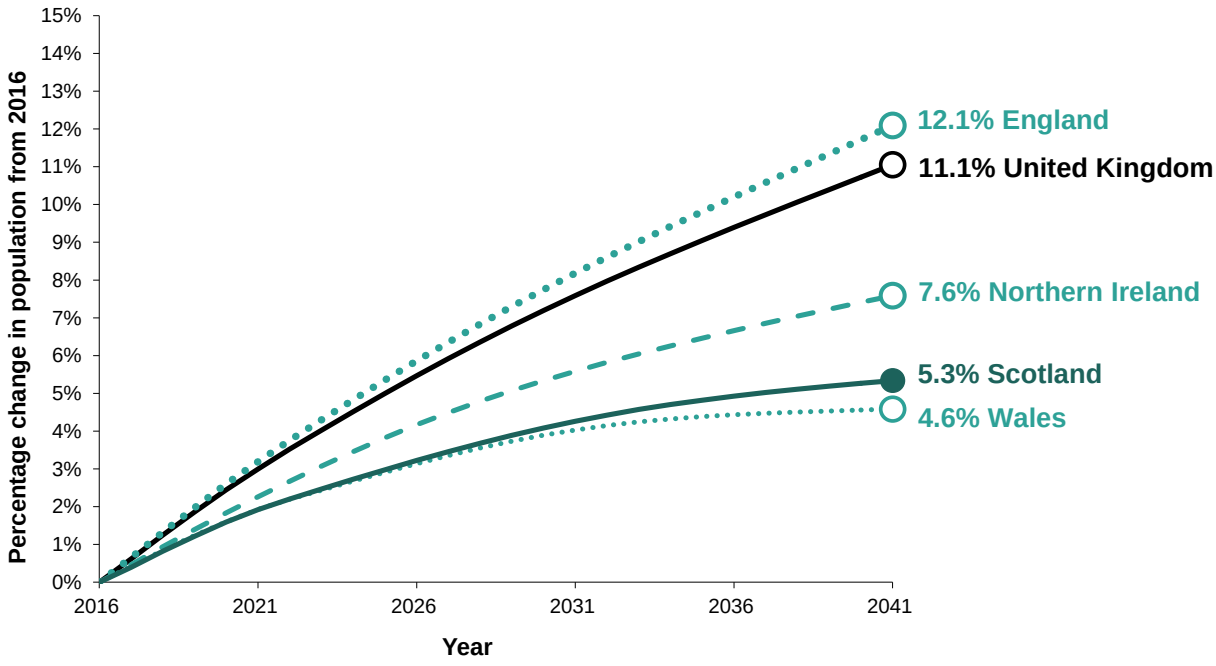
Figure 1.9: Components of population change as proportion of total change in population between mid-2007 and mid-2017



Scotland is projected to have the second lowest projected increase in its population across all UK countries.

In Figure 1.10, we see the population projections for the UK countries. The latest projections show that the populations of England, Northern Ireland and Wales are, like Scotland, projected to increase. However, overall Scotland's population is projected to grow slower than the UK average, with Scotland projected to have the second lowest projected increase in its population across all UK countries, growing by 5.3% over the next 25 years to 2041. The UK as a whole is projected to increase in population by 11.1%, with England's population projected to increase by 12.1%, Northern Ireland's population by 7.6% and Wales by 4.6% between 2016 and 2041.

Figure 1.10: Projected population change for the United Kingdom and constituent countries, 2016 to 2041



Births

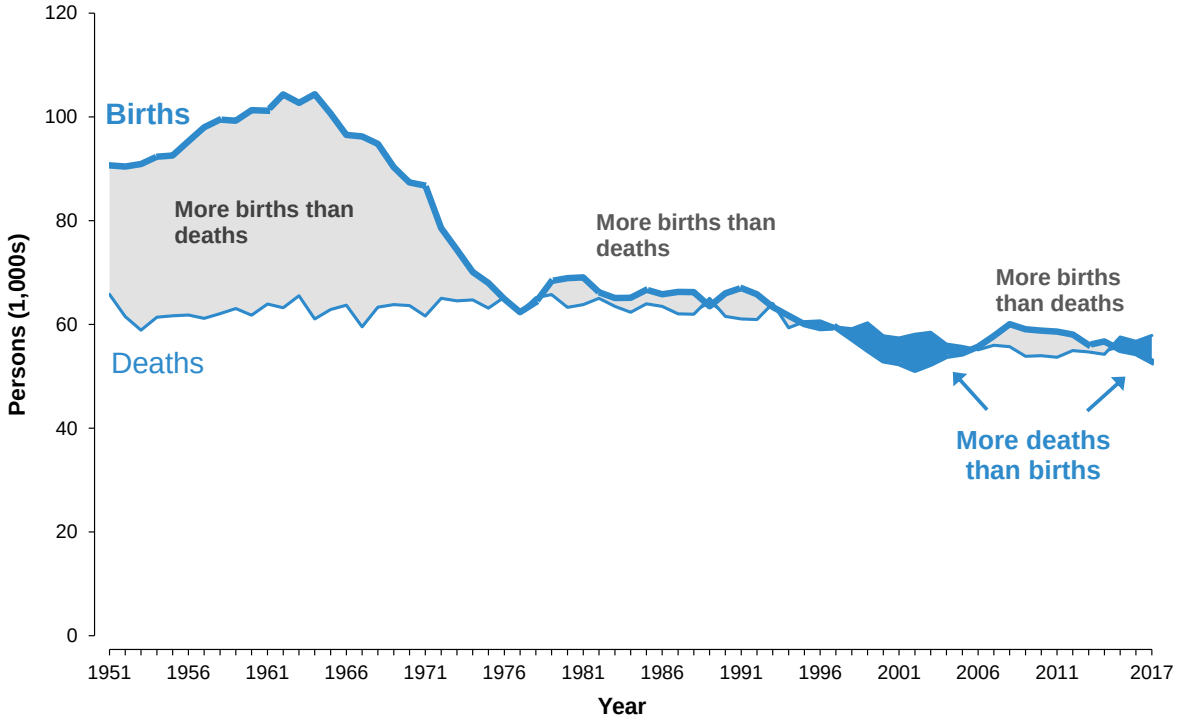
"52,861 births were registered in Scotland in 2017, the lowest annual total since 2003."

In 2017, 52,861 births were registered in Scotland, 1,627 (3.0%) fewer than in 2016. This is the lowest annual total since 2003. In the last decade there was a peak of 60,041 births in 2008 followed by a mainly downward trend to the 2017 level. The total in 2017 was 7,180 (12.0%) lower than the 2008 peak, and well below the peak of over 100,000 per year in the early 1960s, and the level of around 65,000 to 70,000 per year between the mid-1970s and the early 1990s, as Figure 2.1 shows.

In 2017, there were **52,861** births registered in Scotland, equivalent to **1%** of Scotland's population. There were **3% fewer** births than in 2016.

In the 1950s, 1960s and the first half of the 1970s there were considerably more births each year than deaths. This had been the case every year since records began (with the introduction of civil registration in 1855). 1976 was the first year with more deaths than births. The following 15 or so years mostly had more births than deaths, followed by a period from 1995 to 2005 with more deaths than births. Since 2006 there had again been more births than deaths until 2015 which had around 2,500 more deaths than births. This continued in 2016 and 2017, with the gap widening to 5,022 in 2017.

Figure 2.1: Births and deaths, Scotland, 1951-2017



The proportion of births to unmarried parents (including births registered solely in the mother's name) was 51.1% in 2017 compared to 49.1% in 2007 (the last year where there were more births to married parents than unmarried parents) and 37.7% in 1997. However, the proportion of births registered solely in the mother's name – generally around 6% to 7% in the 1980s and 1990s – has generally fallen in more recent years and was 4.4% in 2017, suggesting that the increase in births to unmarried parents has been in babies born to unmarried partners who are in a relationship.

Fertility Rates

Crude birth rate

The simplest fertility rate is the crude birth rate, which is defined as the number of live births per 1,000 total population. Appendix 1, Table 1 shows that in 2017, the crude birth rate for Scotland stood at 9.7 compared to an average of 17.9 per year in the late 1960s. Appendix 1, Table 2 and Appendix 1, Table 3 show crude birth rates for administrative areas in Scotland and selected European countries. Because it takes no account of the age/sex structure of the population, the crude birth rate has only limited value (for example giving rough comparisons between areas with broadly similar age/sex structures).

Standardised birth rate

Appendix 1, Table 2 also gives standardised birth rates for the administrative areas of Scotland; these adjusted birth rates take account of the population structures in the different areas. The overall rate for Scotland, 9.7 births per 1,000 population, can be compared with a low of 7.2 in City of Edinburgh, and a high of 12.9 in Midlothian.

Fertility rates – measures of births or expected births within defined populations

Crude birth rate - number of live births per 1,000 total population

Standardised birth rate - these adjusted birth rates take account of the population structures in different areas

General Fertility Rate (GFR) - number of live births per 1,000 female population of childbearing age (aged 15 to 44)

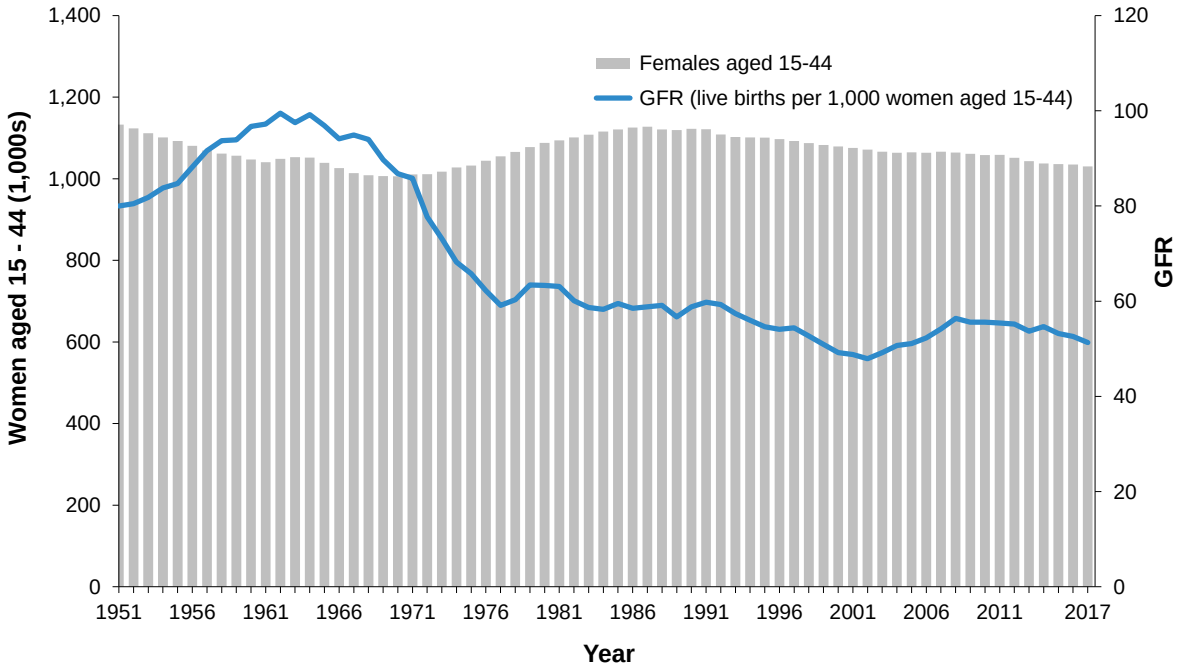
Age Specific Fertility Rates (ASFRs) - number of live births per 1,000 women, by age of mother.

Total Fertility Rate (TFR) - average number of children that a group of females would expect to have if they experienced the observed ASFRs of the current year in each of their childbearing years.

General Fertility Rate (GFR)

Another approach is to consider the General Fertility Rate (GFR) which is based on the numbers of females of childbearing age. Figure 2.2 shows the general fertility rate (births per 1,000 females aged 15 to 44), along with the number of females aged 15 to 44. During the 'baby boom' of the 1960s, the GFR reached 99.5 (in 1962). It then fell sharply to around 60 in the late 1970s and stabilised at this level during the 1980s before declining further during the 1990s, eventually dipping below 50 at the start of the 21st century. It then rose slightly to 56.4 in 2008, before decreasing again to stand at 51.3 for 2017. Interestingly, the female population aged 15 to 44 was relatively low during the baby boom of the 1960s. Moreover, in the 1980s the relatively large number of females born in the 1950s and 1960s were passing through what were their peak childbearing years. However, fertility rates at those ages were falling during that period, resulting in a levelling off of the number of births rather than the increase that may have been expected.

Figure 2.2: Estimated female population aged 15 to 44 and general fertility rate (GFR), Scotland, 1951-2017

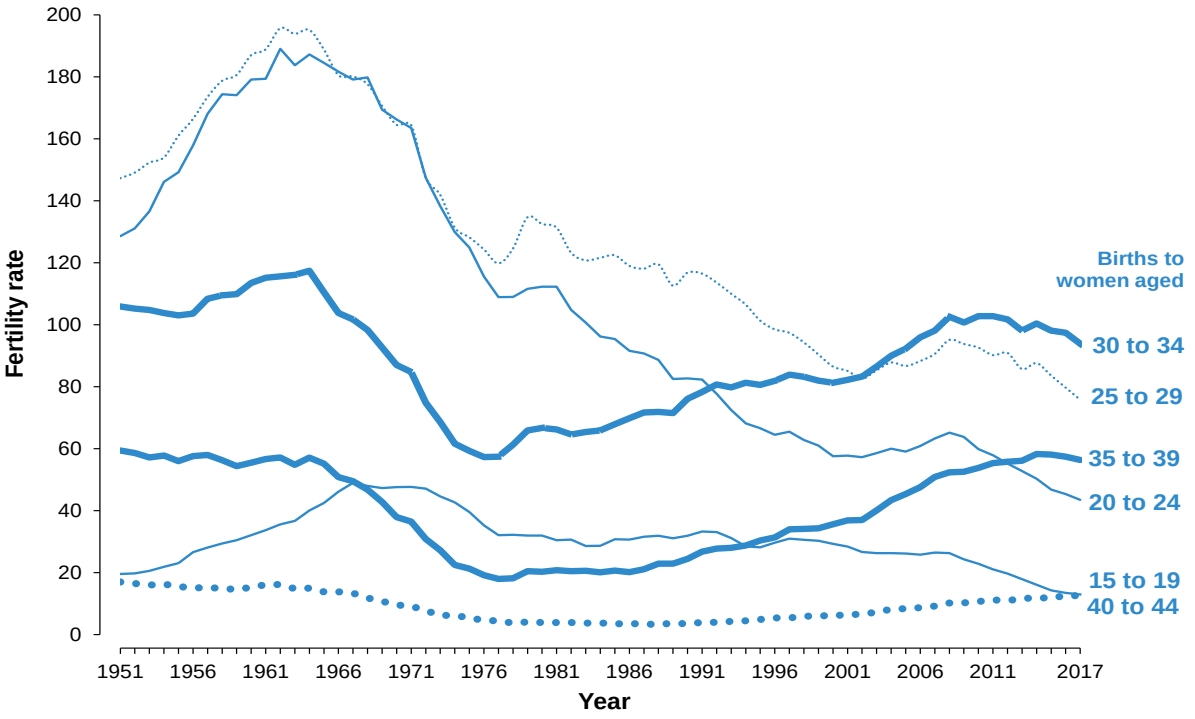


Age Specific Fertility Rates (ASFRs)

A more detailed picture is given by the Age Specific Fertility Rates (ASFRs) by mother's age, in five-year age groups, in Figure 2.3. This shows many significant age-

related features of the pattern of childbearing over the last sixty years. As well as having fewer babies, females are also having them later in life.

Figure 2.3: Live births per 1,000 women by age of mother, Scotland, 1951-2017



Looking back over the last 65 years:

- The 'baby boom' of the 1960s was mostly due to increased birth rates of females in their twenties.
- Since the early 1960s, females in their twenties have experienced a dramatic fall in fertility. For females aged 20 to 24 the fertility rate has fallen by around three-quarters, and for those aged 25 to 29 it has fallen by over half.
- The rate for 15 to 19 year olds fell by around one-third during the 1970s and remained around 30 births per 1,000 females for the following 20 years, before falling by more than half since the turn of the century, to 13 births per 1,000 females.
- Fertility rates for females aged 30 and above have gradually increased over the last 40 years. The rate for 30 to 34 year olds overtook that of 25 to 29 year olds in 2002, rising to a peak of 103 births per 1,000 females in 2010 and 2011. It has generally fallen since then and now stands at 94. Similarly, the rate for females aged 35 to 39 (56 births per 1,000 females) has nearly trebled since the mid-1980s and since 2012 has been higher than that for those aged 20 to 24.

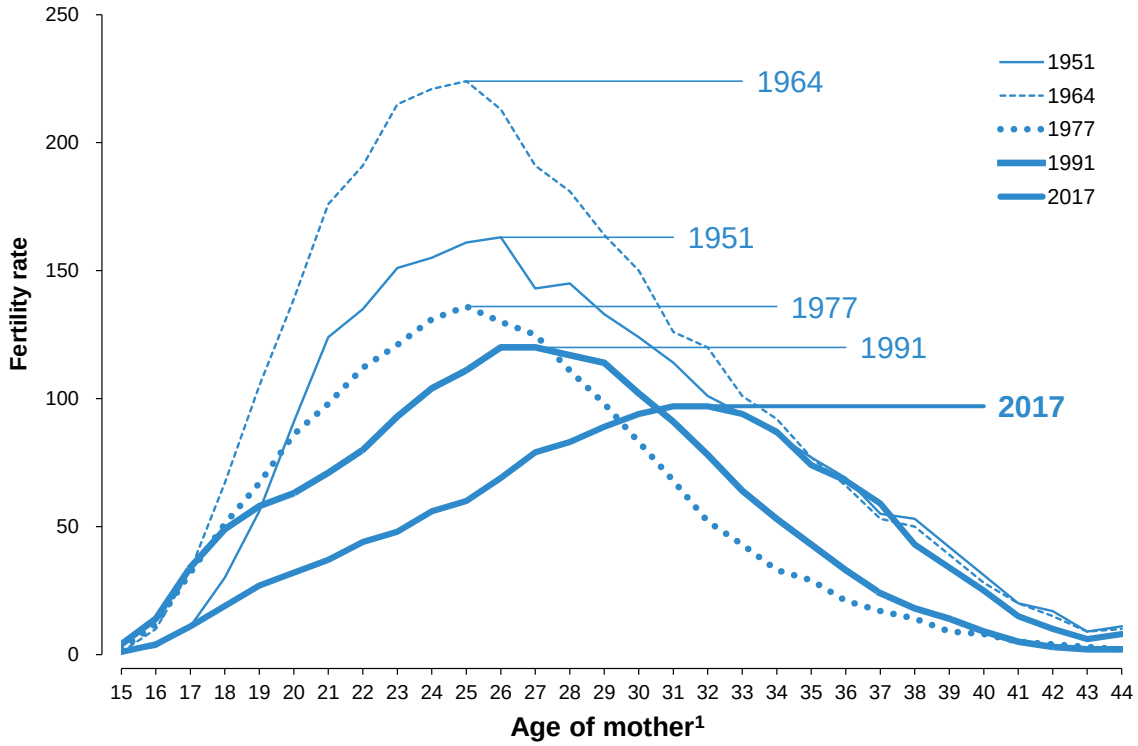
- The 15 to 19 and 20 to 24 age-groups account for most of the reductions in the numbers of births between 2008 and 2017.

Females are tending to have children at older ages

Since the mid-1970s, there has been a trend towards having children at older ages. The percentage of births to mothers aged under 20 fell from an average of about 11% between 1976 and 1980 to less than 4% in 2017. Mothers aged 20 to 24 accounted for roughly a third of all births in 1976 to 1980 and 15% in 2017. The percentage of births to mothers aged 25 to 29 has also fallen, from around 35% in 1976 to 1980, to 28% in 2017. As a result, females aged over 30 accounted for over half of all births in 2017; 32% were to mothers aged 30 to 34, 18% were to 35 to 39 year olds and 4% were to females aged 40 and over.

Figure 2.4 further illustrates the ageing pattern of fertility by showing detailed ASFRs for selected years: 1951, 1964 (peak number of births), 1977 (end of steep decline), 1991 recent peak) and 2017. Though the levels differed considerably, the age patterns of fertility for 1951, 1964 and 1977 were roughly the same. However, the age distributions for 1991 onwards show distinctly older peaks and that for 2017 reveals a further reduction in fertility of females in their twenties, mirrored by an increase for females in their thirties, compared with 1977 and 1991.

Figure 2.4: Live births per 1,000 women by age, selected years



Footnote: 1) The rate for age 15 includes births at younger ages and for age 44 includes births at older ages.

The trend towards later childbearing is underlined by changes in the average age of all females giving birth. This was 30.5 in 2017, compared to 27.4 in 1991, 26.1 in 1977 and 27.4 in 1964. Similarly, the average age of fathers (excluding births registered in the mother's name only, where the father's details were not provided) was 33.0 in 2017 compared to 30.0 in 1991 and 28.6 in 1977.

Total Fertility Rate

The Total Fertility Rate (TFR) is a commonly used summary measure of fertility levels calculated by summing the age specific rates for a single year. It gives the average number of children per woman that a group of females would expect to have if they experienced the observed ASFRs in each of their childbearing years.

The TFR for Scotland since 1951 is plotted in Figure 2.5. Not

In 2017, the TFR for Scotland was **1.47**.

For a population to replace itself, the TFR needs to be around **2.1**.

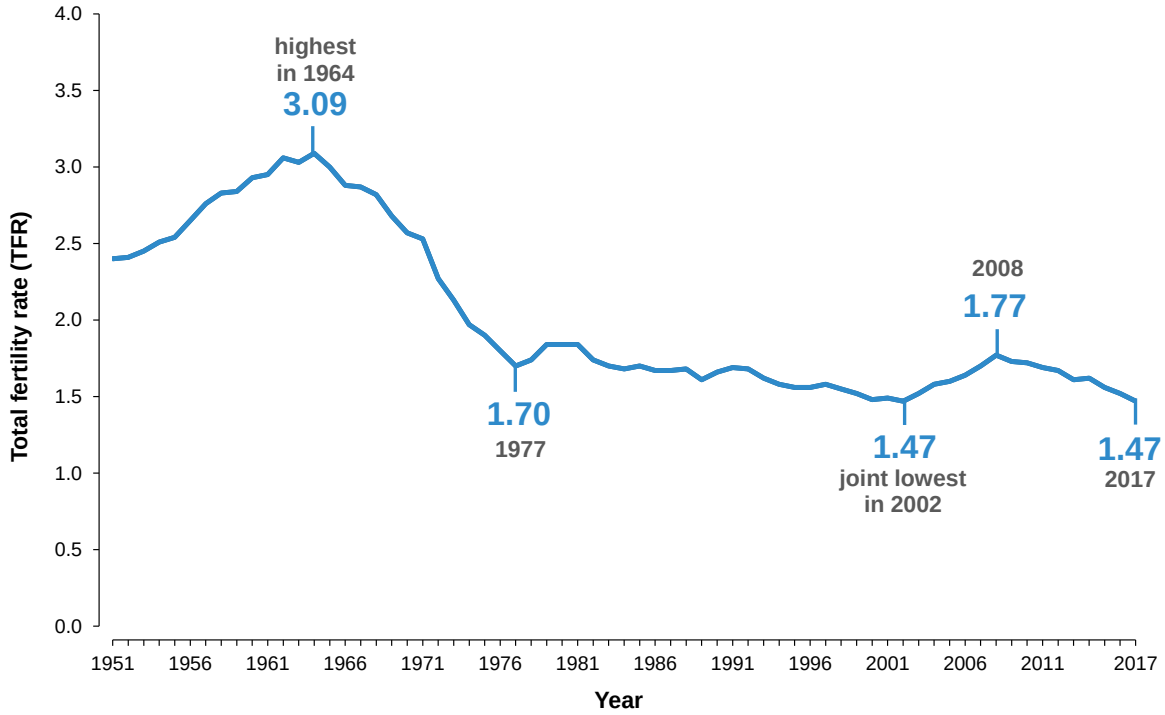
The last time Scotland met the replacement TFR was in **1973**, with a TFR of 2.13.

surprisingly, it follows the same general pattern as the GFR described above. It rose to 3.09 in 1964 before dropping sharply to 1.70 in 1977. Since then, with a few minor fluctuations, it fell more slowly to the 2002 rate of 1.47 before increasing to 1.77 in 2008 – its highest level for 26 years. Since then it has generally declined, reaching 1.47 in 2017.

Total Fertility Rate (TFR) methodology

Though widely used, in part because it is relatively easy to calculate, the TFR has serious deficiencies as it is based on only one year's observations. For example, when females are delaying childbearing, as it appears that they have been in Scotland (given the trend towards later childbearing), the TFR is likely to underestimate the number of children females will eventually have.

Figure 2.5: Total fertility rate, Scotland, 1951-2017

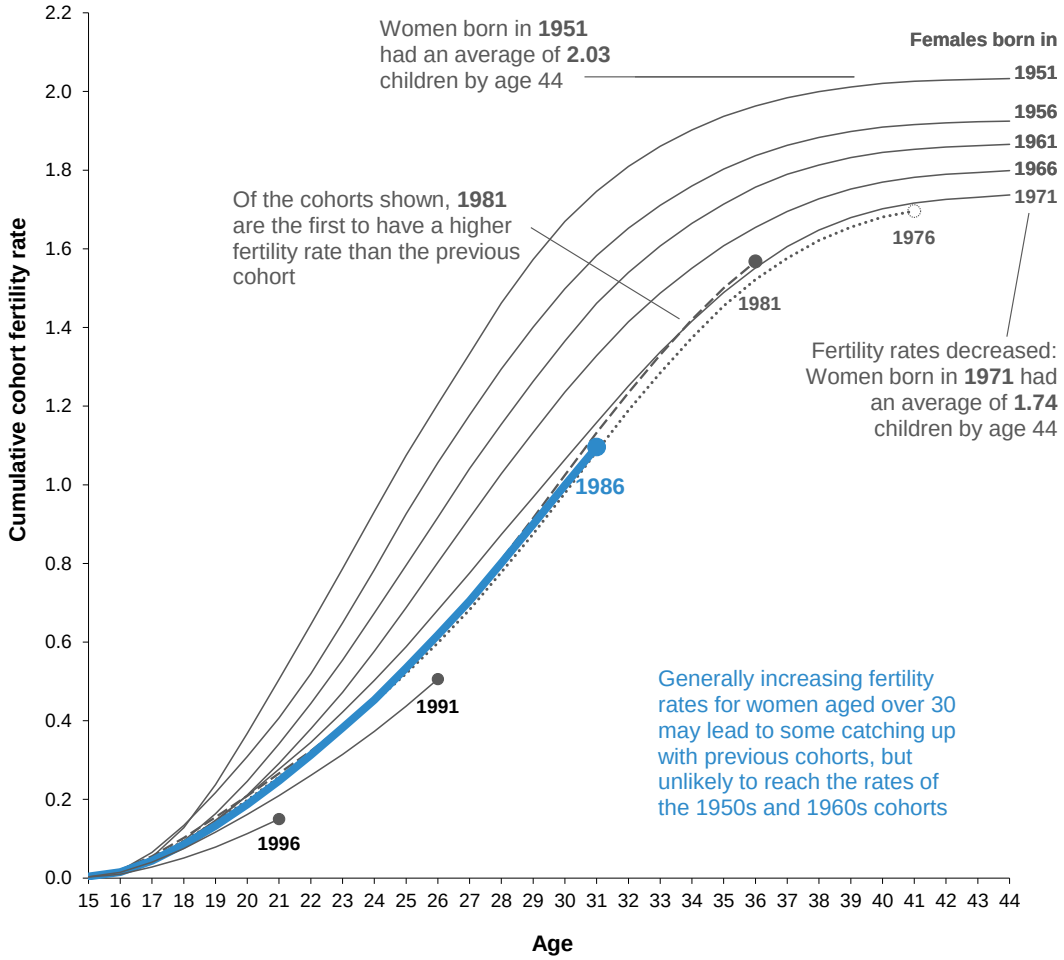


Average Completed Family Size

A more satisfactory measure is average completed family size. Figure 2.6 shows the completed family size (or cumulative cohort fertility) by age for females born in selected years. Those born in 1951 had attained an average completed family size of

2.03 by the time they reached age 44, whereas for those born in 1956 and 1961 the figures were 1.93 and 1.87 respectively. The figure also permits the comparison of family size at selected ages for the various cohorts as they pass through the childbearing ages. Of crucial importance is the extent to which the later cohorts are falling behind in family building. For example, by age 30 the cumulative childbearing of females born in 1976 was about 0.5 lower than that of the 1956 cohort. Of the cohorts shown, the 1981 cohort is the first to show a higher fertility rate than the previous cohort. However, at ages 25 and 26 the fertility rate of the 1986 cohort was fractionally higher than that of the 1981 cohort, although it has fallen back in later years. The 1991 and 1996 cohorts show considerably lower rates than the 1981 and 1986 cohorts. Whilst the generally increasing fertility rates of those aged over 30 may lead to further catching-up, it is unlikely that this will increase the average completed family size to the levels attained as recently as the cohorts of females born in the 1960s.

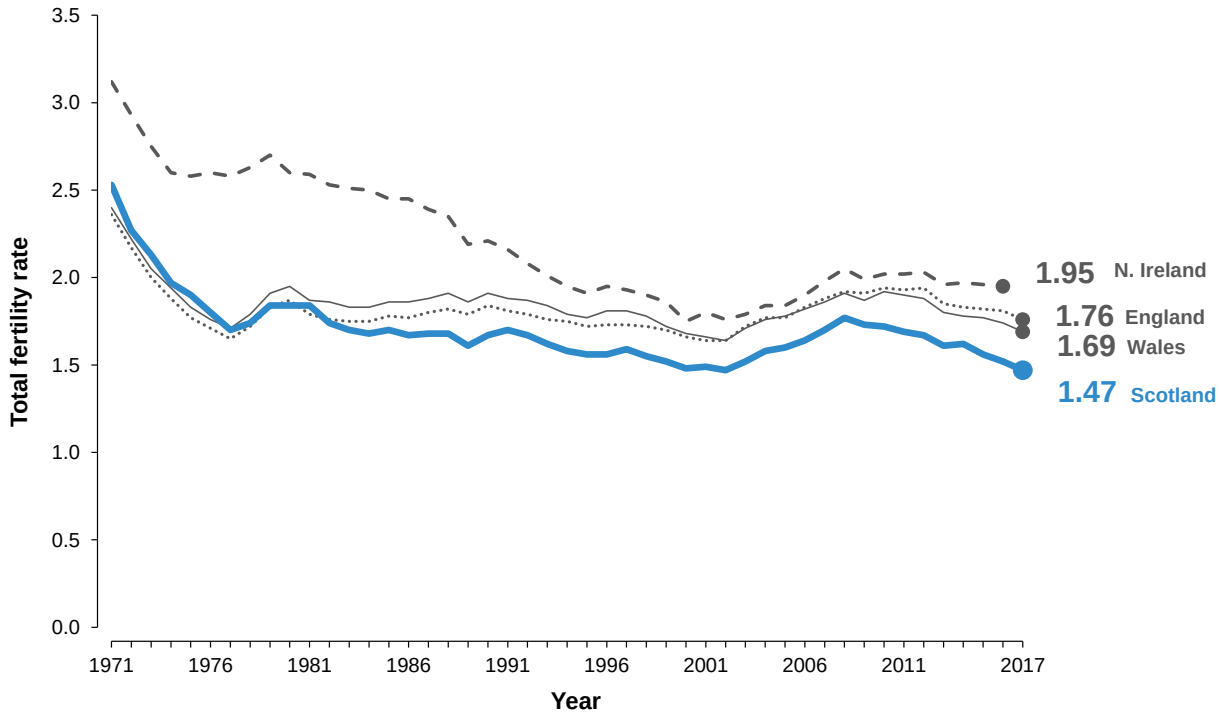
Figure 2.6: Average Completed Family Size (Cumulative cohort fertility rate) for selected birth cohorts, Scotland



Comparison with other UK countries

Since the early 1980s, Scotland's fertility has been lower than fertility in the other parts of the United Kingdom (UK). Figure 2.7 compares the TFRs for England, Wales and Northern Ireland since 1971 with those for Scotland. Until the late 1970s, Scotland's TFR was slightly higher than that for England and Wales. However, since the early 1980s, Scotland's TFR has dropped steadily below the levels for England and Wales. In 1971, the TFR for Northern Ireland was markedly higher than for the other three countries but since then the differential has been significantly reduced. The rise in fertility levels in Scotland between 2002 and 2008 was broadly paralleled elsewhere in the UK. Fertility rates for all UK countries have fallen since 2008 with Scotland falling at a faster rate than the other countries.

Figure 2.7: Total fertility rates, UK countries, 1971-2017



Note: The label for Northern Ireland quotes the 2016 total fertility rate because at the time of writing the 2017 figures were not available.

Country of birth of parents

In 2017, 73% of mothers had been born in Scotland, with a further 9% born elsewhere in the UK. Nine per cent of mothers had been born elsewhere in the European Union (EU), including 5% from the countries which joined the EU in 2004 (the largest number were to mothers born in Poland). Commonwealth countries were the birthplace of 5% of mothers, including 2% from the Indian sub-continent. In the cases where the father's country of birth was known, 83% had been born in the UK, including 73% who were born in Scotland.

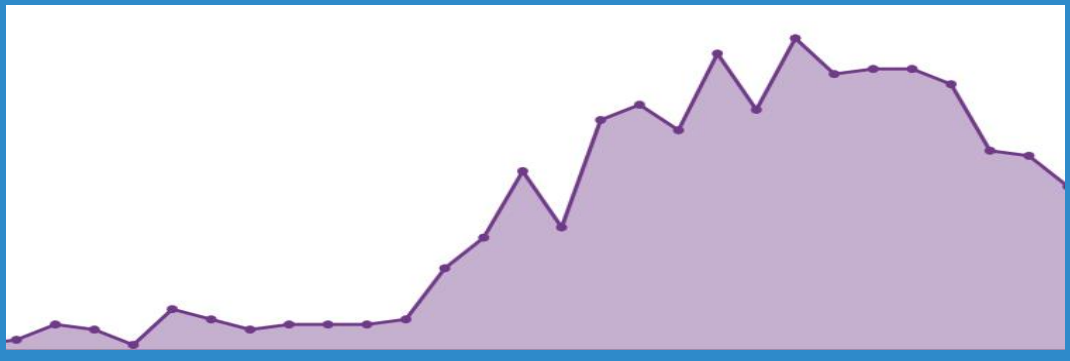
Country of birth of mothers

73% born in Scotland.
9% born in the rest of the UK
9% born in the rest of the EU
9% born outside the EU

Considering only births for which both the mother's and the father's countries of birth were known, in 17% of births in 2017 neither parent was born in Scotland, including 12% of births where neither parent was born in the UK. These figures compare to 12% and 7% respectively in 2007.

More detailed information about Scotland's births can be found in the Vital Events – Births section or in the Births section of the Vital Events Reference Tables of the National Records of Scotland (NRS) website.

National Records of Scotland (NRS) releases an annual **Babies' First Names** publication. On the NRS website, an interactive visualisation allows you to enter a name and observe how it's popularity has changed over the years.



Deaths

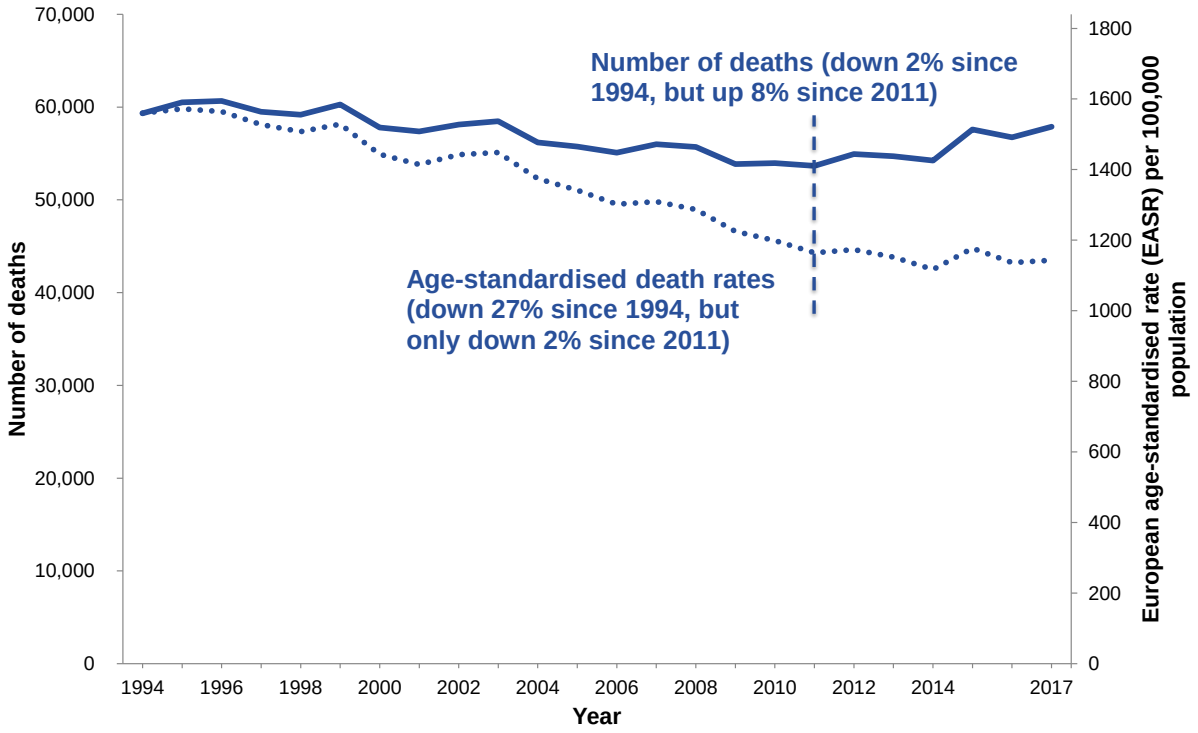
"There were 57,883 deaths registered in 2017, 2% more than in 2016."

Mortality trend

In 2017, 57,883 deaths were registered in Scotland, representing 10.7 deaths per 1,000 population. This was 1,155 more than the number in 2016 (a 2.0% increase). The annual number of deaths remained relatively stable between the 1950s and the early 1990s at around 60,000 to 65,000 a year. It then declined to a level of 53,661 in 2011 which was the lowest total recorded since the introduction of civil registration in 1855. Since then the number of deaths has risen, with the 2017 figure being the highest since 2003.

Although the number of deaths is at its highest level since 2003, the age-standardised death rate has decreased since then, suggesting that part of the increase in the number of deaths is due to the ageing population.

Figure 3.1: Deaths in Scotland, 1994-2017, numbers and age-standardised death rates



To gain a clearer understanding of the trend, it is important to take account of the changes in population over that time. As our population has been growing and ageing in recent years, this will have an effect on the number of deaths. Figure 3.1

What are age-standardised death rates?

Age-standardised death rates are calculated using the 2013 European Standard Population to adjust for changes in the age structure of the population and give a more accurate picture of the mortality trend. For more information see our web section.

shows that age-standardised death rates have decreased at a greater rate than the number of deaths over time, suggesting that part of the recent increase in the number of deaths may be due to the ageing population. However, there has been no improvement in age-standardised death rates in the last three years, suggesting that we may be reaching a turning point, or a plateau, in the downward trend.

Leading causes of death

The leading cause of death in 2017 was ischaemic heart disease, which accounted for 11.6% of all deaths. This was closely followed by dementia and Alzheimer's disease which accounted for 11.3% of all deaths. The leading cause differed by sex, with men more likely to die from ischaemic heart disease (14.3% of all deaths) and women more likely to die from dementia and Alzheimer's disease (14.8% of all deaths).

Leading causes of death 2000

1 – Ischaemic heart disease : 12,412 (21.5%)
2 – Cerebrovascular disease : 6,803 (11.8%)
3 – Malignant neoplasm of trachea, bronchus and lung : 3,948 (6.8%)
4 – Chronic lower respiratory disease : 3,009 (5.2%)
5 – Influenza and Pneumonia : 2,442 (4.2%)

Leading causes of death 2017

1 – Ischaemic heart disease : 6,727 (11.6%)
2 – Dementia and Alzheimer's disease : 6,549 (11.3%)
3 – Malignant neoplasm of trachea, bronchus and lung : 4,069 (7.0%)
4 – Cerebrovascular disease : 3,927 (6.8%)
5 – Chronic lower respiratory disease : 3,449 (6.0%)

Over time, the leading causes of death have changed. In 2000, the leading cause was also ischaemic heart disease but it accounted for a much higher proportion of deaths (21.5%). Cerebrovascular disease was the second most common cause, accounting for 11.8% of deaths, and dementia and Alzheimer's disease did not appear in the top five.

The leading cause of death analysis is based on a list of causes developed by the World Health Organisation (WHO). There are around 60 categories in total and cancers are grouped separately according to the type of cancer, for example, lung, breast and prostate cancer are all counted as separate causes. If all cancers were grouped together, cancer would be the leading cause of death.

Cancer

There were 16,207 cancer deaths in 2017. Of these, lung cancer (trachea, bronchus and lung) was the most common type – accounting for 1 in 4 of all cancer deaths – with 4,069 deaths (2,036 males and 2,033 females). For males, the second most common type of cancer death was prostate (986 deaths) and for females it was breast cancer (946 deaths). Bowel cancer (colon, rectum and anus) caused 1,733 deaths (905 males and 828 females) and blood cancers (lymphoid, haematopoietic and related tissue) caused 1,133 deaths (635 males and 498 females).

The number of cancer deaths has increased steadily over time – from 13,172 in 1974 to 16,207 in 2017 – an increase of 23%. This increase has mostly occurred in the older age groups. The average age at death from cancer has risen from 67.4 in 1974 to 74.4 in 2017. The age-standardised death rate for cancer has decreased by 17% from 1994 to 2017 for all people, and by 33% for under-75s over this time period.

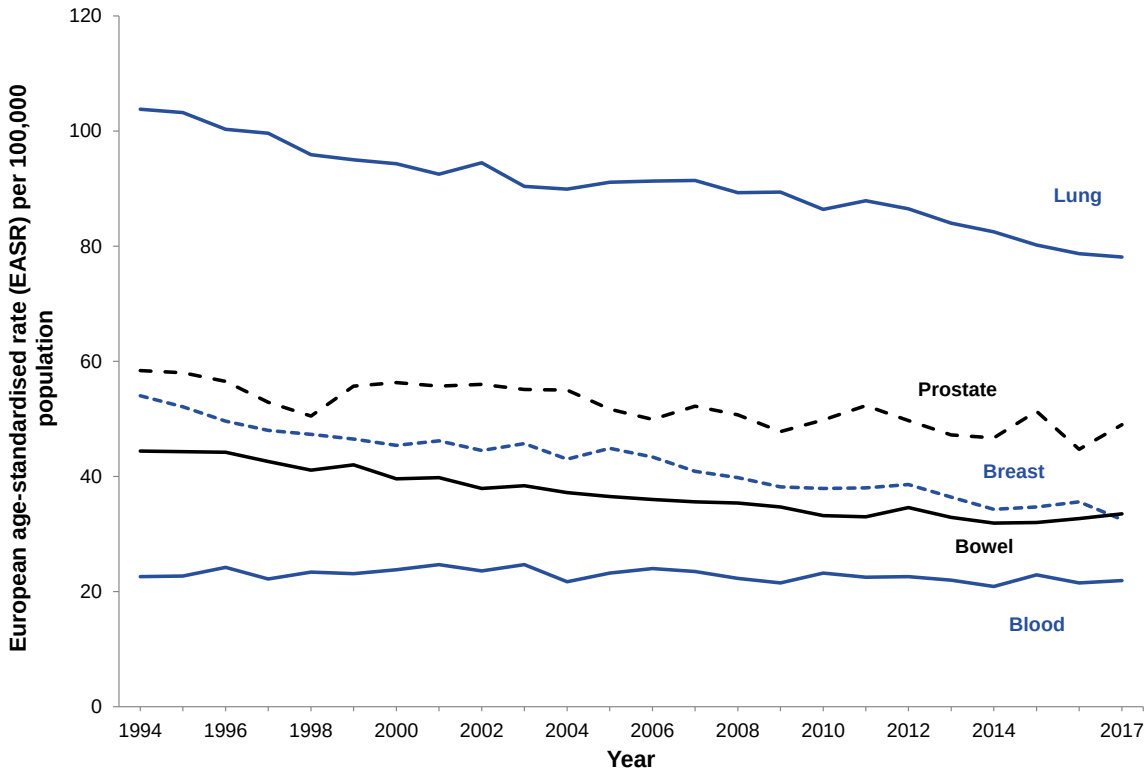
Table 3.1: Cancer deaths[1], numbers, age-standardised rates and average age at death, 1974 to 2017

Year	Number of deaths	Age-standardised death rate (all ages)[2]	Age-standardised death rate (under 75s)[2]	Average age at death
1974	13,172			67.4
1984	14,299			69.1
1994	15,164	378.3	231.4	70.9
2004	15,047	350.5	195.9	72.3
2014	15,840	318.6	165.8	73.8
2017	16,207	312.6	154.7	74.4

[1] Cancer deaths classified as follows: 1974 – ICD-8 codes 140-209; 1984-1994 – ICD-9 codes 140-208; 2004 onwards – ICD-10 codes C00-C97

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

Figure 3.2a: Age-standardised death rates in Scotland, by selected cancers, 1994-2017



Looking at specific cancer sites (Figure 3.2a), there has been a decrease of 25% in lung cancer and bowel cancer death rates since 1994 and breast cancer death rates (females only) have fallen by 40%. Prostate cancer death rates have fallen by 16% over the same period.

Circulatory diseases (ischaemic heart disease and cerebrovascular disease)

Table 3.2: Ischaemic heart disease deaths[1], numbers, age-standardised rates and average age at death, 1974 to 2017

Year	Number of deaths	Age-standardised death rate (all ages)[2]	Age-standardised death rate (under 75s)[2]	Average age at death
1974	19,028			71.6
1984	18,107			72.5
1994	15,234	398.5	183.9	75.0
2004	10,778	263.9	98.9	77.0
2014	6,872	141.5	52.5	77.5
2017	6,727	131.8	52.0	76.9

[1] Ischaemic heart disease deaths classified as follows: 1974 – ICD-8 codes 410-414; 1984-1994 – ICD-9 codes 410-414; 2004 onwards – ICD-10 codes I20-I25

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

There have been large reductions in the number of deaths from ischaemic heart disease (65%) and cerebrovascular disease (61%) over the last four decades.

Circulatory disease mortality improvements have been proportionately greater for under 75s. The under 75 age-standardised death rate for cerebrovascular disease fell by 71% since 1994 compared to 63% for all ages. There was also a greater decrease in age-standardised rates for ischaemic heart disease for under 75s (72%) than for all ages (67%). Between 1974 and 2017, the average age at death rose from 71.6 to 76.9 for ischaemic heart disease and from 75.5 to 82.2 for cerebrovascular disease.

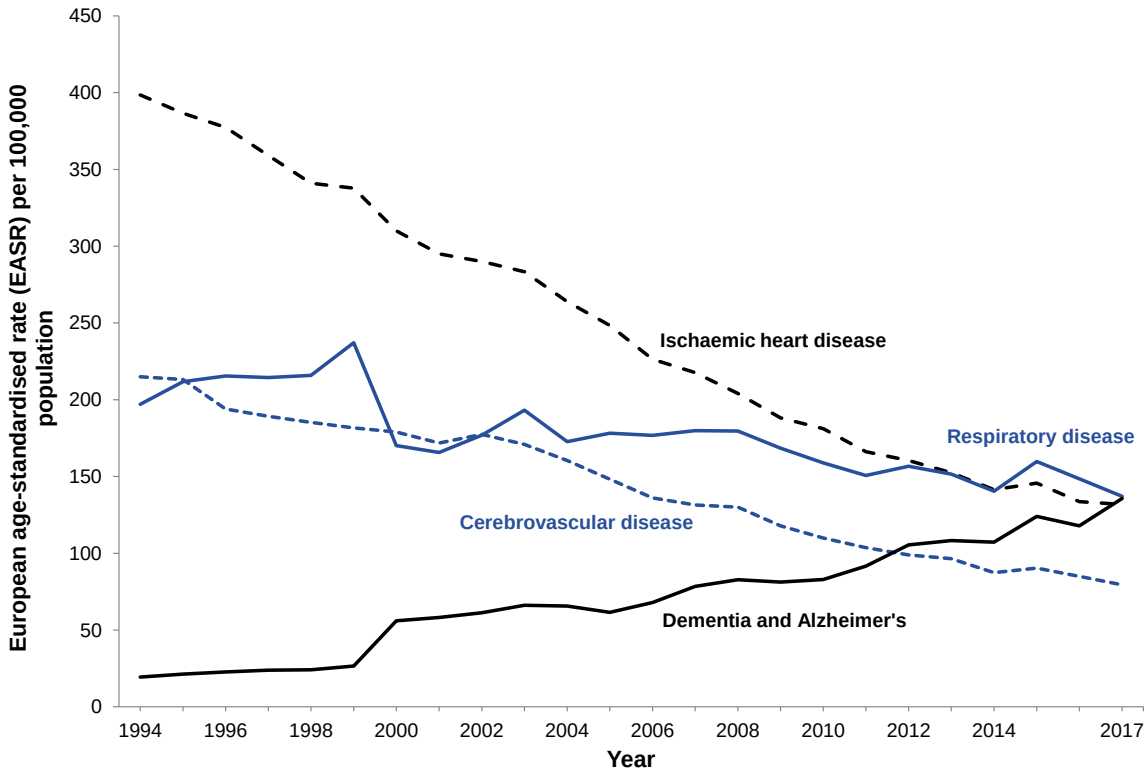
Table 3.3: Cerebrovascular disease deaths[1], numbers, age-standardised rates and average age at death, 1974 to 2017

Year	Number of deaths	Age-standardised death rate (all ages)[2]	Age-standardised death rate (under 75s)[2]	Average age at death
1974	10,197			75.5
1984	8,378			77.4
1994	7,684	214.9	56.7	79.4
2004	6,155	160.4	32.0	81.5
2014	4,123	87.4	17.4	82.4
2017	3,927	79.4	16.4	82.2

[1] Cerebrovascular disease deaths classified as follows: 1974 – ICD-8 codes 430-438; 1984-1994 – ICD-9 codes 430-438; 2004 onwards – ICD-10 codes I60-I69

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

Figure 3.2b: Age-standardised death rates in Scotland, by selected cause, 1994-2017



Respiratory diseases

The number of respiratory deaths has not changed dramatically in the last few decades with an increase of only 2% in the number of deaths between 1994 and 2017. However, there was a fall of 30% in the age-standardised death rate for all people. The average age at death from respiratory disease has risen from 71.9 in 1974 to 80.6 in 2017.

Table 3.4: Respiratory deaths[1], numbers, age-standardised rates and average age at death, 1974 to 2017

Year	Number of deaths	Age-standardised death rate (all ages)[2]	Age-standardised death rate (under 75s)[2]	Average age at death
1974	6,285			71.9
1984	7,099			76.6
1994	6,981	197.0	55.3	79.0
2004	6,743	172.7	47.0	79.8
2014	6,706	140.4	40.0	80.3
2017	6,854	137.1	39.0	80.6

[1] Respiratory disease deaths classified as follows: 1974 – ICD-8 codes 460-519; 1984-1994 – ICD-9 codes 460-519; 2004 onwards – ICD-10 codes J00-J99

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

New software development for coding the cause of death

From January 2017, NRS has introduced new software for coding the cause of death. The impact on the figures is relatively minor but has led to an increase in deaths coded to dementia and Alzheimer's and a decrease in deaths coded to respiratory diseases. Deaths from dementia and Alzheimer's were rising before the new software was introduced, but the impact of the software change further increases deaths from these causes. More information can be found in the paper The Impact of the Implementation of IRIS Software for ICD-10 Cause of Death Coding on Mortality Statistics in Scotland.

Dementia and Alzheimer's disease

Dementia and Alzheimer's deaths have increased considerably over time. Figures before and after 2000 are not strictly comparable due to changes in death coding, so it is better to focus on changes after this time. Rates in the under 75s are, as expected, very low. The average age at death has risen slightly over time, to reach 86.9 in 2017.

Between 2004 and 2017 the age-standardised death rate from dementia and Alzheimer's disease has more than doubled.

Table 3.5: Dementia and Alzheimer's deaths[1], numbers, age-standardised rates and average age at death, 1984 to 2017

Year	Number of deaths	Age-standardised death rate (all ages)[2]	Age-standardised death rate (under 75s)[2]	Average age at death
1984	389			83.3
1994	629	19.4	1.6	84.8
2004	2,354	65.6	5.3	85.7
2014	4,915	107.3	5.8	86.9
2017	6,549	135.7	7.1	86.9

[1] Dementia and Alzheimer's disease deaths classified as follows: 1984-1994 – ICD-9 codes 290, 331.0; 2004 onwards – ICD-10 codes F01, F03, G30.

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

Other causes

The number of accidental deaths, alcohol-related deaths and probable suicides are much lower than deaths from the causes discussed above, but because these deaths tend to occur at younger ages, their impact is high. There have been definitional changes in all of these causes in recent years, so, for comparison purposes and to allow examination of a longer trend, the following figures are presented on the basis of both the old and new definitions.

Figure 3.2c: Age-standardised death rates in Scotland, by selected cause, 1994-2017

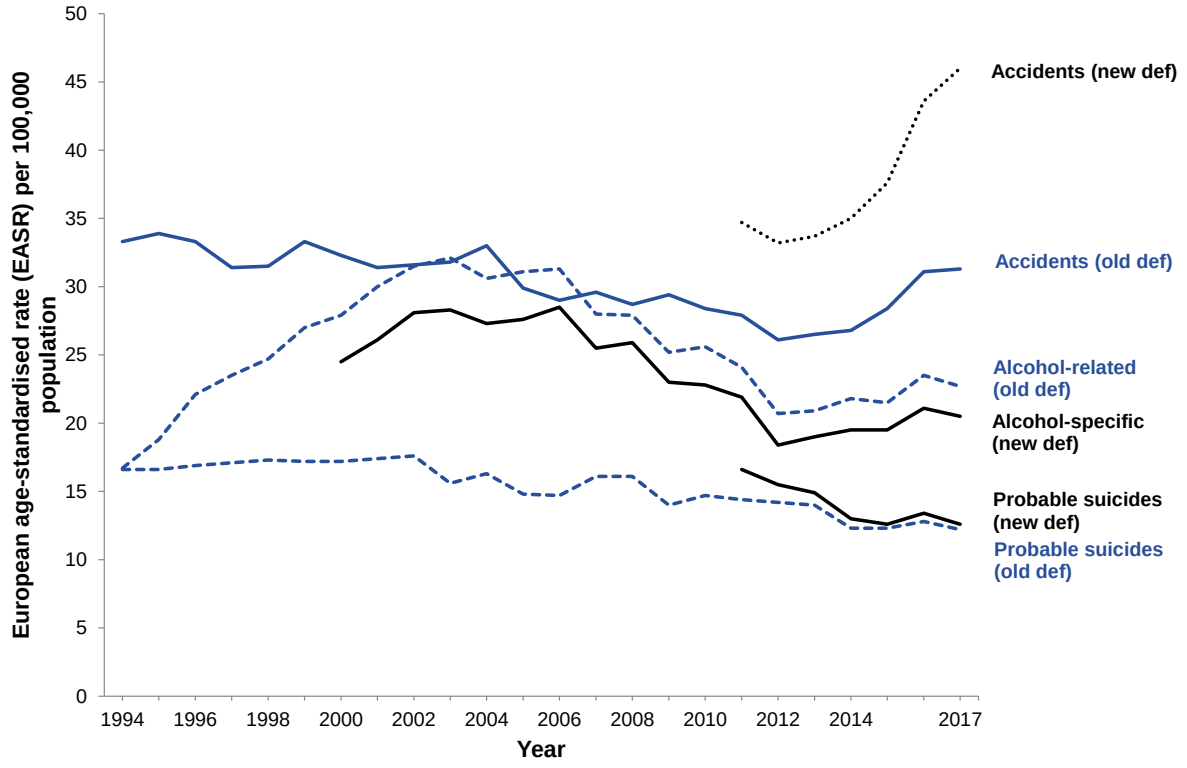


Table 3.6: Alcohol deaths[1] (old and new definitions), numbers, age-standardised rates and average age at death, 1984 to 2017

Year	Number of deaths		Age-standardised death rate (all ages)[2]		Age-standardised death rate (under 75s)[2]		Average age at death	
	old	new	old	new	old	new	old	new
1984	572						57.6	
1994	741		16.7		16.7		57.0	
2004	1,478	1,331	30.6	27.3	30.9	28.4	56.3	55.3
2014	1,152	1,036	21.8	19.5	21.2	19.7	58.5	57.3
2017	1,235	1,120	22.7	20.5	22.1	20.7	59.9	58.9

[1] For details of ICD codes used in the old and new definitions refer to the NRS website.

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

The number of alcohol-related deaths (old definition) rose steeply until mid-2006 (1,546 deaths), before falling to a recent low of 1,080 deaths in 2012. However, there have been increases in the last five years, suggesting that the trend is beginning to increase again. The trend is similar for the new alcohol-specific deaths definition (see Figure 3.2c). For more detail refer to the alcohol deaths section of the NRS website.

Table 3.7: Accidental deaths[1] (old and new definitions), numbers, age-standardised rates and average age at death, 1984 to 2017

Year	Number of deaths		Age-standardised death rate (all ages)[2]		Age-standardised death rate (under 75s)[2]		Average age at death	
	old	new	old	new	old	new	old	new
1984	1,997						56.1	
1994	1,362		33.3		17.6		60.9	
2004	1,390		33.0		15.7		65.9	
2014	1,320	1,750	26.8	35.0	11.9	20.8	70.1	62.9
2017	1,579	2,348	31.3	46.0	12.8	28.8	72.6	62.5

[1] For details of ICD codes used refer to the definition of the statistics page on the NRS website.

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

Accidental deaths (using the old definition) have fallen in recent years but have begun to rise since 2012, when there were 1,247 deaths. The age range for accidental deaths is wide, with the most common causes of accidental deaths being falls (predominantly among older people) and accidental poisonings (affecting younger people). For more detail refer to the accidental deaths section of the NRS website.

Probable suicides (defined as deaths from intentional self-harm and events of undetermined intent) have decreased over the last two decades, with a 27% decrease in the age-standardised death rate (using the old definition) between 1994 and 2017. The average age at death from suicide is 46. For more detail refer to the probable suicides section of the NRS website.

Table 3.8: Probable suicides[1] (old and new definitions), numbers, age-standardised rates and average age at death, 1974 to 2017

Year	Number of deaths		Age-standardised death rate (all ages)[2]		Age-standardised death rate (under 75s)[2]		Average age at death	
	old	new	old	new	old	new	old	new
1974	642						48.1	
1984	688						47.7	
1994	834		16.6		16.6		43.2	
2004	835		16.3		16.5		44.3	
2014	659	696	12.3	13.0	12.8	13.5	46.2	45.9
2017	664	680	12.2	12.6	12.7	13.0	46.0	46.0

[1] For details of ICD codes used refer to the definition of the statistics page on the NRS website.

[2] Age-standardised death rates are per 100,000 population and are based on the European Standard Population 2013. They are not available (using the current methodology) prior to 1994.

Other NRS published statistics on causes of death:

- Drug-related deaths
- Deaths involving healthcare associated infections (Clostridium difficile and MRSA)
- Hypothermia
- Winter mortality
- Avoidable mortality
- Vital Events Reference Tables

Mortality by age

Figure 3.3 shows, for males and females, selected age-specific mortality rates over the last 36 years relative to the 1981 rates.

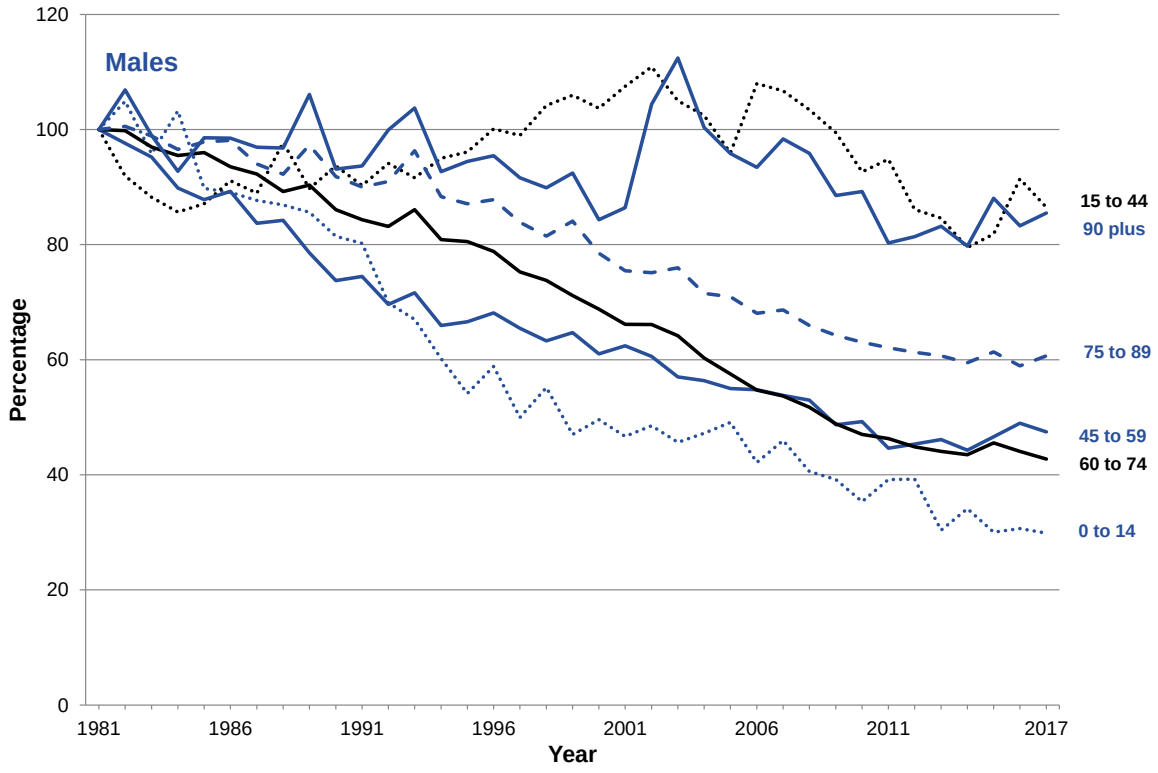
The greatest percentage reductions have occurred in the 0 to 14 age group with a decrease of 70% for both males and females since 1981, although proportionately the number of deaths in this age group is very small.

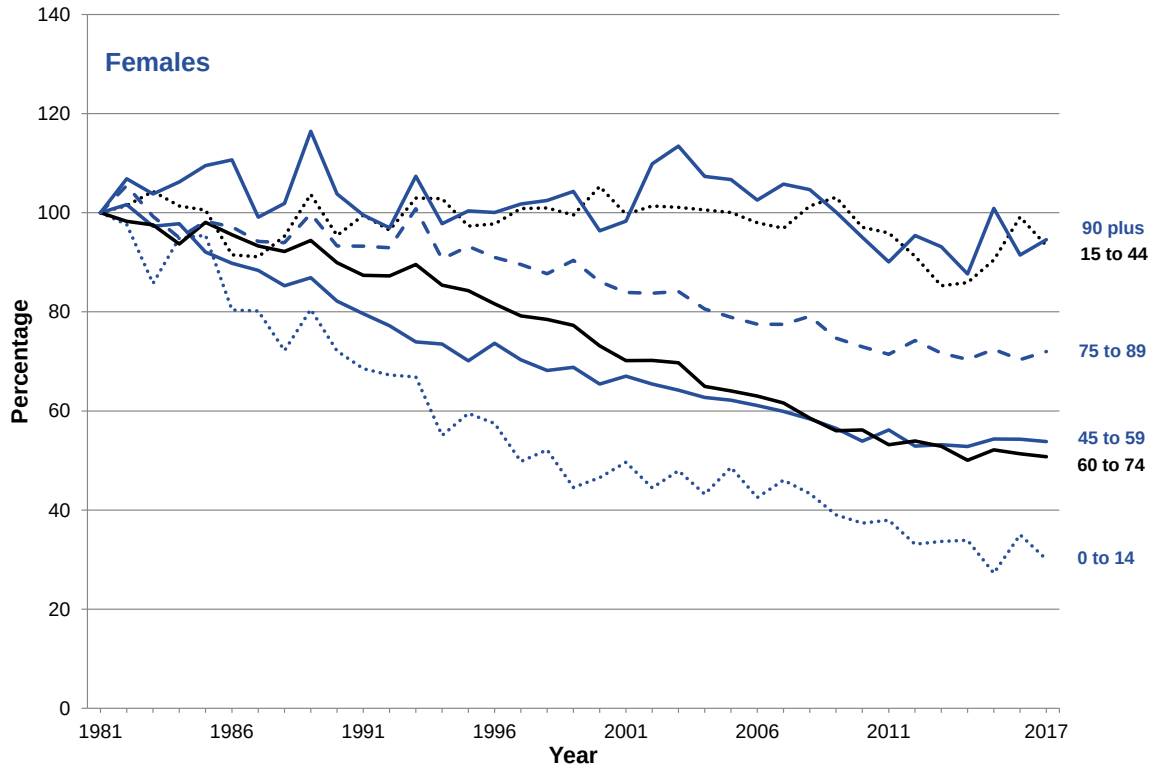
Excluding this group, the greatest reductions have been in the 45 to 59 and 60 to 74 age groups which have seen decreases of 53% and 57% respectively for males and 46% and 49% for females.

Death rates in the 15 to 44 age group have decreased by 14% for males and by 7% for females over the period but the trend has been more volatile due to the relatively low numbers of deaths in this age group.

Deaths rates in the 90 plus age group have reduced at a greater rate for males (by 15%) than for females (5%).

Figure 3.3: Age-specific mortality rates as a proportion of 1981 rate, 1981-2017



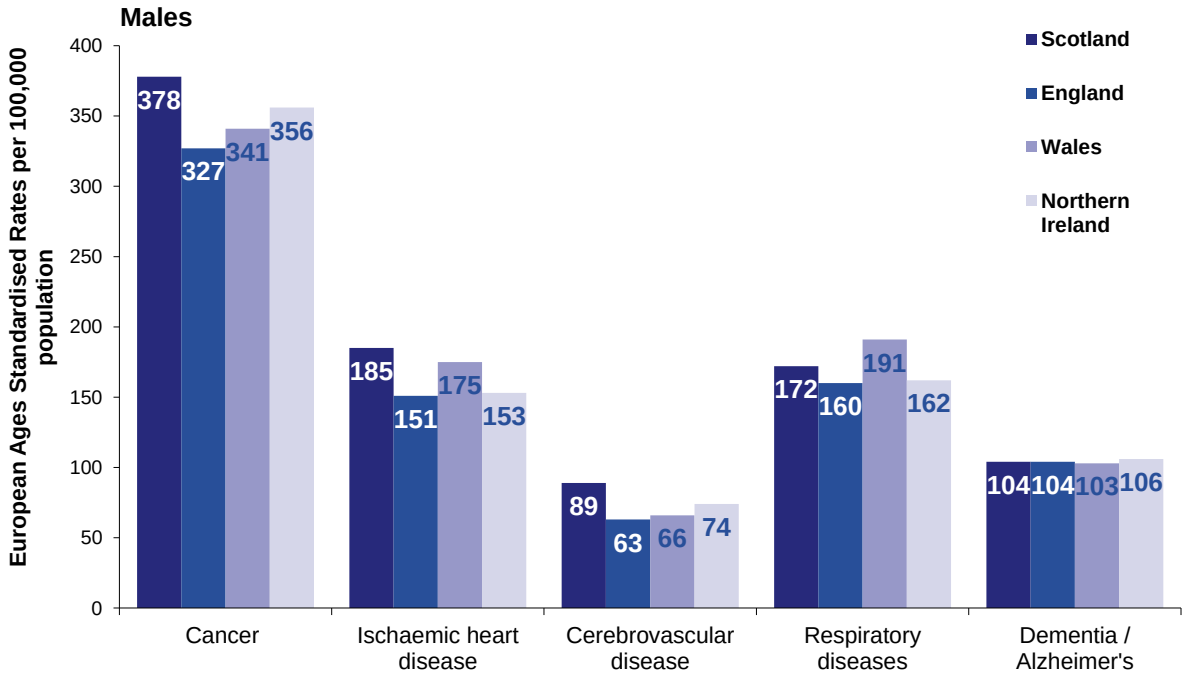


Geographical variations in mortality

Using 2016 data, the latest available for other parts of the UK, Figure 3.4a and Figure 3.4b compare the age-standardised death rates for the constituent countries of the UK for selected causes after adjusting for differences in age structure.

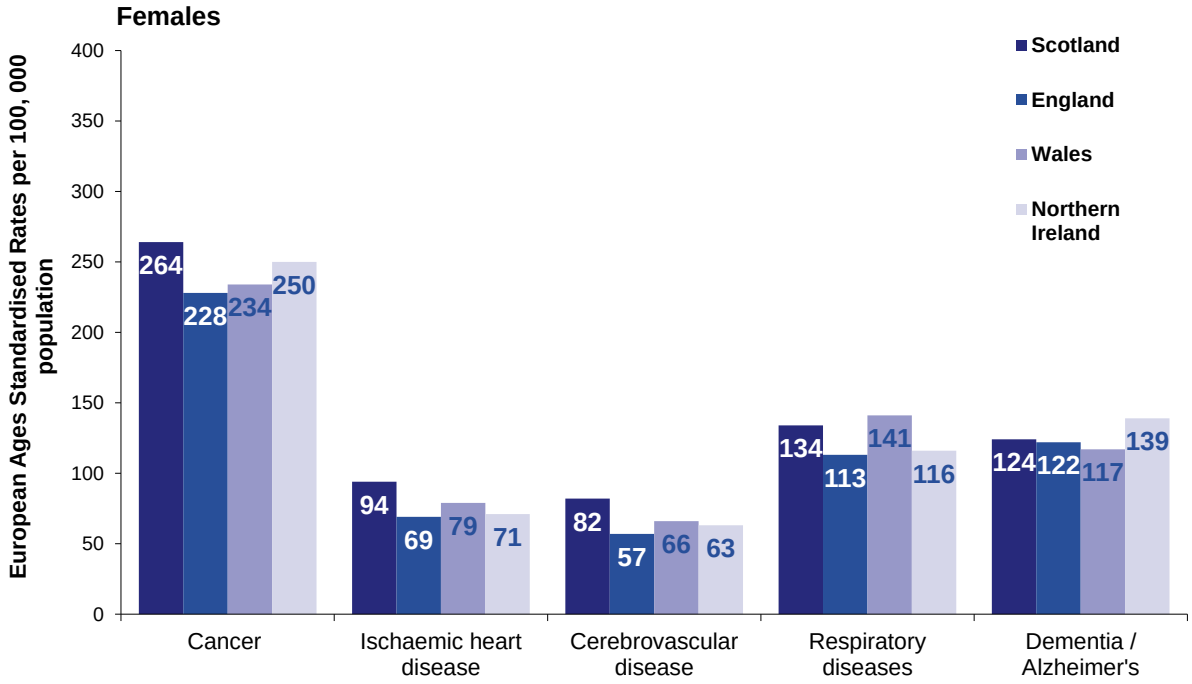
The Scottish rates for cancer, ischaemic heart disease and cerebrovascular disease are well above the rates for the other countries for both males and females. The rates for dementia and Alzheimer's disease across countries are very similar for males and for females are highest in Northern Ireland. Scotland has a lower rate of respiratory deaths than in Wales.

Figure 3.4a: Age-standardised mortality rates, by selected cause, 2016, males



Note: European Age-standardised Rates (EASRs). These age-standardised mortality rates are based on the 2013 version of the European Standard Population.

Figure 3.4b: Age-standardised mortality rates, by selected cause, 2016, females



Note: European Age-standardised Rates (EASRs). These age-standardised mortality rates are based on the 2013 version of the European Standard Population.

How does Scotland compare to other European countries?

Appendix 1 - Table 3 shows the death rate for each of the EU member states, and for some other countries in Europe. These are crude death rates. They are calculated by expressing the number of deaths per 1,000 population. As a result, they do not take account of differences in the age structures of the countries' populations. All else being equal, a country with an unusually high proportion of its population in the younger age groups could have unusually low crude death rates. So, although the figure for Scotland is higher than those for most of the countries that are shown, this could to some extent be due to the structure of the Scottish population. A better way to compare Scotland's mortality with other countries' is to use the estimates of life expectancy for each country (please refer to Chapter 4 – Life Expectancy) or to consider age-standardised death rates.

Stillbirths, perinatal deaths and infant deaths

There were 225 stillbirths registered in Scotland in 2017. Stillbirths (where a child born after the 24th week of pregnancy does not breathe or show any other sign of life) are registered separately from live births and from deaths, and so are not included in either of those figures.

Perinatal deaths consist of stillbirths plus deaths in the first week of life (the latter are registered as live births and as deaths). There were 79 deaths of children who were aged under one week old, so there was a total of 304 perinatal deaths.

Infant deaths are deaths in the first year of life, all of which are registered as live births and as deaths. In total, 176 infant deaths were registered in Scotland in 2017 (including those who died in the first week of life).

Appendix 1 - Table 1 shows that in 2017 the stillbirth rate (4.2 per 1,000 live and still births) and the infant death rate (3.3 per 1,000 live births) were very low in historic terms, with 2015 having the lowest rates ever. Both rates have fallen greatly since the Second World War. The stillbirth rate has fallen slowly in the past 30 years but the infant death rate has continued a steeper decline over the same period.

Appendix 1 - Table 3 shows that the stillbirth rate for Scotland in 2017 (4.2 per 1,000 live and still births) was lower than that for the UK as a whole (4.4) but higher than those of 21 of the 28 EU countries. The infant death rate for Scotland in 2017 (3.3) was below the UK rate (3.8) but higher than those of 13 of the 28 EU countries.

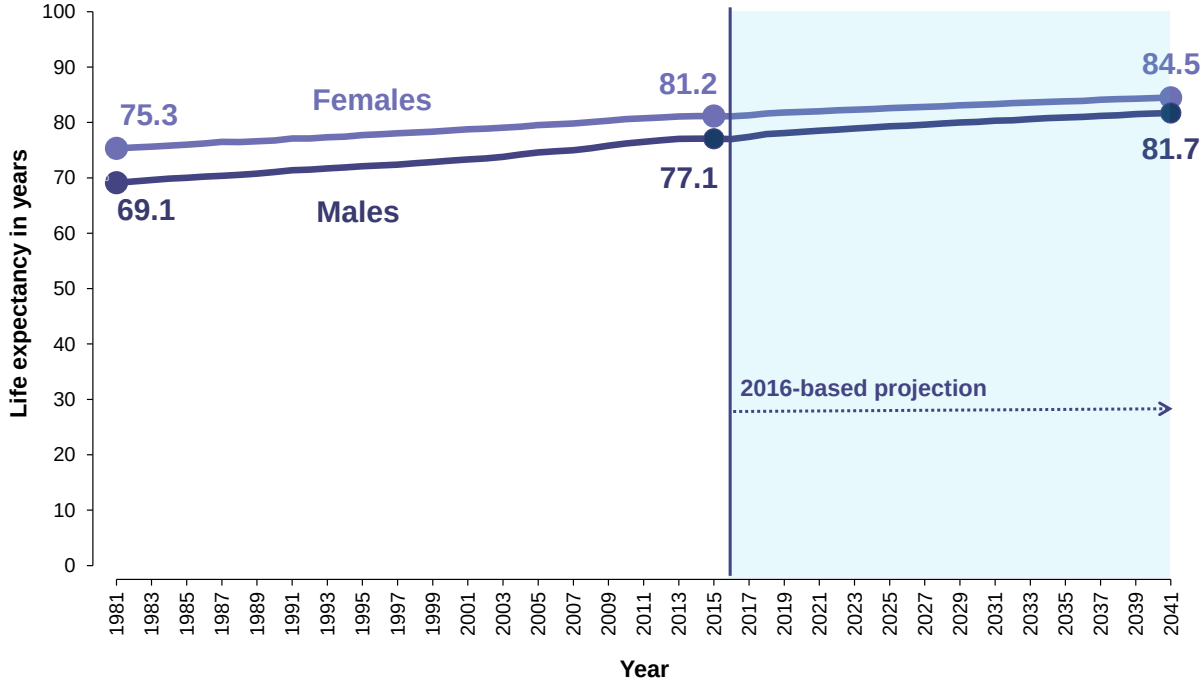
Life expectancy

"While life expectancy in Scotland has increased for the past three decades, there has been no change over the last few years."

Most recent figures

Life expectancy (LE) at birth in Scotland was 81.2 years for females and 77.1 years for males for the period 2014-2016. Since 1980-1982, LE at birth has risen by almost six years for females and by eight years for males, as can be seen in Figure 4.1.

Figure 4.1: Life expectancy at birth[1], Scotland, 1981-2041



Footnote: 1) Figures to 2015 are from the National Life Tables published by NRS and are based on three years of data. For example, 2015 figure uses data for 2014-2016. Figures for 2016 are 2014 based projected single year life expectancies (NRS). Figures from 2017 are 2016 based single year life expectancies (NRS).

While life expectancy has always been higher for females than for males, the gap has been steadily narrowing over the last three decades. Future life expectancy at birth in Scotland is expected to continue rising based on the 2016 population projections for Scotland. Figure 4.1 shows that by 2041, life expectancy at birth is projected to reach 84.5 years for females and 81.7 years for males.

Why do we use three years for life expectancy?

Official life expectancy statistics for Scotland are calculated by aggregating the latest three years of deaths and population estimates. This is to increase the sample size and improve the reliability of the results.

Life expectancy can also be calculated for different age groups to give a more nuanced picture of how long the current population could be expected to live for. In 2014-2016, a man aged 65 could expect to live for 17.4 further years, whereas a woman of the same age could expect to live for 19.7 more years. At age 85, a man would have on average 5.5 years left to live and a woman of the same age would have 6.4 years left.

What is 'period' life expectancy?

All of the estimates presented in this chapter are 'period' life expectancy. This means that they are calculated assuming that mortality rates for each age group in the base time period (here 2014-2016) remain constant throughout a person's life. Therefore, future changes in medicine and legislation for example, are not taken into consideration. While this means that period life expectancy is not necessarily an accurate predictor of how long a person will actually live, it is a useful measure of population health.

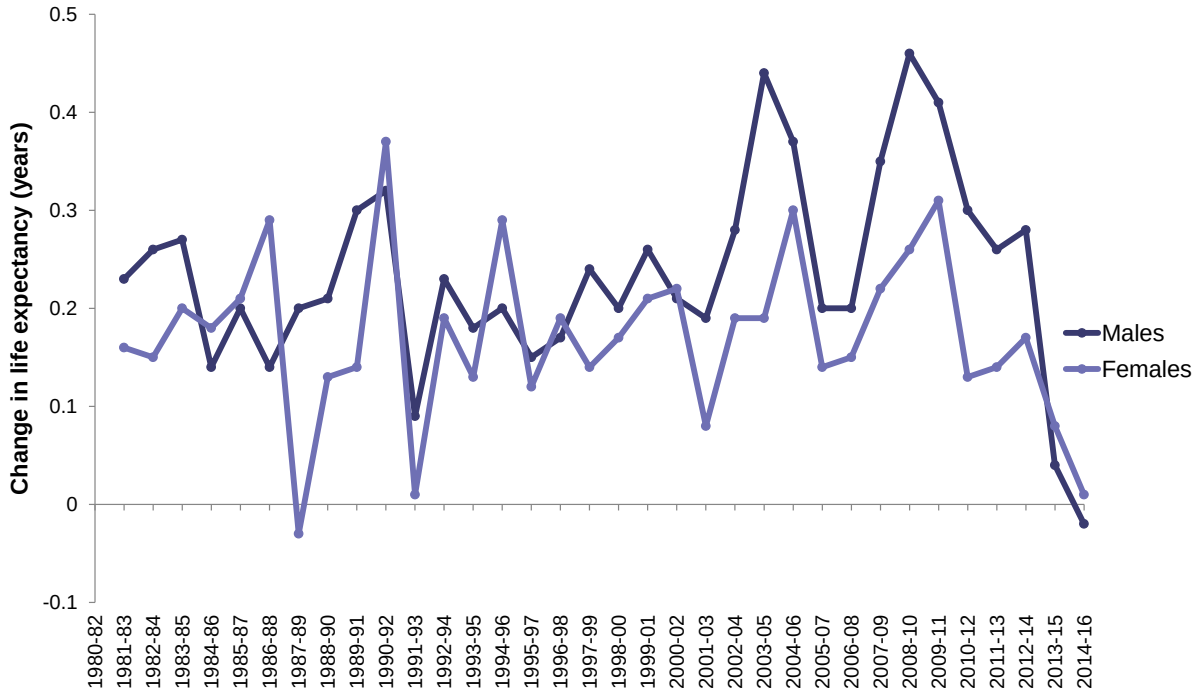
Annual change in life expectancy

While LE at birth has increased since 1980-1982, over the past few years there has been a slowing in the rate of increase, and there has been virtually no change in either male or female LE over the past three estimates (since 2012-2014). Figure 4.2 shows in more detail the annual change in life expectancy since 1980-1982. It shows that male life expectancy has increased at a fairly steady pace (around 0.1 to 0.3 years per year) up until 2003-2005 when the rate of increase became higher for the following few years. After 2012-2014, the annual change decreased to a complete standstill and there was a slight decrease in 2014-2016. For females, the annual change in LE has been more varied than for males and there have been two instances in the past when it has briefly stalled for one year before increasing again. The stall seen in 2014-2016 is the first time where LE for both males and females has stalled after a period of slowing. It is difficult to say at present whether this is the start of a new trend in LE in Scotland or just temporary variation.

Life expectancy in the UK

The recent stalling in life expectancy is seen not just in Scotland but all across the UK. The Office for National Statistics (ONS) have recently published some analysis investigating the stalling in life expectancy in England.

Figure 4.2. Annual change in life expectancy in Scotland for males and females 1980-1982 to 2014-2016



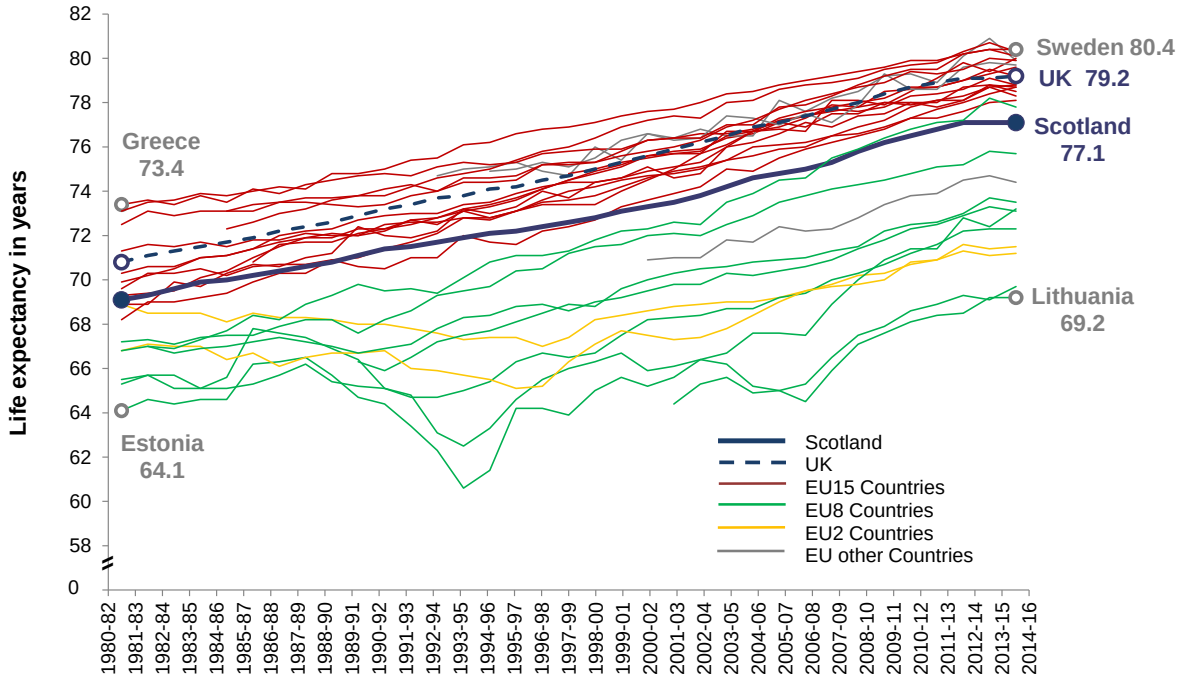
Scottish life expectancy in a European context

Figure 4.3a and Figure 4.3b show male and female LE across 28 EU states and Scotland. Life expectancy in Scotland is lower than all of the EU 15 countries for both males and females and is more similar to LE in the EU 8 countries for females especially.

European Union Countries

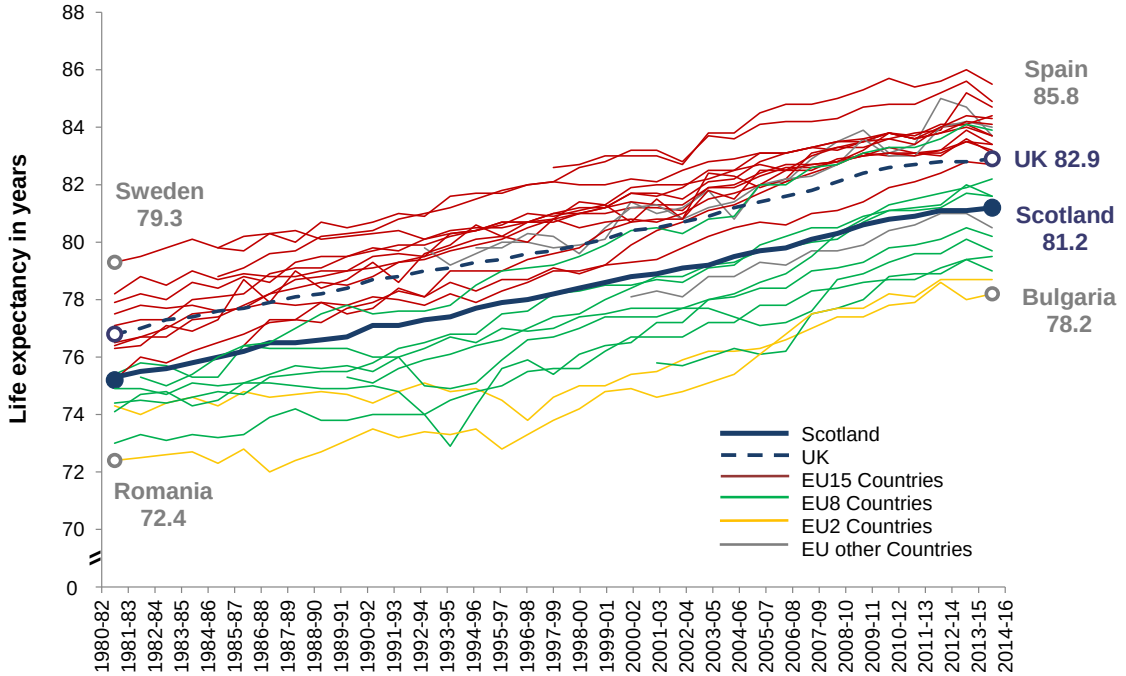
EU 15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK
EU 8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia
EU 2: Bulgaria and Romania
EU 'other': Cyprus, Malta and Croatia

Figure 4.3a: Life expectancy at birth in European Union countries, 1980-1982 to 2014-2016, males



Source: National Life Tables for Scotland 2014-2016 (NRS), National life tables, UK (ONS), European figures from Eurostat table: demo_mlexpec

Figure 4.3b: Life expectancy at birth in European Union countries, 1980-1982 to 2014-2016, females



Source: National Life Tables for Scotland 2014-2016 (NRS), National life tables, UK (ONS), European figures from Eurostat table: demo_mlexpec

Which EU countries have the highest and lowest life expectancy at birth?

	Females	Males
Highest	Spain (85.5)	Sweden (80.4)
Lowest	Bulgaria (78.2)	Lithuania (69.2)

Figure 4.3a and Figure 4.3b show that male LE in the UK as a whole is ranked 9th out of the EU countries and female LE is ranked 17th. By contrast, male LE in Scotland is midway between Slovenia and the Czech Republic which are ranked 18th and 19th respectively. For females, Scottish LE falls closest to Poland and the Czech Republic, (both ranked 20th) and Croatia (ranked 22nd).The recent stalling in life expectancy seen in Scotland is also present in many other European countries. Of the 29 countries represented in Figure 4.3a and Figure 4.3b, 15 experienced a decrease in male LE and 22 experienced a decrease in female LE.

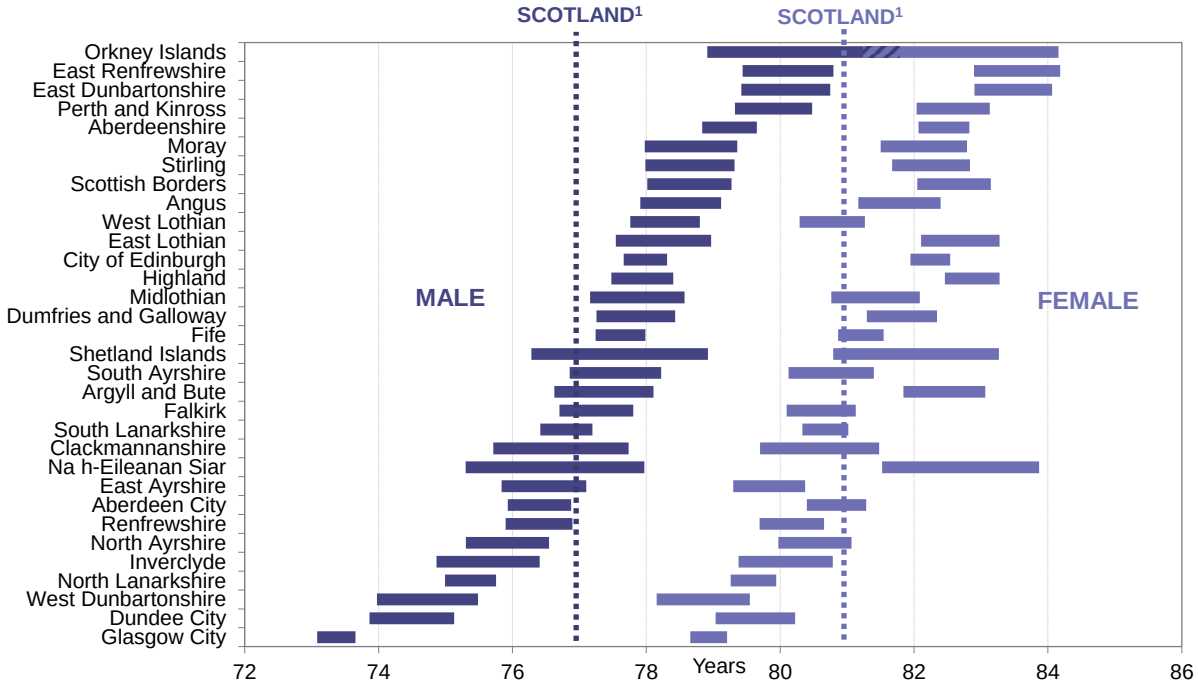
Life expectancy for administrative areas in Scotland

The life expectancy figures for Scotland presented in the National Life Tables are average figures for all males and all females in the country, and while useful for comparisons with other countries, are not necessarily representative of most Scottish people. Figure 4.4 shows that in 2014-2016, male LE was highest in Orkney Islands (80.3 years) and female LE was highest in East Dunbartonshire and East Renfrewshire (both 83.5 years). The lowest LE for males was in Glasgow City where a baby boy could expect to live for 73.4 years (7 years less than in Orkney Islands). Female LE was lowest in West Dunbartonshire where a baby girl could expect to live for 78.8 years (4.7 years less than in neighbouring East Dunbartonshire).

Which Scottish council areas have the highest and lowest life expectancy at birth?

	Females	Males
Highest	East Dunbartonshire/ East Renfrewshire (83.5)	Orkney Islands (80.3)
Lowest	West Dunbartonshire (78.8)	Glasgow City (73.4)

Figure 4.4: Life expectancy at birth by council area with 95% confidence intervals, 2014-2016, males and females (ordered by male LE)



Footnote: 1) The Scotland-level life expectancy estimates are for use only as a comparator for the corresponding sub-Scotland-level figures and are not the definitive figures for Scotland.

Accuracy of subnational life expectancy estimates

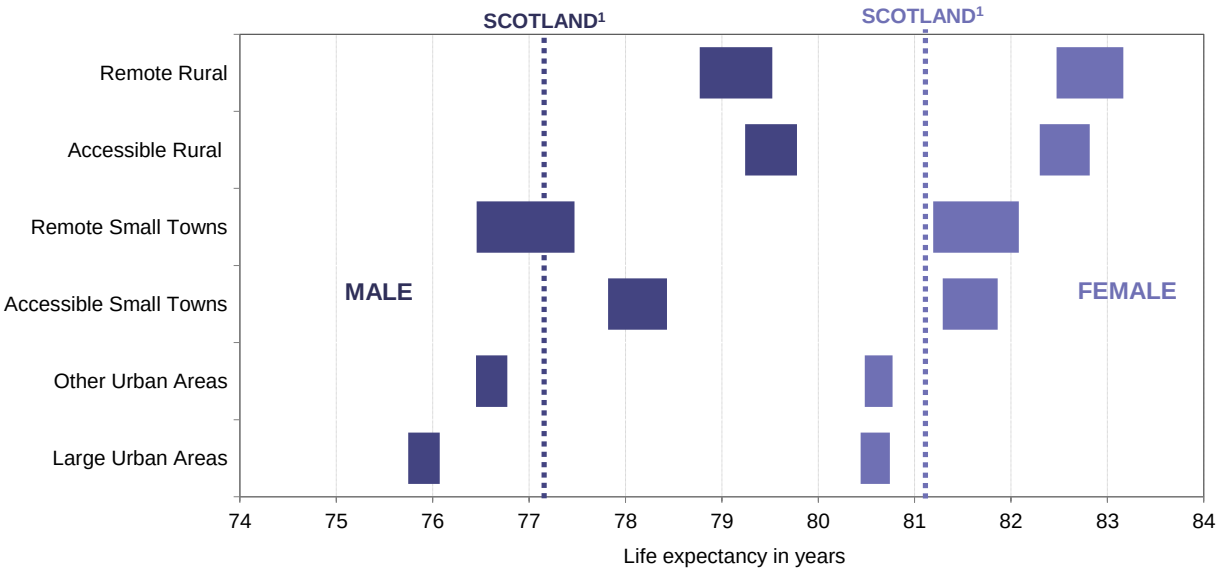
Because the populations of subnational areas are smaller than for countries, the accuracy of the LE estimates is lower. In Figure 4.4, Figure 4.5 and Figure 4.7, 95% confidence intervals indicate the likely variability of average LE in each area. In areas with larger populations (e.g. Glasgow City council area) the confidence intervals are small and we can be more certain that the actual LE is close to the estimate. In less populated areas (e.g. the island council areas) we have to be more cautious when interpreting the estimates.

Urban Rural classification

We can also look at how LE varies across areas with different characteristics, for example, urban and rural areas. Figure 4.5 shows LE in 2014-2016 for males and females in areas of Scotland split by 6-fold urban rural classification (2014). For

further details on how urban rural classification is defined, please refer to the Scottish Government website. Figure 4.5 shows that LE is greater in rural areas for both males and females. This may be related to cleaner air in rural areas resulting in lower incidence of respiratory disease than in towns and cities. There may also be an effect however, of people with chronic illness moving into towns and cities where medical care is more accessible.

Figure 4.5: Life expectancy at birth by urban/rural classification with 95% confidence intervals, 2014-2016 (males and females)



Footnote: 1) The Scotland-level life expectancy estimates are for use only as a comparator for the corresponding sub-Scotland-level figures and are not the definitive figures for Scotland.

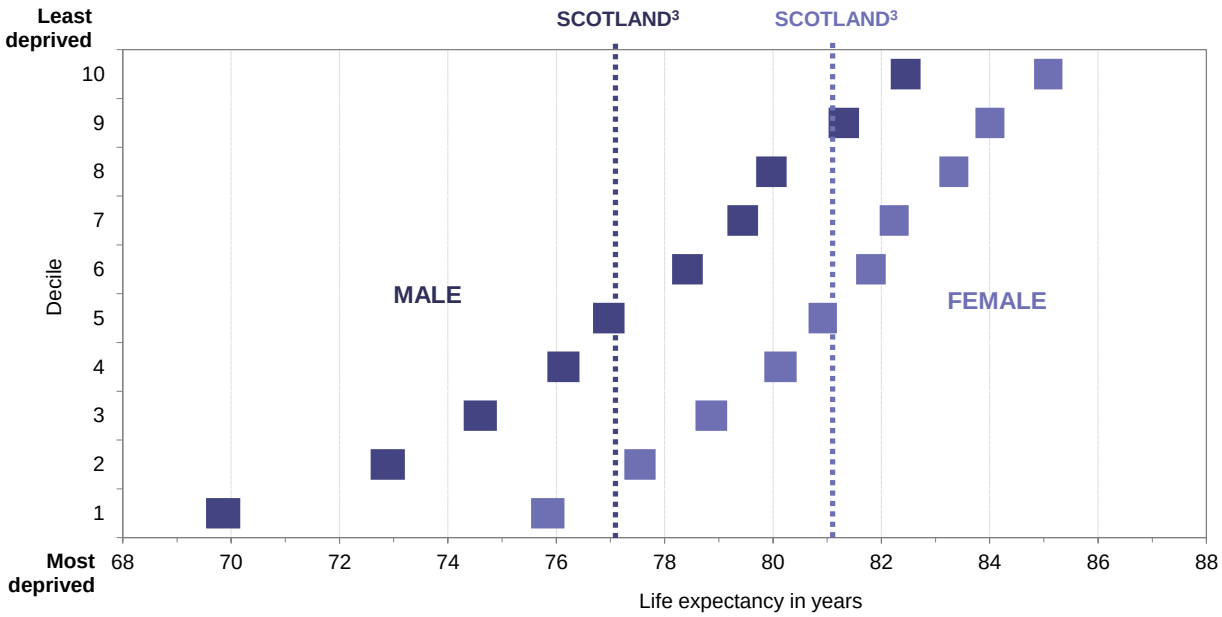
As Figure 4.5 shows, the relationship between rurality and LE is simple for females in Scotland; those in rural areas live longer than those in small towns, who in turn live longer than those in urban areas. There is no difference in LE between 'Large Urban' and 'Other Urban' areas, or between 'Remote Small Towns' and 'Accessible Small Towns', or between 'Remote Rural' and 'Accessible Rural' areas. For males, the pattern is slightly different. LE for males in 'Other Urban' areas is significantly greater than for males in 'Large Urban' areas (the difference is significant as there is no overlap of confidence intervals). Similarly, LE for males in 'Accessible Small Towns' is significantly greater than for males in 'Remote Small Towns', where LE is similar to that in 'Other Urban' areas.

Scottish Index of Multiple Deprivation (SIMD)

People living in less deprived areas can expect to live longer lives than those in more deprived areas.

Life expectancy for people living in Scotland is also closely related to deprivation. Figure 4.6 shows LE for males and females in Scotland split by SIMD (2016) deciles. For more details on SIMD, please refer to the Scottish Government website. In 2014-2016, females living in SIMD decile ten (least deprived) could expect to live for 85.1 years from birth, whereas females living in decile one (most deprived) could expect to live for 75.8 years (a gap of 9.2 years). For males, those living in decile ten had an LE of 82.4 years while those in decile one had an LE of 69.9 years (12.6 years difference). There is also an especially large gap of three years in male LE between deciles one and two. The difference between male and female LE also becomes more pronounced in more deprived areas. In 2014-2016, the difference between male and female LE in decile ten was 2.6 years, compared to 6.0 years in decile one.

Figure 4.6: Life expectancy at birth by deprivation deciles with 95% confidence intervals, 2014-2016 (males and females)



Footnote: 1) The Scotland-level life expectancy estimates are for use only as a comparator for the corresponding sub-Scotland-level figures and are not the definitive figures for Scotland.

Time to death

Knowing the life expectancy of a population allows us to look at ageing in terms of the number of years that a person has left to live rather than the number of years that they have already lived. Often, when we talk about the percentage of a population that are 'old' we use a specific age (often 65+ years) and look at the number of people who are of that age or older. In time to death statistics, the population that is considered 'old' is defined by the number of years left to live (often 15 or fewer).

Chronological age vs. remaining life expectancy (RLE)

This idea can seem quite complicated, however, this is exactly the same concept that people are referring to when they say things like:
"40 is the new 30".

Figure 4.7 illustrates how the age at which a person has on average 15 years of life remaining has increased over the past three decades. A man in 1981-1983 who had 15 years RLE (remaining life expectancy) was 60.8 years old. A man in 2014-2016 who had 15 years RLE was 68.2 years old. Even though the man in 2014-2016 is more than seven years older in chronological terms, the two men have the same amount of life left to live. Conversely, a 65 year old man in 2014-2016 would have 17.4 years RLE while a 65 year old man in 1981-1983 would have had only 12.4 years RLE. These two men have the same chronological age, but in terms of RLE, the man in 2014-2016 is five years 'younger'.

It is valuable to look at time to death statistics and remaining life expectancy because it gives a more nuanced picture of population aging. It is useful to take into account not just how old people are, but how much longer they can expect to live, and how long they will be 'elderly' for in order to plan for future health and care provision.

Figure 4.7: Average age of males and females in Scotland with 15 years of remaining life expectancy, 1981-1983 to 2014-2016

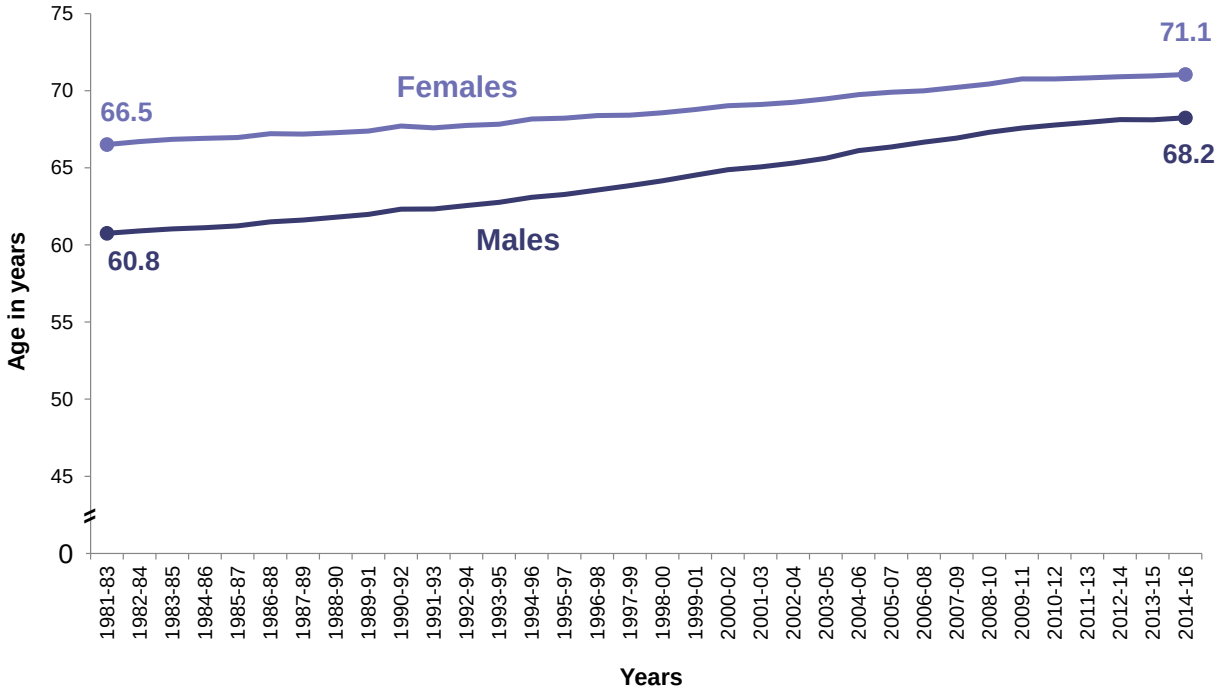
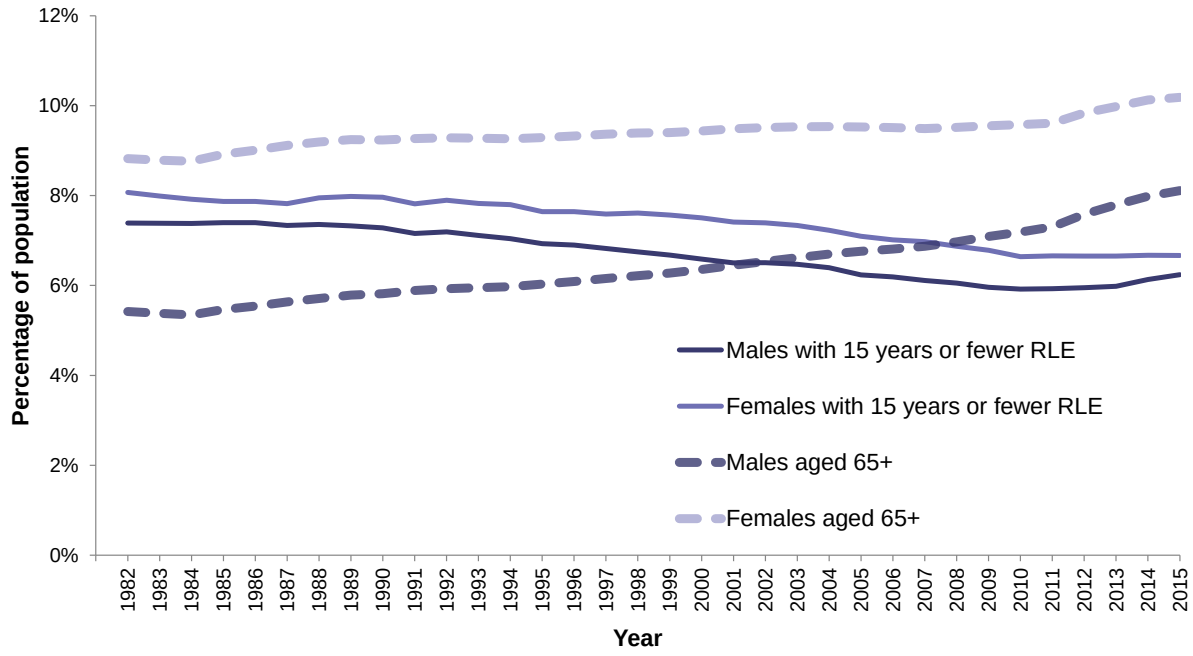


Figure 4.8 shows the percentage of the population of Scotland aged over 65 from 1981-1983 to 2014-2016. It also shows the percentage of the population that have an estimated 15 or fewer years RLE over the same period. For both males and females, the proportion of the population aged 65 and over increases steadily throughout the whole time period, from 5.4% for males and 8.8% for females in 1982, to 8.1% for males and 10.2% for females in 2015. For people with 15 or fewer years RLE, the proportion decreases slowly between 1982 and 2010 and then for the last few years has remained constant for females and increased very slightly for males.

Figure 4.8: Percentage of Scotland's population aged 65+ years and with 15 years or fewer remaining life expectancy, 1982-2015[1]



Footnote: 1) Figures for population with 15 years or fewer RLE are three year centred averages. For example, the 2015 figure uses data for 2014-2016. Figures for population aged 65+ are based on single year population data.

The lines for population with 15 or fewer years RLE and the population aged 65 and over are very different because they are influenced by different things. The proportion over 65 changes with the population structure. For example, as unusually large cohorts, such as those born in the 'baby boom' years, become older, they increase the proportion of over 65 year olds relative to the rest of the population. The proportion of the population with 15 or fewer years RLE is affected not only by this, but also by changes in life expectancy. If life expectancy stops increasing (as it has done for the past two estimates) then we might expect the proportion of the population with 15 years RLE to begin to increase.

Clearly, it is important which measure of 'old age' is used when looking at how Scotland's population is changing and ageing. For some things, such as the percentage of pensioners, chronological age may be the most useful (although many people do not retire at pension age). However, if we are more interested in the proportion of the population who are likely to be affected by conditions associated with old age and end of life, then RLE may be a more useful indicator.

Migration

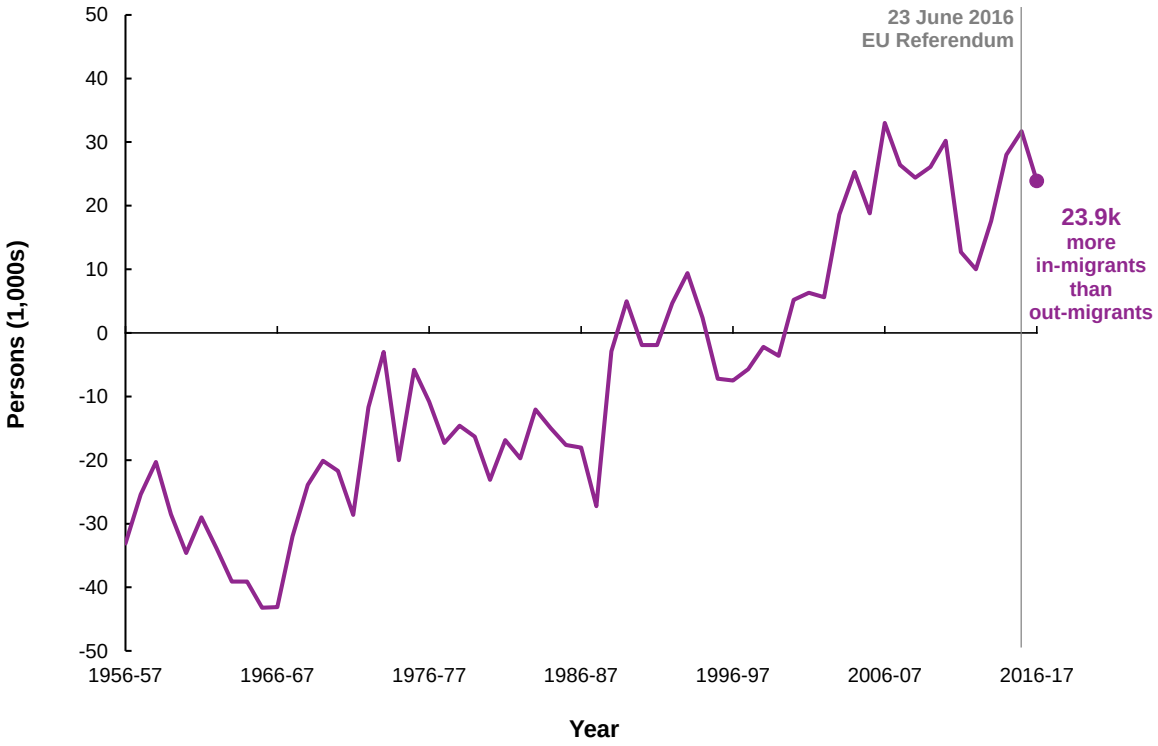
"Scotland's future population growth is projected to be entirely reliant on migration."

There is considerable interest in understanding the impact of migration on our population, economy and society, and this has only heightened given the UK's decision to leave the European Union (EU). This chapter presents information describing the trends in migration and the impact of migration on Scotland's population.

Scotland's migration trends

Before the 1990s, Scotland was predominantly a country of net out-migration. The largest net out-migration was seen in the year to mid-1966, when 43,200 more people left than came to live in Scotland. During the 2000s, net migration became consistently positive, with more people coming to Scotland than leaving every year. Net migration also increased during this decade, partly due to increased immigration from the EU, and peaked in the year to mid-2007 when 33,000 more people came to Scotland than left.

Figure 5.1: Net migration, Scotland, 1956-57 to 2016-17



Over the latest year to mid-2017, there were 23,900 more in-migrants than out migrants, meaning that migration contributed towards an increase in Scotland's population. Although net migration remains positive, the level of net migration has

reduced recently, as shown in Figure 5.1. Previously in the year to mid-2016, 31,700 more people came to Scotland than left.

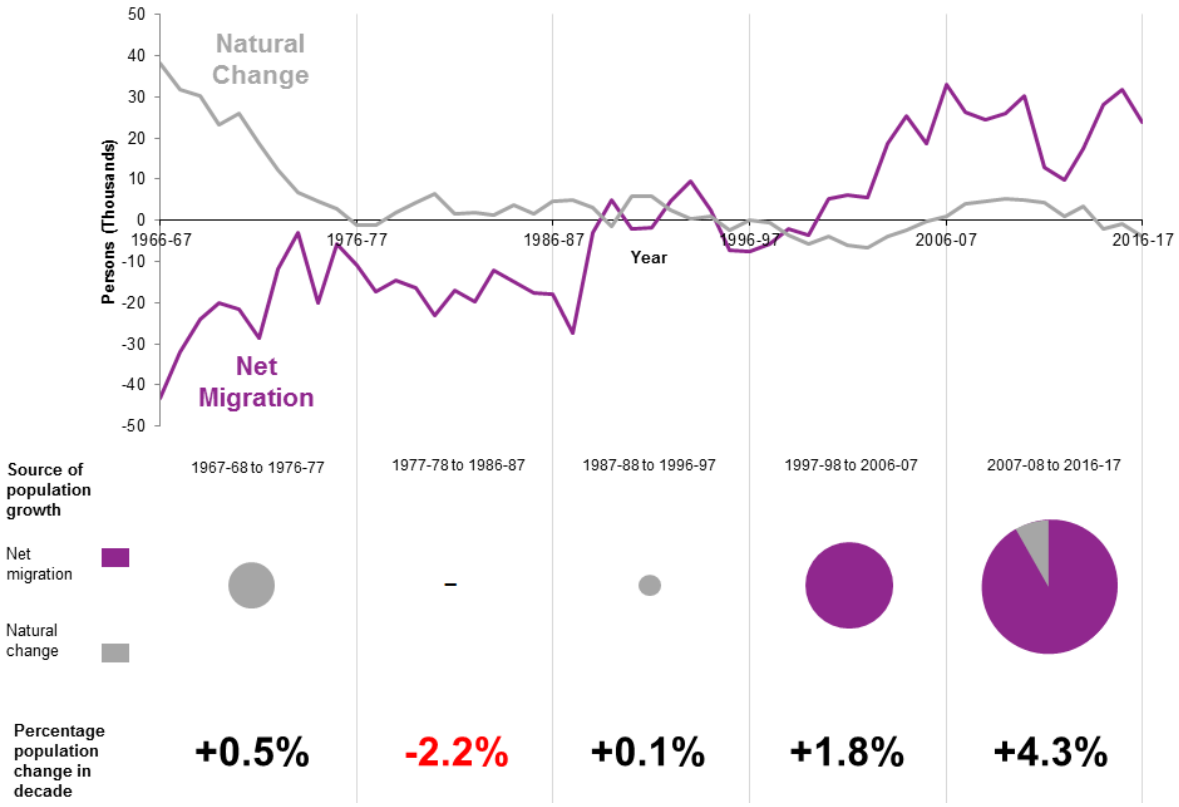
A **long term migrant** is defined as someone who changes their country of usual residence for a period of 12 months or more.

Net migration is the difference between the number of long-term immigrants coming to Scotland and the number of long-term emigrants leaving Scotland.

Scotland's changing reliance on migration for population growth

As well as through net migration, the population can also increase or decrease through natural change, which is the number of births minus the number of deaths. In the past fifty years, the role of migration in either increasing or decreasing Scotland's population has changed considerably, as shown in Figure 5.2.

Figure 5.2: Natural change and net migration, Scotland, 1967-68 to 2016-17



1967-68 to 1976-77

From Figure 5.2, net migration was negative every year in this decade, meaning more people were leaving than moving to Scotland. Natural change was the only driver of Scotland's population growth, with more births than deaths which counteracted the effect of people leaving to live elsewhere.

1977-78 to 1986-87

There was a reduction in natural change in this decade, and some years where there were more deaths than births (between 1976 and 1978) which, combined with negative net migration, resulted in the population declining during this decade.

1987-88 to 1996-97

There were some periods of positive net migration, but these were cancelled out by larger net outflows at the start and end of this decade. Natural change also fluctuated, but overall there were more births than deaths resulting in a small increase in Scotland's population in this decade.

1997-98 to 2006-07

This decade relied entirely on positive net migration for population growth, with migration consistently positive during the 2000s and increasing to reach a peak at the end of this decade. Natural change was negative (more deaths than births) in most years during this period.

2007-08 to 2016-17

In the most recent decade, net migration was positive in every year, and accounted for 92% of Scotland's population growth. Natural change was also positive (more births than deaths) for most of the decade, but accounted for a much smaller share (8%) of Scotland's population growth.

Where are migrants coming from and going to?

As well as understanding trends in overall net migration, it is also helpful to separately consider the flows of people moving between Scotland and other parts of the UK, and between Scotland and overseas. This helps understand what drives the change in overall net migration.

We can see from Figure 5.3 that in-flows from the rest of the UK have tended to always be higher than in-flows from overseas, apart from 2009-10 and 2010-11. Similarly, out-flows to the rest of the UK have consistently been higher than out-flows to overseas. Whilst the scale of migration flows to and from the rest of the UK

are generally higher than overseas flows, we can see in Table 5.1 that overall net migration (the difference between in-flows and out-flows) from overseas contributed more to Scotland's population growth (+13,400 people) than net migration from the rest of the UK (+10,500 people) over the latest year to mid-2017.

Figure 5.3: Migration between Scotland, rest of the UK and overseas, 1996-97 to 2016-17

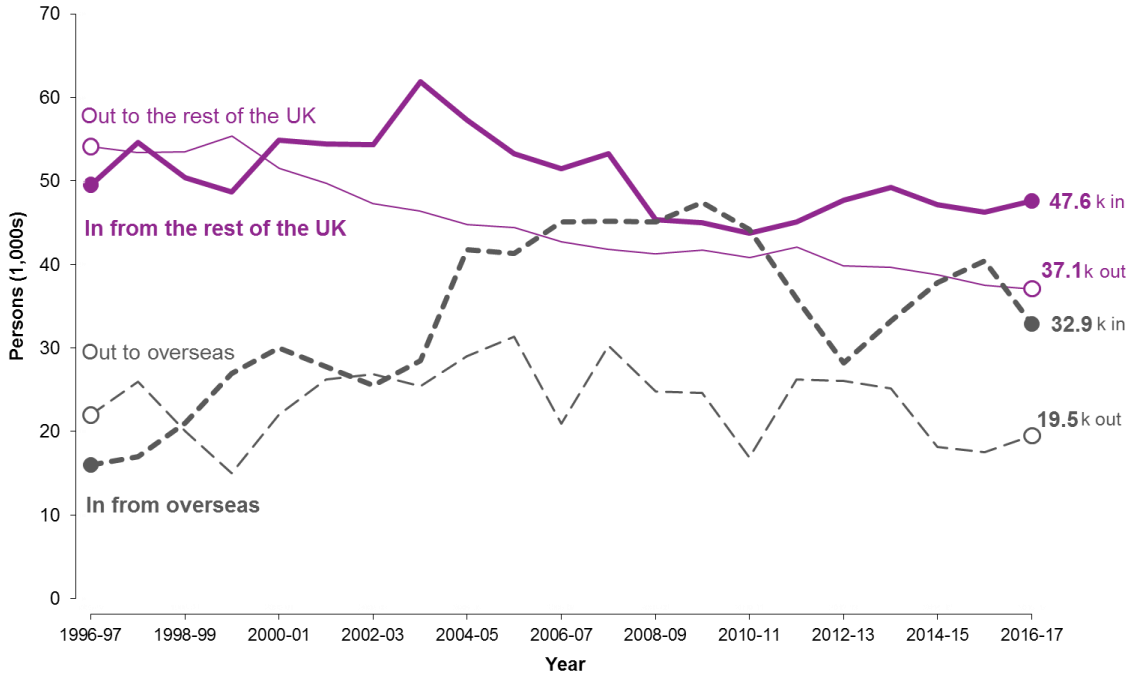


Table 5.1: Migration between Scotland, the rest of the UK and overseas, year to mid-2017

	In-flows	Out-flows	Net Migration
Rest of the UK	47,600	37,100	+10,500
Overseas	32,900	19,500	+13,400
Total	**80,500**	**56,600**	**+23,900**

Looking at change over the latest year, we have seen an increase in people moving to Scotland from the rest of the UK, and a decrease in people moving from Scotland to the rest of the UK. Over the latest year to mid-2017:

- 47,600 people came to Scotland from the rest of the UK; 1,300 more than in 2016.

- 37,100 people left Scotland for the rest of the UK; 400 fewer than in 2016.
- There was positive net migration of 10,500 people from the rest of the UK. This is higher than the comparable figure in 2016, when 8,800 more people arrived from the rest of the UK than left.

In contrast, over the latest year, we have seen a decrease in people moving to Scotland from overseas and an increase in people moving from Scotland to overseas. Over the latest year to mid-2017:

- 32,900 people migrated to Scotland from overseas; 7,500 fewer than in 2016.
- 19,500 people left Scotland and moved overseas; 2,000 more than in 2016.
- There was positive net migration of 13,400 people from overseas. While this is still positive net migration, it is lower than in mid-2016, when 22,900 more people arrived from overseas than left.

The result of the 2016 EU Referendum may be a factor in people's decision to move to or from the UK, but decisions to migrate are complex and other factors may be influencing the figures.

How do we measure migration?

- **International migration** is the most difficult aspect of population change to estimate as it is based primarily on the International Passenger Survey (IPS). This is a sample survey conducted at the channel tunnel, main ports and airports across the UK, and the sample size for Scotland is very small.
- **Migration within the UK** is calculated using patient records from the NHS Central Register (in Scotland), the Personal Demographic Service (in England and Wales) and the Medical Card register (in Northern Ireland).

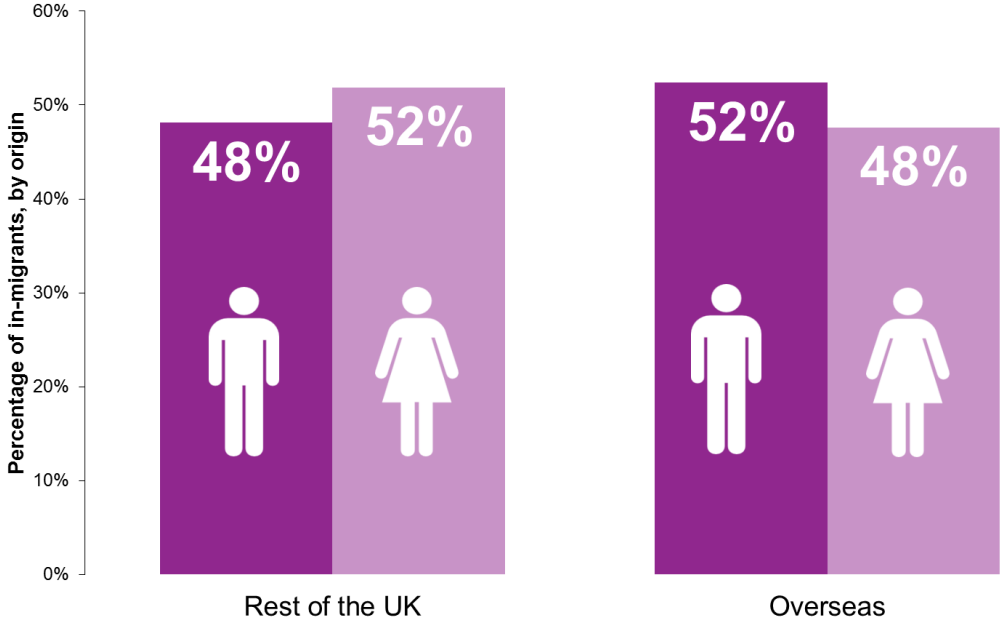
More detailed information can be found in the mid-year population estimates methodology guide.

The age and sex of migrants

It is useful to be able to understand the characteristics of people moving to and from Scotland each year, as shown in Figure 5.4 and Figure 5.5. In the year to mid-2017, slightly more males than females moved to Scotland from overseas; 52% of all moves from overseas to Scotland were male and 48% were female. In contrast, slightly more

females moved to Scotland from the rest of the UK (52% female compared to 48% male).

Figure 5.4: Sex distribution of people migrating to Scotland, year to mid-2017

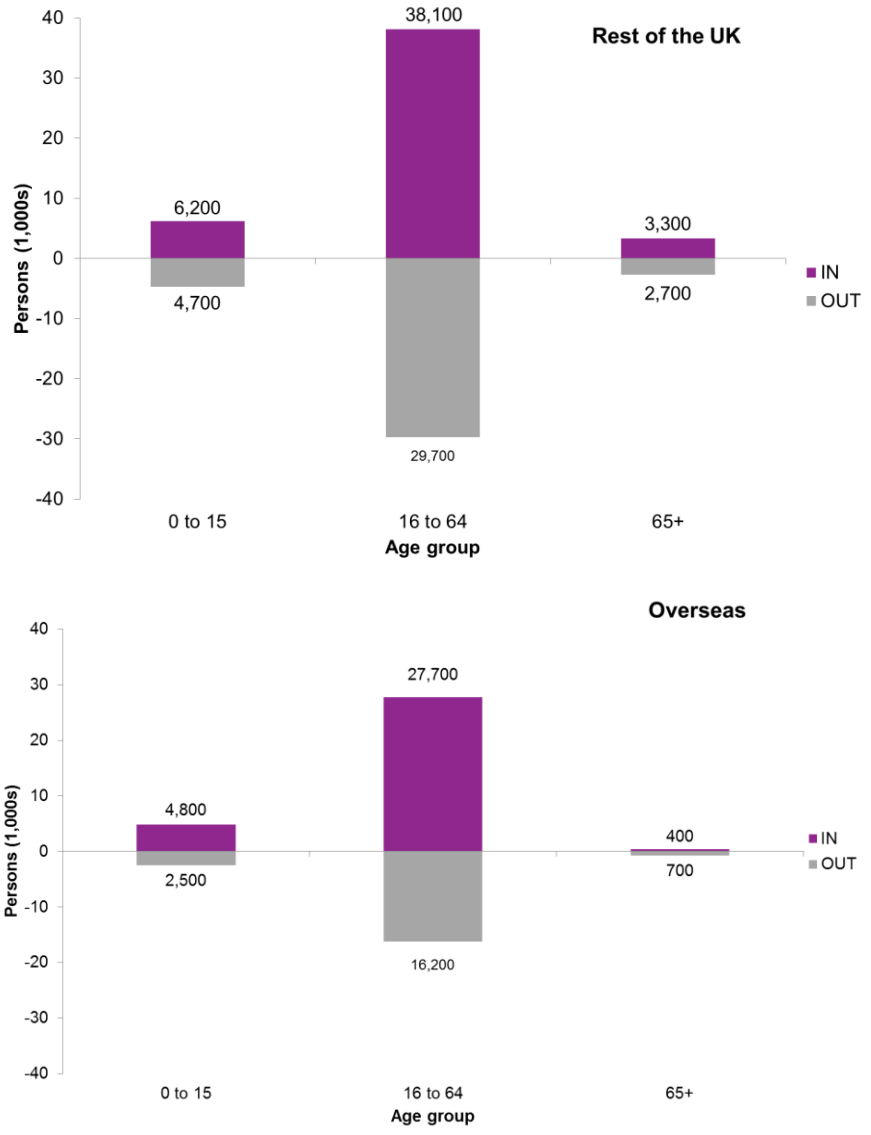


The majority of people moving to Scotland are aged 16 to 64 years. In the year to mid-2017, the median age[1] of a person moving to Scotland was 26. For people moving from the rest of the UK to Scotland the median age was 29, and for people moving from overseas to Scotland it was 24. These numbers are reflective of the fact that many young people move to Scotland each year to study and work.

In the year to mid-2017, the median age for people leaving Scotland to live elsewhere was 27. For moves to the rest of the UK and to areas overseas, the median ages were 28 and 27 respectively. These numbers are also reflective of the large volumes of young people moving for work or to study. More people aged 16 to 64 move to Scotland than leave for both overseas moves and rest of the UK moves.

[1] Median age is the age at which the population can be split into a younger half and an older half. A median age of 26 means that half the population are under 26 (or in the younger half of all 26 year olds) and half the population are over 26 (or in the older half of all 26 year olds)

Figure 5.5: Migration between Scotland, rest of the UK and overseas, by age group, year to mid-2017



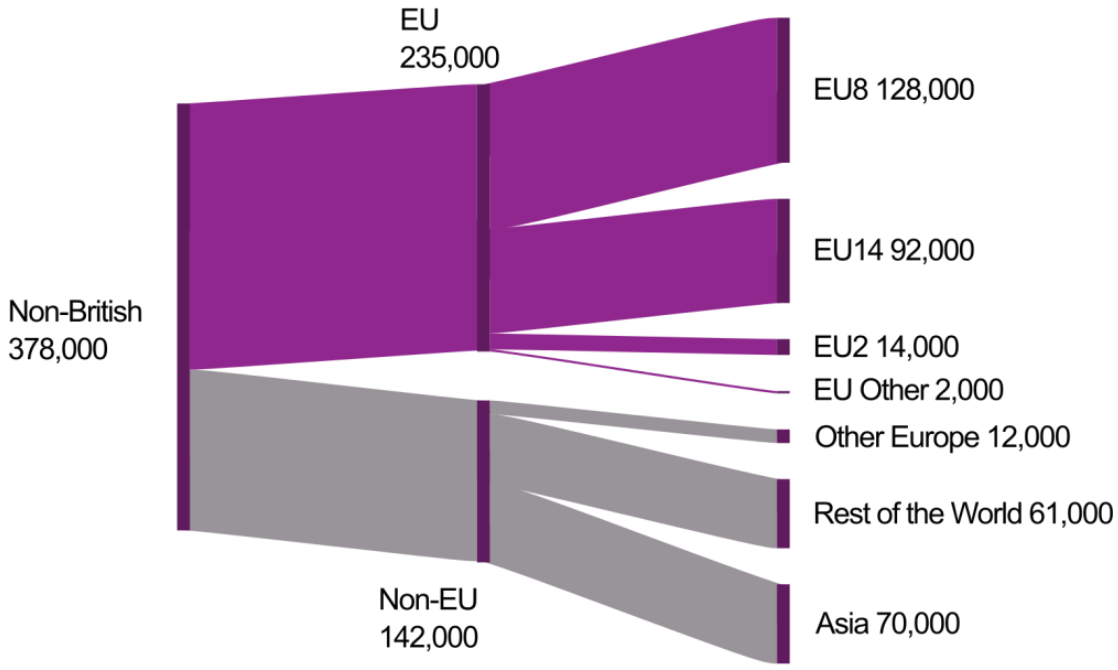
Future improvements to migration statistics

The Office for National Statistics (ONS) are leading an improvement plan for migration statistics, working with other departments across the Government Statistical Service including NRS. This aims to make better use of administrative data to understand the impact migrants have while they are in the UK, including the sectors in which they work, the communities they live in and the impacts on public services. More information can be found in ONS's migration statistics transformation update article.

Non-British nationals living in Scotland

As well as looking at flows of people entering and leaving Scotland over a period of time, it is also useful to look at the number of people currently resident in Scotland who hold non-British nationality. To do this, National Records of Scotland use data from the Annual Population Survey (provided by the Office for National Statistics) to produce estimates of the population by nationality. Respondents self-report their nationality and in cases where respondents have dual nationality the first one is recorded.

Figure 5.6: Non-British nationals living in Scotland by nationality, 2017



In 2017, there were 378,000 non-British nationals living in Scotland, accounting for 7% of the total population. Of all non-British nationals, 235,000 were EU nationals and 142,000 were non-EU nationals. Within the EU national population, the largest sub-group was EU8 nationals (Poland, Latvia, Lithuania, Estonia, Czech Republic, Slovakia, Slovenia and Hungary), with 128,000 nationals of EU8 countries living in Scotland in 2017, representing a third of all non-British nationals in Scotland. Nationals of countries in Asia made up just under half (70,000) of all non-EU nationals living in Scotland in 2017. This accounts for 19% of all non-British nationals living in Scotland.

Different measures of migration

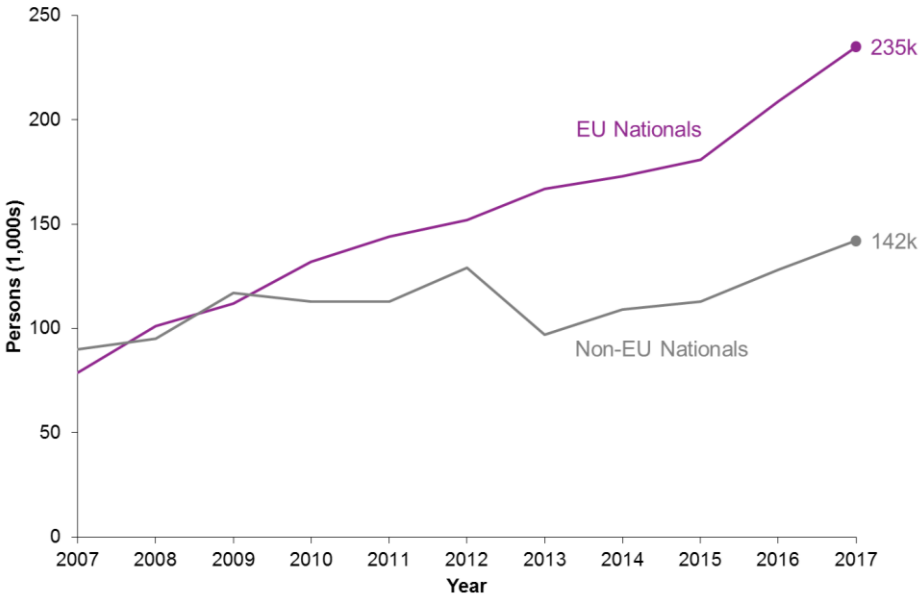
There are many sources of migration statistics that can be used to understand migration trends. The key difference between the migration statistics in this chapter are:

Migration flows – these measure the number of people moving to and from the country over a specific period, normally over a year.

Population by nationality – this measures the resident population (or "stock") of non-British nationals at a particular point in time. In this case, people may have moved to Scotland many years ago.

For more information and to access data from different sources to understand migration trends, please use our local area migration spreadsheet.

Figure 5.7: Number of EU and non-EU nationals living in Scotland, 2007 to 2017



Over the past ten years, the number of non-British nationals living in Scotland has increased from 169,000 in 2007 to 378,000 in 2017. In that time, the number of EU nationals has grown more rapidly than the number of non-EU nationals, with EU nationals now representing 62% of all non-British nationals living in Scotland, compared to 47% in 2007.

The most common non-British nationality for the usually resident population of Scotland in 2017 was Polish, as shown in Figure 5.8. There were 99,000 Polish nationals living in Scotland, representing 26% of all non-British nationals, and 2% of the total resident population. From Figure 5.9, the most common non-EU nationality was India, with 16,000 people with that nationality living in Scotland.

Figure 5.8: Most common (non-British) EU nationalities, Scotland, 2017

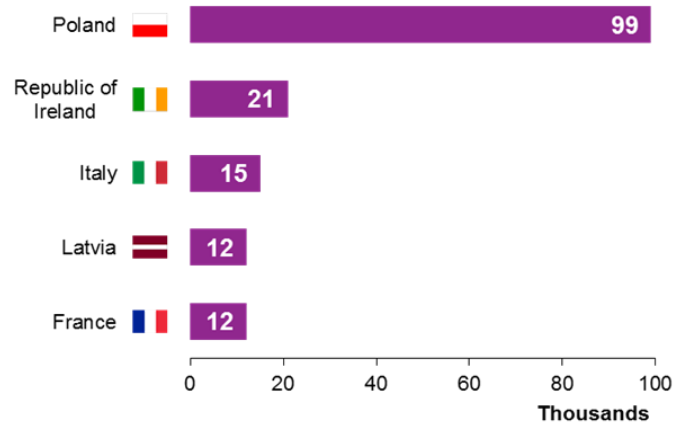
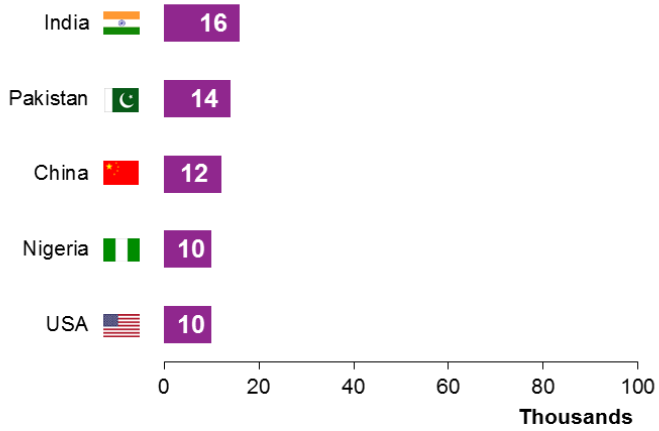


Figure 5.9: Most common non-EU nationalities, Scotland, 2017



More statistics

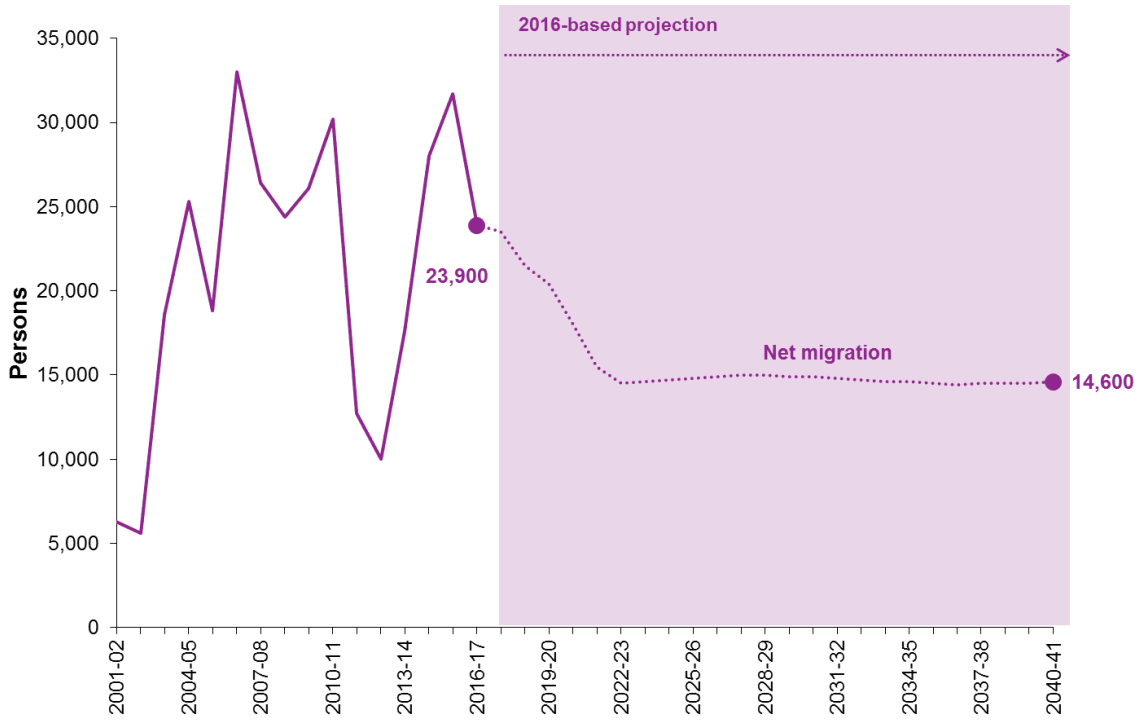
National Records of Scotland also produce statistics on **population by country of birth**; these are available on the NRS website.

The Scottish Government (SG) produces a range of **labour market statistics on EU and non-EU nationals** from the Annual Population Survey. This includes information on topics including employment rates, industry of employment and skill levels. These are available on the SG website.

Projections of future migration to and from Scotland

Assumptions about future levels of migration, as well as future levels of fertility and mortality, feed into our National Population Projections (NPP). More details about the latest 2016-based NPPs can be found in Chapter 1 - Population. This section briefly presents information on the projected future levels of migration as shown in Figure 5.10. It is important to remember that the projections are trend-based; they are not forecasts and do not take into account changes in government policy and other social and economic factors, as it is very difficult in advance to know what impact these will have. On that basis, the projections do not attempt to predict the impact of the UK leaving the EU.

Figure 5.10: Net migration, Scotland, 2001-02 to 2040-41

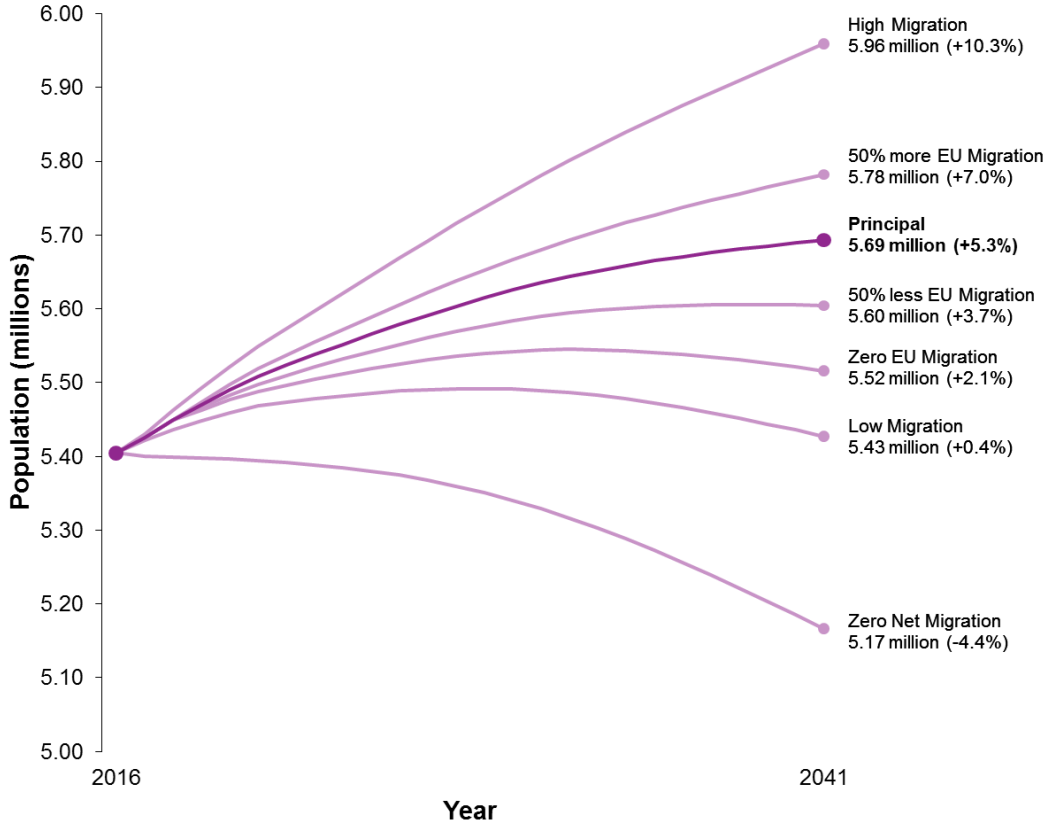


As can be seen in Figure 5.10, net migration is projected to decrease in the future but still remain positive (more people coming to Scotland than leaving). Over this same period, natural change is projected to be negative throughout (as shown in Figure 1.2 in Chapter 1 - Population), meaning Scotland's future population growth is projected to be entirely reliant on migration.

As well as the main principal projection, variant projections are created using alternative plausible assumptions. These reflect the uncertainty around demographic

behaviour and help illustrate the potential size of the population if, for example, migration was higher or lower than that assumed under the principal projection. Variant assumptions of migration can have a significant effect on the size of Scotland's population in 25 years' time as shown in Figure 5.11.

Figure 5.11: Projected population under variant migration assumptions



Under the principal projection, the population of Scotland is projected to grow by 5.3% in the 25 years between 2016 and 2041, but variant assumptions of future migration show different outcomes.

In the high migration variant, the population of Scotland is projected to increase by 10.3% to 5.96 million. The low migration variant shows a small increase of 0.4% to 5.43 million. With the zero net migration projection (where the only population change is through births and deaths), the population is projected to decrease by 4.4% to 5.17 million in 2041.

The effect the UK leaving the EU will have on migration is unknown, but the additional EU variant migration projections help illustrate the possible effects that

differing levels of migration to and from the EU will have on Scotland. In an illustrative scenario of EU migration decreasing by 50%, the population of Scotland would grow slower than in the principal projection, rising by 3.7% to 5.60 million in 2041. In contrast, if EU migration increased by 50%, the population would grow faster than in the principal projection and rise by 7.0% to 5.78 million. In a situation where there was no future EU migration, the population of Scotland would rise by 2.1% to 5.52 million, but at a slower rate than under the principal projection (up 5.3%).

How are migration statistics used?

Migration statistics are used by central and local government for reasons such as planning and monitoring of service delivery and for resource allocation purposes.

Some recent examples of use by the Scottish Government can be found in the following publications:

- The Contribution of EEA Citizens to Scotland: the Scottish Government's Response to the Migration Advisory Committee Call for Evidence on the Role of EEA Workers in the UK Labour Market - Evidence Annex.
- Scotland's Population Needs & Migration Policy: Discussion paper on evidence, policy and powers for the Scottish Parliament.

Projections of future migration to and from Scottish areas

The 2016-based sub-national population projections look at how the populations of Scotland's council areas, health boards, strategic planning areas and national parks are projected to change over the next 25 years.

Shown in Table 5.2 are the projected changes to the population through migration for the 25 year period from 2016 to 2041. Please note, projected changes in the population due to natural change, births minus deaths, are not reported in this section.

The council area with the largest projected increase through net migration is Midlothian, where the population is projected to grow by 25.4% through migration. This is projected to come from large numbers of people moving from within Scotland to Midlothian. There are only two council areas that are projected to have

net outward migration between 2016 and 2041; these are Inverclyde and the Shetland Islands. Inverclyde is projected to have inward migration from both overseas and the rest of the UK, but outward migration from Inverclyde to other areas in Scotland is projected to contribute to depopulation in Inverclyde. In the Shetland Islands, both outward migration to other areas in Scotland and outward migration to overseas are projected to decrease the population, despite relatively high levels of inward migration from the rest of the UK to the Shetland Islands.

Scotland's cities show different trends to the rest of the country. City of Edinburgh, Aberdeen City, Glasgow City and Dundee City are all projected to have high levels of inward migration from overseas, with lower levels of inward migration from the rest of the UK. They are also projected to have high levels of out-migration to other areas within Scotland.

More information about depopulation in Scotland can be found in Chapter 1 - Population, where other components of population change (such as the number of births and deaths) are also taken into account.

Table 5.2: Projected changes in population, Scottish council areas, 2016-2041

	Components of net migration			
Council Area	Overseas	Rest of UK	Within Scotland	Total change through net migration
Midlothian	-0.2%	0.8%	24.8%	25.4%
East Lothian	1.6%	3.3%	15.0%	19.9%
East Renfrewshire	-1.8%	-1.1%	21.0%	18.2%
Perth and Kinross	4.0%	4.9%	6.5%	15.4%
East Dunbartonshire	-1.7%	-0.5%	17.1%	14.9%
Moray	-2.3%	10.9%	4.9%	13.6%
Stirling	4.3%	7.0%	1.6%	12.9%
Aberdeenshire	2.0%	0.6%	8.7%	11.4%
Scottish Borders	-2.5%	8.3%	4.5%	10.3%
Angus	-0.2%	2.0%	8.4%	10.2%
City of Edinburgh	16.8%	4.9%	-11.5%	10.2%
Falkirk	0.5%	2.5%	7.0%	10.0%
South Ayrshire	-2.4%	5.7%	6.0%	9.3%
West Lothian	2.3%	1.4%	5.5%	9.2%
South Lanarkshire	-1.9%	1.4%	8.5%	8.0%
Dumfries and Galloway	-3.5%	12.4%	-1.5%	7.5%
Renfrewshire	1.2%	0.3%	5.8%	7.3%
Highland	0.3%	8.3%	-1.4%	7.2%
Orkney Islands	-2.3%	14.0%	-5.0%	6.7%
Fife	1.8%	3.4%	1.1%	6.3%
Argyll and Bute	-3.7%	14.0%	-5.3%	4.9%
Glasgow City	14.2%	1.3%	-13.2%	2.4%
North Ayrshire	-2.8%	4.7%	0.4%	2.3%
North Lanarkshire	-0.9%	1.3%	1.8%	2.2%
East Ayrshire	-2.7%	3.3%	1.4%	2.0%
Aberdeen City	16.0%	2.8%	-17.2%	1.6%
Dundee City	5.9%	1.9%	-6.4%	1.4%
Na h-Eileanan Siar	-1.9%	7.8%	-4.8%	1.1%
Clackmannanshire	-0.4%	4.3%	-2.8%	1.1%
West Dunbartonshire	-1.0%	2.1%	0.0%	1.1%
Inverclyde	0.6%	2.8%	-4.1%	-0.7%
Shetland Islands	-1.0%	6.4%	-6.5%	-1.1%

Marriages and civil partnerships

"The number of marriages in Scotland has declined steadily from over 40,000 in the early 1970s to 28,440 in 2017."

Most recent figures

- There were **28,440** marriages in 2017, a decrease of **789 (2.7%)** on 2016.
- Of these, **982 (3.5%)** were same sex marriages (a fall of **1.6%** since 2016).
- There were **70** civil partnerships, the same number as in the previous year.

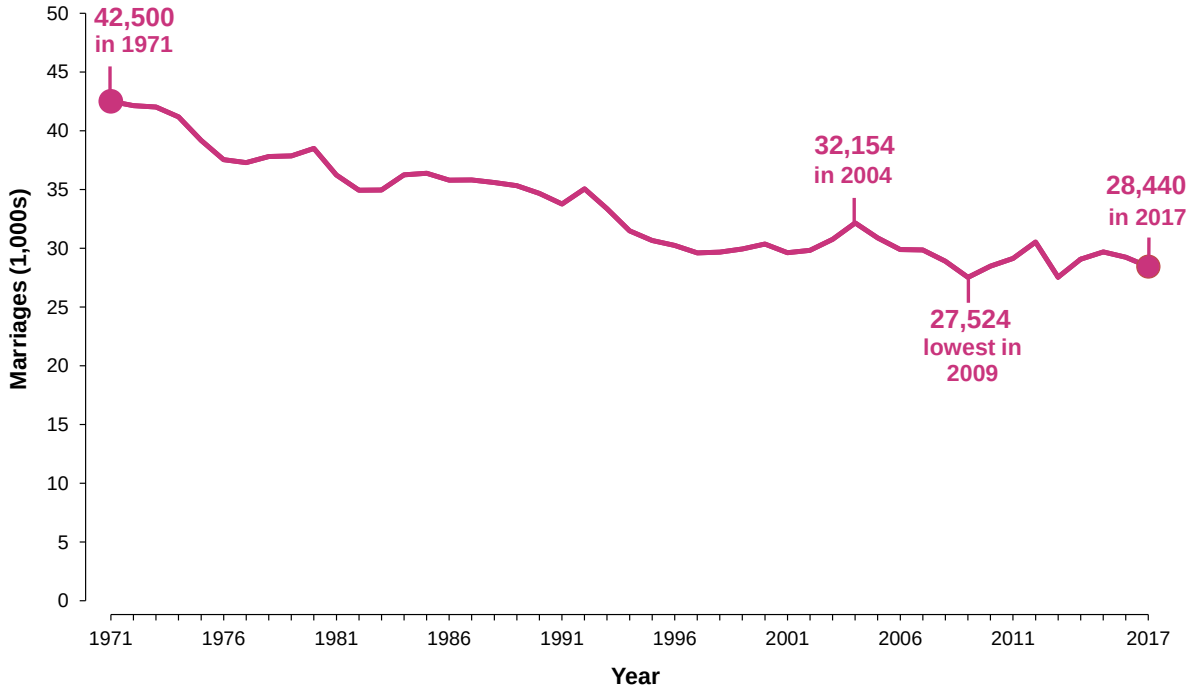
Marriages

There were 28,440 marriages in Scotland in 2017, 789 (2.7%) fewer than in 2016. Of these, 982 were same-sex marriages (involving 407 male couples and 575 female couples) following The Marriage and Civil Partnership (Scotland) Act 2014 coming into force on 16 December 2014.

Figure 6.1 shows that, following a decline from over 40,000 marriages a year in the early 1970s, the annual total levelled out at around 30,000 in the mid-1990s. The highest total recorded in recent years was 32,154 in 2004 (the highest total since 1993), whilst the highest ever recorded was 53,522 in 1940. The 2009 total (27,524) was the lowest since Victorian times, and the lowest ever recorded was 19,655 in 1858.

Around **1 in 8** same-sex marriages in 2017 were of couples who changed their existing civil partnership to a marriage (127, 13%). This is an expected fall from 56% of same sex marriages in 2015 and 17% in 2016, following the passing of the Marriage and Civil Partnership (Scotland) Act 2014.

Figure 6.1: Marriages, Scotland, 1971-2017



The information in this section covers all marriages registered in Scotland, regardless of where the couple lived. In 2017, there were 6,159 'tourism' marriages (22% of all marriages) where neither partner was resident in Scotland. This represents a slight fall in number from 6,326 (22% of all marriages) in 2016.

Marriages at Gretna

Gretna continues to be a popular venue for marriages, but the 3,461 registered in 2017 (12% of all marriages) was nearly 6% lower than the 3,671 registered in 2016. The 2017 total is the lowest annual total since 1993 and is more than a third down on the record total of 5,555 in 2004 (17% of all marriages in Scotland in 2004). Over the longer term, the number of marriages at Gretna increased from only 79 in 1974 to a peak of 5,555 in 2004. In 2017, 84% (2,905) of the marriages at Gretna did not involve a resident of Scotland.

12% of all marriages were registered at Gretna Green in 2017.

Nearly half (2,905) of 'tourism' marriages (where neither partner was resident in Scotland) in 2017 were at Gretna.

Of course, many couples who live in Scotland go abroad to be married. These marriages are not included, and only some come to the attention of the Registrar General through notification to British consular authorities.

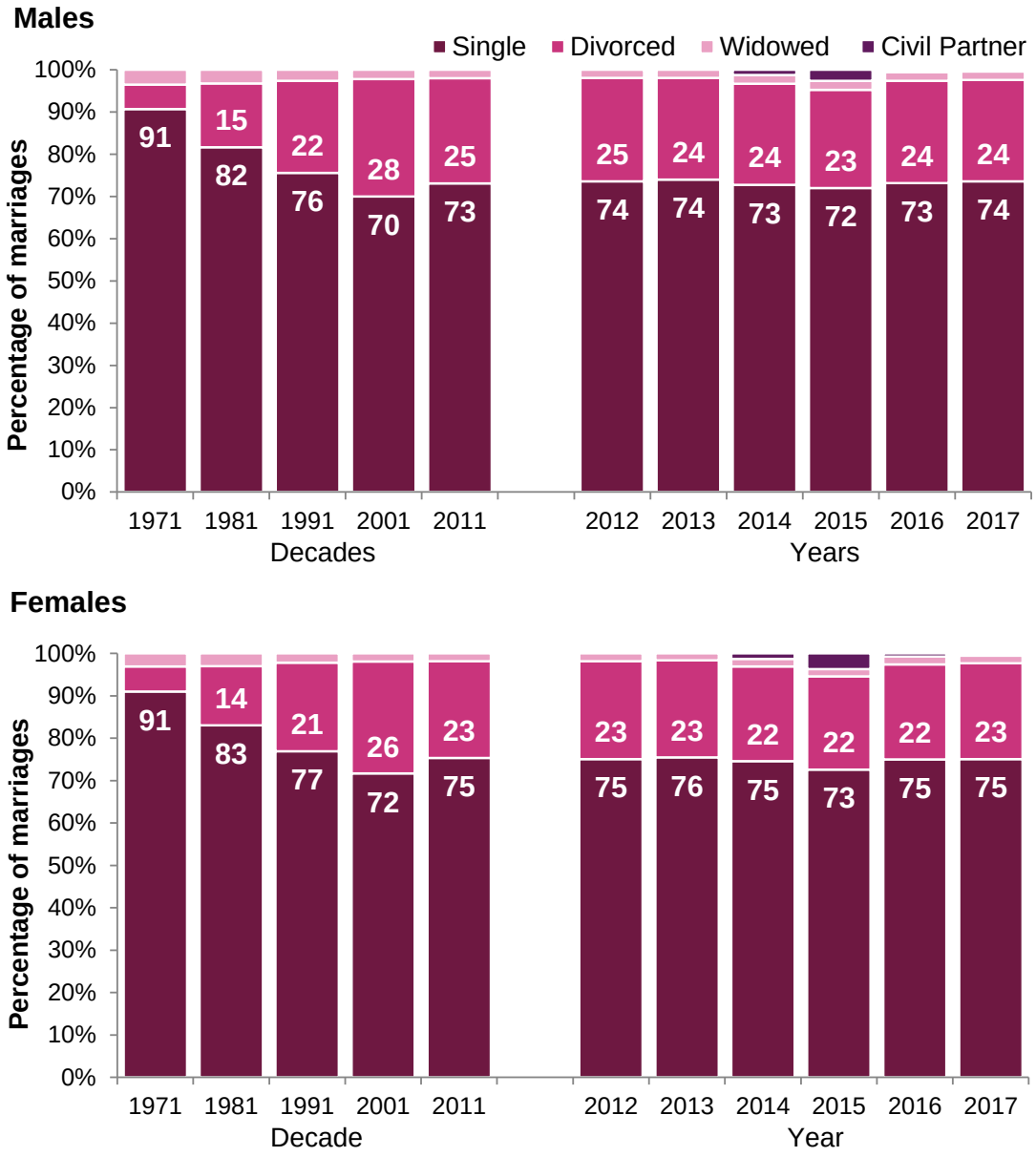
Marital status at marriage

The proportion of those marrying who had been divorced has risen since the 1970s

The percentage of people marrying who had been divorced rose from just under 6% in 1971, to over a quarter in 2001 (28% for grooms and 26% for brides). The majority of this shift is balanced by a reduction in the proportion of marriages where one of the partners had never been married.

Figure 6.2 shows the percentage of marriages by marital status at the time of marriage between 1971 and 2017. The proportion of those marrying who were divorced was 23% in 2017 (24% for males and 23% for females). The proportion of those marrying who were widowed (2% in 2017) has hardly changed since 2001. Following the introduction of same-sex marriage, the additional marital status of civil partner is now included in Figure 6.2. From 16 December 2014, couples in a civil partnership which was registered in Scotland were able to change their civil partnership to a marriage. From 31 October 2015, couples in a civil partnership registered outside Scotland were also able to change their civil partnership to a marriage. Of the 982 same sex marriages which were registered in 2017, 13% involved couples changing their civil partnership to a marriage.

Figure 6.2: Marriages, by marital status (percentages) and sex of persons marrying, 1971-2017



Note: There is a break here between two time series. 1971 to 2011 are shown for census years, and each year from 2012 is then shown. Only percentages greater than ten are shown on the bars.

Age at marriage

The average age at marriage has risen for both males and females. For first marriages, the average age of males has risen from 24.3 in the 1970s to 34.2 in 2017; the comparable figures for females are 22.5 in the 1970s and 32.5 in 2017.

Marriages by type of ceremony

Civil marriages are conducted by registrars, and they have wide discretion over the form of the ceremony, to meet couples' wishes. There were 14,201 civil marriages in 2017, accounting for just under half (49.9%) of all marriages compared to just under one-third (31%) in 1971.

Figure 6.3 shows the trends in different types of marriage ceremony. The trend in civil marriages mainly reflects a decline in the number of religious ceremonies during the past 40 years. The small increase in religious marriages during the period 1997 to 2002 was largely associated with the increase of 'tourism' marriages, of which a significant proportion were carried out at Gretna. Since then, there was a decrease in the number of religious and other belief marriages, from 16,890 in 2003 to 13,285 in 2009 although numbers have risen since then, to 14,239 in 2017 – largely due to the increase in humanist marriages.

The popularity of ceremony types has changed over time

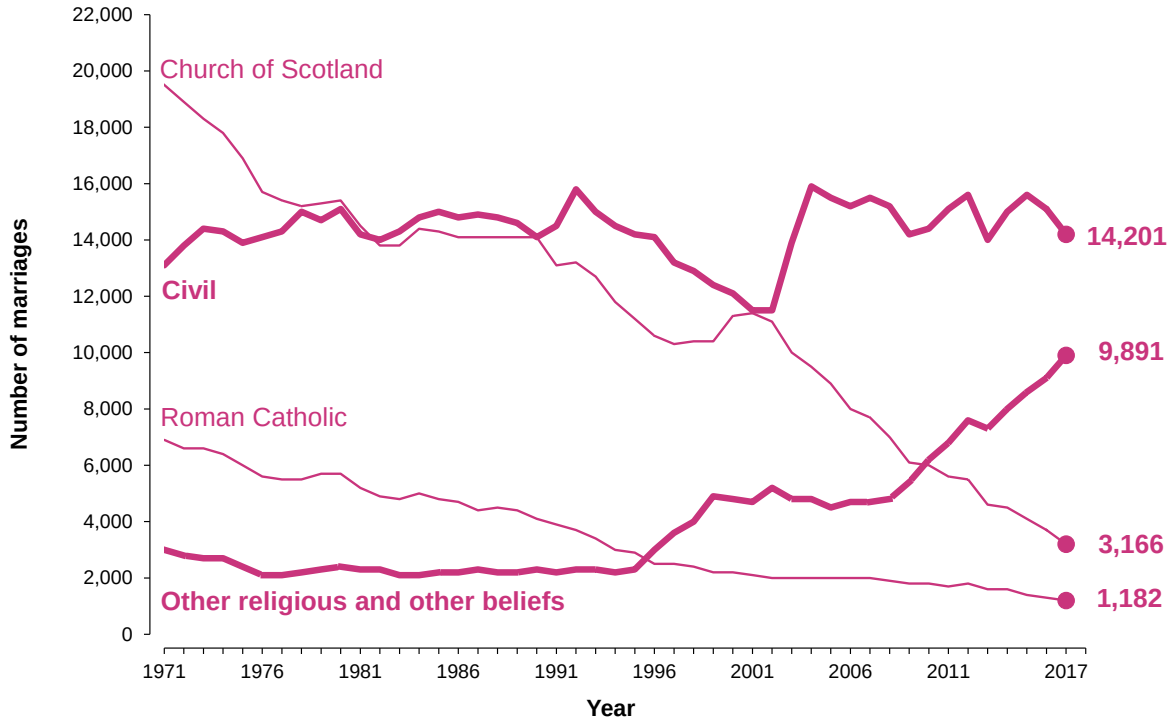
1971
1. Church of Scotland (46.0%)
2. Civil marriages (30.8%)
3. Roman Catholic (16.3%)
4. Other religious and other beliefs (7.0%)

2017
1. Civil marriages (49.9%)
2. Other religious and other beliefs (34.8%)
3. Church of Scotland (11.1%)
4. Roman Catholic (4.2%)

Religious marriages are conducted by a wide range of celebrants. The largest numbers of religious marriages were carried out by ministers of the Church of Scotland, who conducted 3,166 marriages in 2017, followed by clergy of the Roman Catholic Church, who conducted 1,182. The Humanist Society Scotland conducted 3,283 marriages, more than the Church of Scotland for the first time. The other religious and other belief bodies conducting more than 500 marriages in 2017 were Independent Humanist Ceremonies (1,176)

and Assemblies of God (686). Humanist celebrants have been authorised to conduct marriages in Scotland since 2005. In 2017, they officiated at 5,912 marriages compared with 2,486 in 2011, and 434 in 2006.

Figure 6.3: Marriages, by type of ceremony, 1971-2017



Where can civil marriages take place?

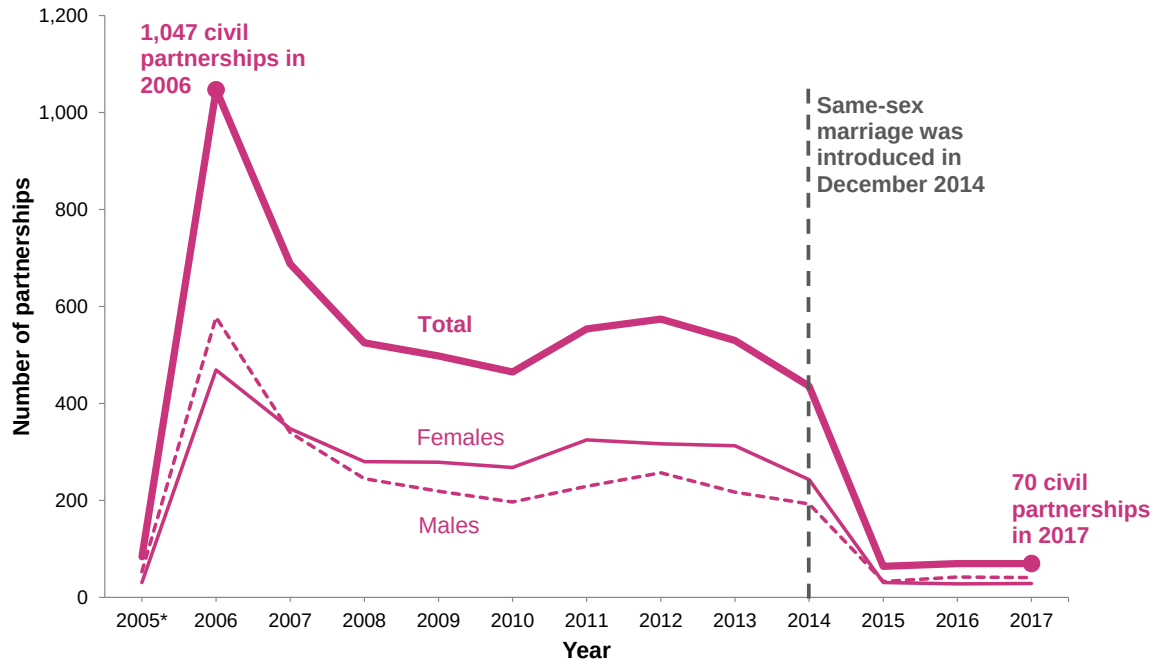
Until 2002, civil marriages could only be held in registration offices. The Marriage (Scotland) Act 2002 allowed registrars to conduct ceremonies in other approved places, from June 2002. In 2003, the first full year of these arrangements, 3,465 ceremonies were carried out at these approved places. Changes in The Marriage and Civil Partnership (Scotland) Act 2014 removed the approved place status. From 1 September 2014, civil marriage may be solemnised at a place agreed between the couple and the local registration authority, other than religious premises. This flexibility already exists in relation to civil partnership ceremonies. In addition, a religious marriage ceremony may take place anywhere agreed between the couple and the celebrant.

Civil partnerships

There were 70 civil partnerships registered in Scotland in 2017, the same number as in 2016. The Civil Partnership Act 2004, which applies throughout the UK and came into force on 5 December 2005, allows same-sex couples to register their partnership.

During 2006, the first full year of registration, 1,047 partnerships were registered in Scotland. In 2007, 688 partnerships were registered. This decrease was expected, because many long-standing relationships would have been registered as civil partnerships in the first full year of registration. The number of partnerships formed continued to fall to 465 in 2010. In 2011 and 2012 there were 554 and 574 registrations respectively; the first years to show an increase. In 2013 and 2014, there were falls in the number of partnerships formed, to 436 in 2014. This was followed in 2015 by a much larger fall to just 33 male partnerships and 31 female partnerships registered, as shown in Figure 6.4. This fall was expected following the introduction of same-sex marriages by the Marriage and Civil Partnership (Scotland) Act 2014 which came into force on 16 December 2014. Since then, the numbers have remained very low.

Figure 6.4: Civil partnerships, 2005-2017



* The Civil Partnership Act came into force on 5 December 2005.

There are no figures for divorces and dissolutions of civil partnerships in this publication, because the Scottish Government is now the only publisher of new statistics of divorces and dissolutions for Scotland.

More detailed information can be found in the Vital Events - Marriages and Civil Partnerships section or in the Marriages and civil partnership section of the Vital Events Reference Tables on the National Records of Scotland website.

Adoptions

"There were 543 adoptions in 2017- half the number of the mid-1980s, and a quarter of the number of the late 1960s."

The Registrar General recorded 543 adoptions during 2017, which is 20 (4%) more than in 2016. This is around half the number recorded per year in the mid-1980s, and around a quarter of the number recorded in the late 1960s.

Adoptions of children have been registered by law in Scotland since 1930. Today the Registrar General for Scotland registers them under the Adoption and Children (Scotland) Act 2007.

Adoptions include cases of step-parents adopting their spouse's or partner's children, and relatives adopting children of other family members, as well as people adopting children who are not related in any way to them. The figures include small numbers of foreign adoptions registered in Scotland, and parental orders granted following a birth by a surrogate mother.

Figure 7.1 shows that following a steady rise to a post-war peak of 2,292 in 1946, the total number of adoptions fell back to 1,236 in 1959 before peaking again at 2,268 in 1969. After this time, increased access to birth control and changing public attitudes towards single or unmarried parents led to a decrease in the number of children available for adoption. Since then, the annual number of adoptions declined fairly steadily to around 400 in 2000 and has been between roughly 400 and 500 in every year until 2014, and between 500 and 550 in the three most recent years.

Figure 7.1: Adoptions, Scotland, 1930-2017

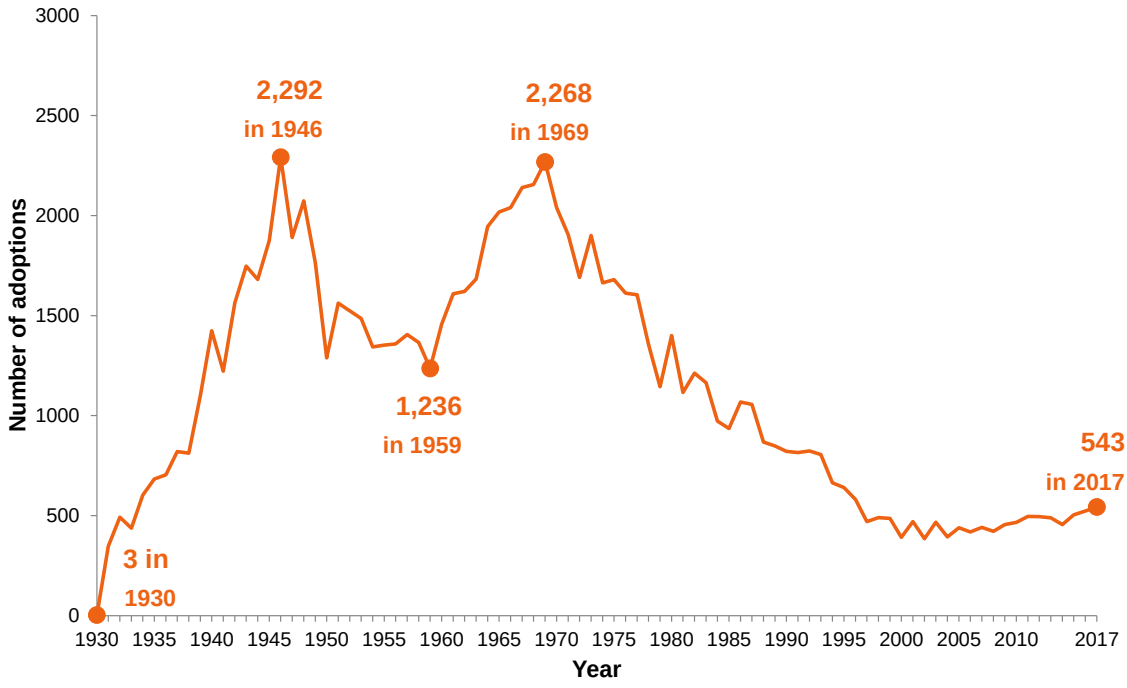
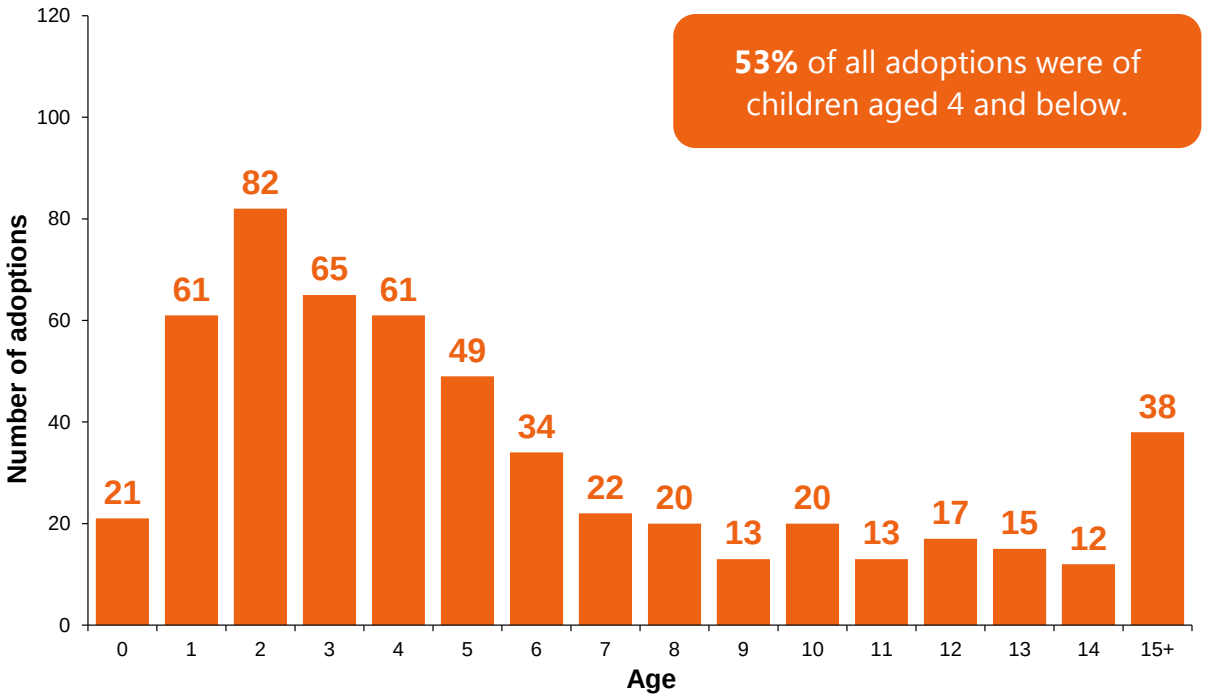


Figure 7.2 shows the children's ages. Only 15% of children adopted in 2017 were aged under two, 15% were aged two, 23% were aged three to four, 25% were aged five to nine, 14% were aged 10 to 14 and 7% were aged 15 or over.

Of the children aged under two, 79% were adopted by non-relatives. In contrast, only 13% of the 115 children aged 10 or over were adopted by non-relatives.

Of the 543 children adopted in 2017, **30%** were adopted by a step-parent and **66%** were adopted by non-relatives of the child.

Figure 7.2: Age at adoption, Scotland, 2017



More detailed information about Scotland's Adoptions can be found in the Vital Events - Adoptions section and the Adoptions chapter of the Vital Events Reference Tables on the National Records of Scotland website.

Households and housing

"In 2017 there were 2.46 million households in Scotland, 6% more than in 2007."

There were 2.46 million households and 2.60 million dwellings in Scotland in 2017.

Over the last 10 years the number of households in Scotland has grown by around **145,000 (6%)**.

Vacant dwellings and second homes

Across Scotland, 96% of dwellings were occupied in 2017, while 3% of dwellings were vacant and 1% were second homes. Remote rural areas had the highest percentage of dwellings that were vacant and second homes (5.2% and 6.6% respectively, compared to 2.9% and 0.5% in large urban areas).

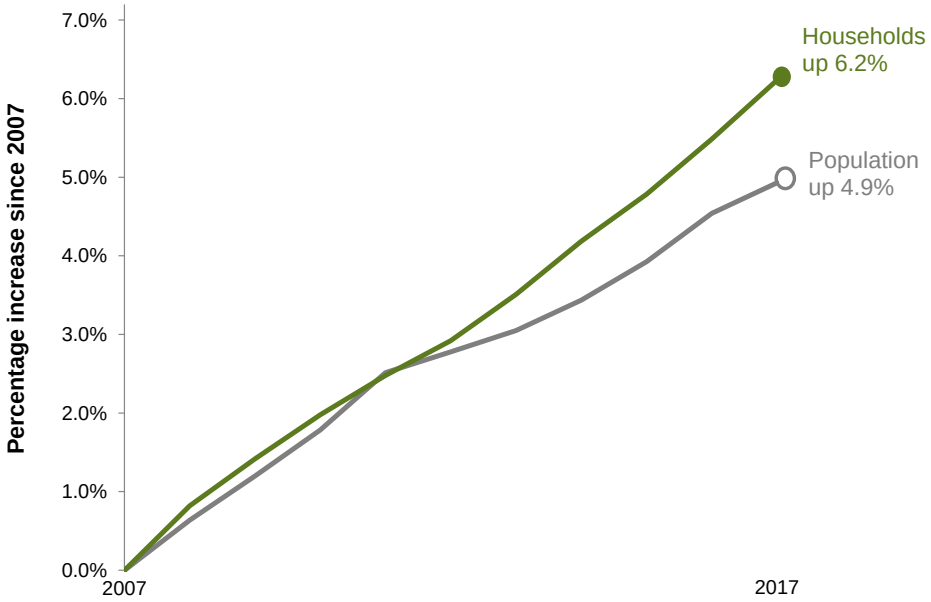
Households vs. dwellings – what's the difference?

- A 'dwelling' refers to the accommodation itself, for example a flat or house.
- A 'household' refers to a group of people living together in a dwelling.
- The number of dwellings in an area include second homes and vacant dwellings, some dwellings may contain more than one household.

Trends in households

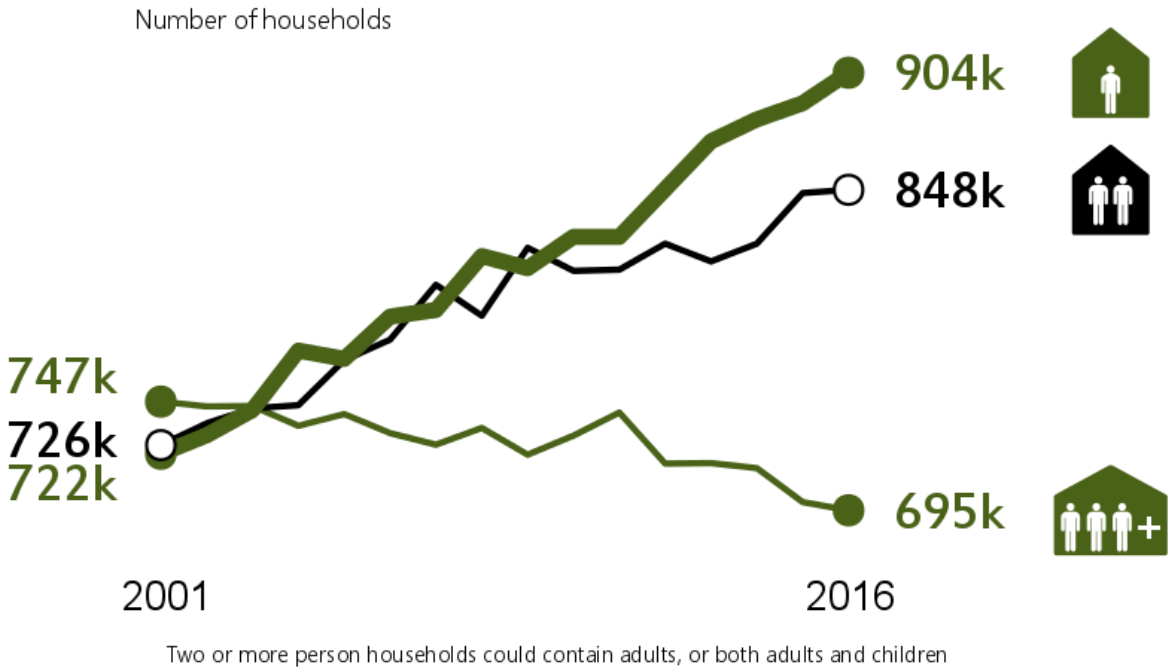
Figure 8.1 illustrates that over the last decade the increase in number of households (6.2%) was faster than the increase in population (4.9%).

Figure 8.1: Trends in households and population, June 2007 to 2017



The growth in households has been faster than the population growth because people are increasingly living alone or in smaller households. One person households have become the most common type in recent years, as shown in Figure 8.2. Average household size has been on a downward trend for many years, though at a slower rate in more recent years. Over the last decade, the average household size (number of people per household) fell from 2.19 people per household in 2007 to 2.16 people per household in 2017. These changes are partly due to the ageing population, as elderly people are more likely to live alone or with just one other person.

Figure 8.2: Change in household types in Scotland, 2001 to 2016



Source: National Records of Scotland (NRS), Scottish Household Survey (SHS) 2016.

Looking to the future, Scotland's population is projected to increase, and the greatest increase is projected to occur in the older age groups. Household size is projected to fall further to 2.02 people per household by 2041. Consequently, the household projections (which are based on past trends) project the number of households in Scotland increasing further, to 2.76 million by 2041, an average annual increase of around 12,700 between the years 2016 and 2041.

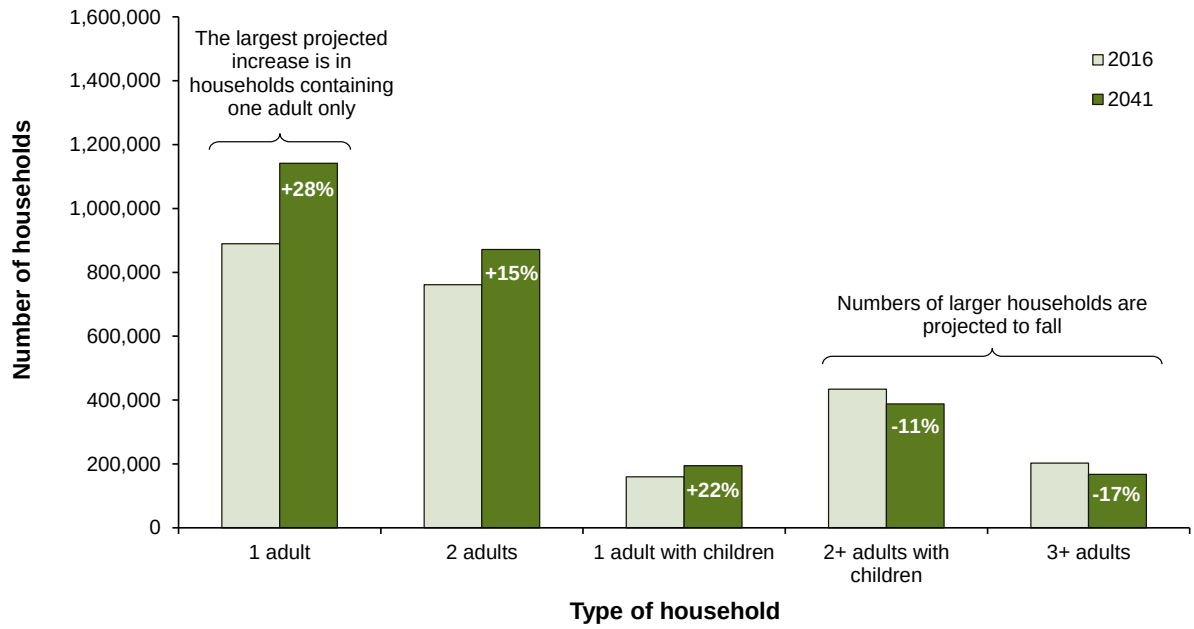
The number of households in Scotland is projected to increase to **2.76 million** by 2041.

Projected changes in household type

The numbers of some household types are projected to increase more than others by 2041, as illustrated in Figure 8.3, which compares the projected number of households of each type in 2016 and 2041.

The largest projected increase in households (in both number and percentage terms) is for those which contain one adult only. Almost a quarter of people aged 16 or over are projected to live alone in 2041 (24%), compared to 20% in 2016. The numbers of households containing two adults only and one adult with children are also projected to rise. In contrast, numbers of larger households are projected to fall.

Figure 8.3: Households in Scotland by household type, 2016 and 2041



Projected changes in age group

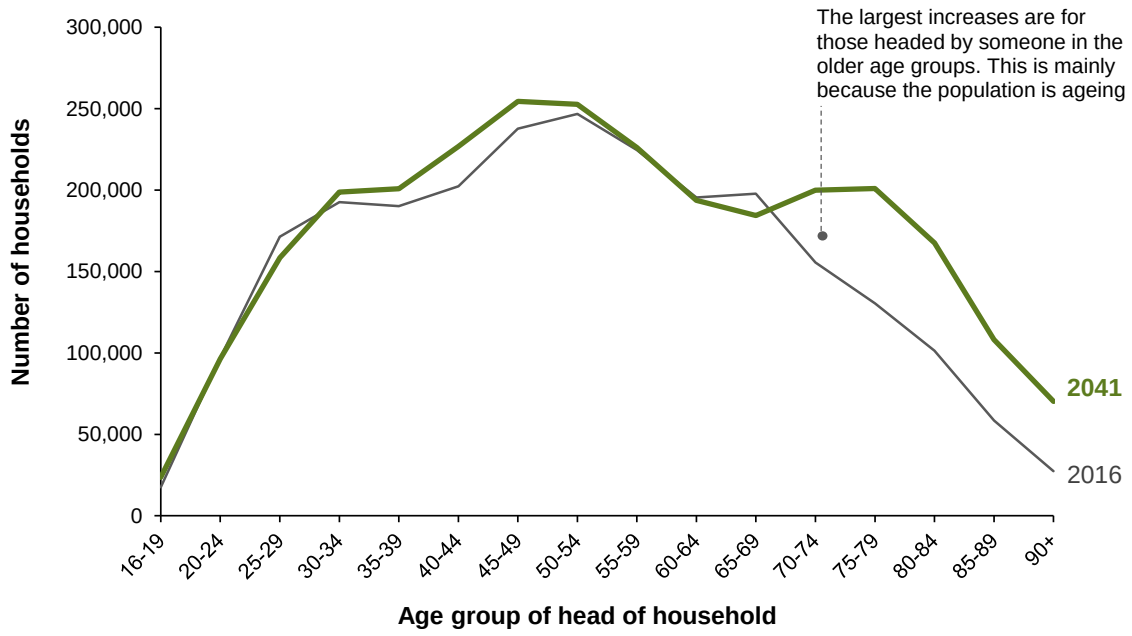
The 'head of household' is the first person included on the census form, unless that person was aged under 16 or was not usually resident in the household. Figure 8.4 shows the projected number of households in 2016 and 2041, by the age of the head of household.

The number of households headed by older people is projected to rise, reflecting the ageing population in Scotland. The number of households headed by someone aged 65 or over is projected to increase by 39% between 2016 and 2041, to 931,200

households. The increases are particularly large in the oldest age groups, with the number of households headed by someone aged 85 or over projected to more than double from 85,900 to 178,500. In contrast, households headed by someone aged under 65 are projected to increase by just 3%, to around 1.83 million.

Older people tend to live in smaller households. By 2041 there are projected to be 464,500 people aged 65 and over living alone, an increase of 37% from 339,800 in 2016. Increases are particularly large in the oldest age groups (85 or over) where the number of people living alone is projected to be more than twice as high by 2041 (an increase of 108%, from 65,400 to 136,100).

Figure 8.4: Households in Scotland by age of head of household, 2016 and 2041



Variation in trends in household numbers within Scotland

The number of households has grown in every council area over the 10 years to 2017. The areas with the greatest increase in households in percentage terms have been Midlothian (an increase of 14.8%, 5,000 households) and the Orkney Islands (an increase of 12.8%, 1,200 households). City of Edinburgh has seen the largest increase in terms of absolute numbers (15,600 households, an increase of 7.2%).

Most council areas also saw a reduction in average household size over the last decade. However, in City of Edinburgh and Glasgow City, average household size was initially falling but then started to increase after the economic downturn began in

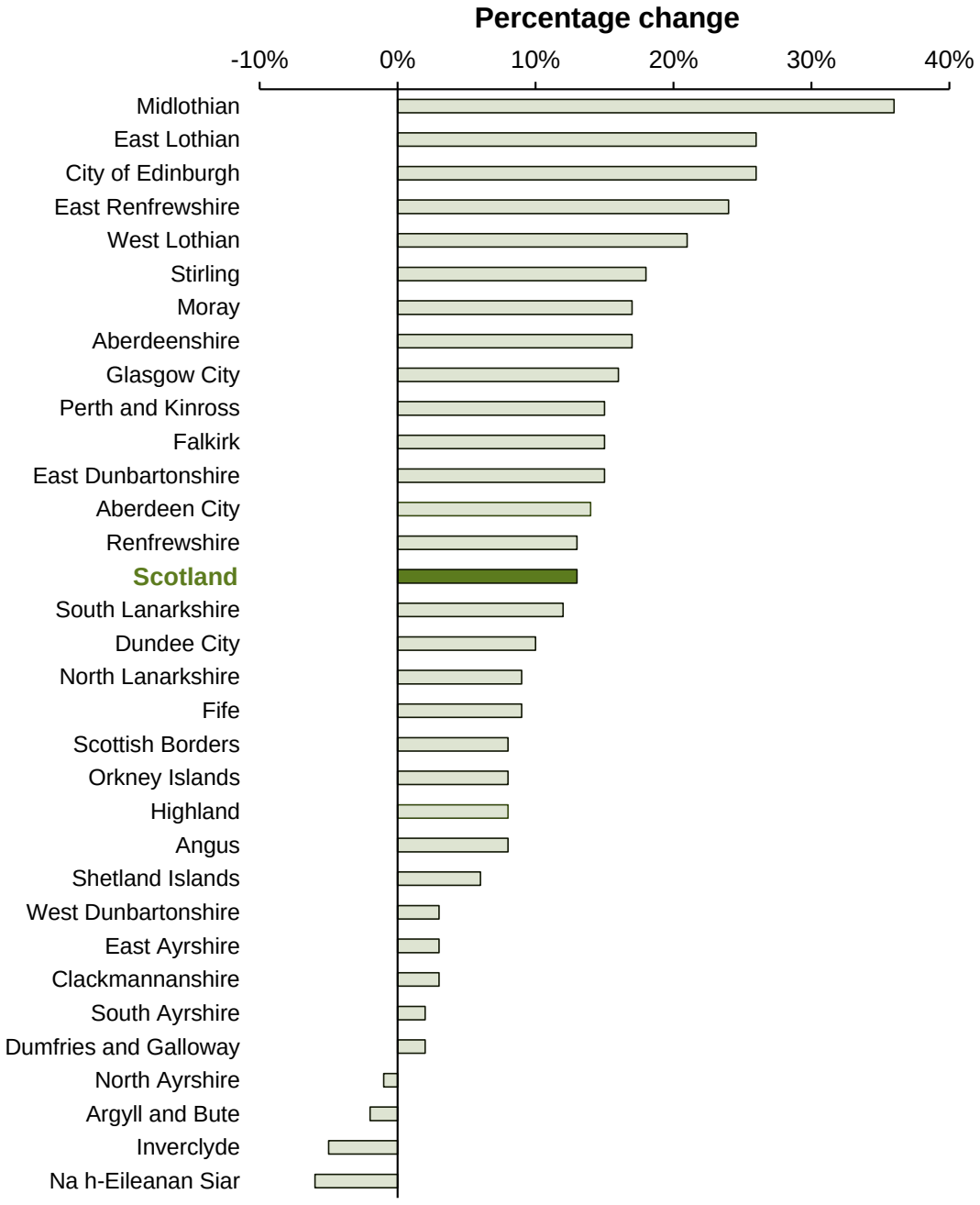
2007/08. This pattern was also observed in Aberdeen City until 2015 since when average household size fell markedly, from 2.10 in 2015 to 2.04 in 2017.

The number of households is projected to increase in almost every council area over the 25-year period from 2016 to 2041, as shown in Figure 8.5. The largest percentage increases are in Midlothian, East Lothian and the City of Edinburgh (36%, 26% and 26% respectively). In contrast, household numbers are projected to fall in Na h-Eileanan Siar (6% decrease), Inverclyde (5%), Argyll and Bute (2%) and North Ayrshire (less than 1%). These figures are based on projections of past trends.

Alternative methods of estimating households

National Records of Scotland is developing alternative methods of producing household estimates from administrative data sources. This research work was discussed at an event organised by the Administrative Data Research Network in March 2018.

Figure 8.5: Projected percentage change in the number of households by council area, 2016 to 2041



More detailed information about Scotland's households and housing, including estimates and projections, can be found in the Households section on the National Records of Scotland website.

Statutory registration

"Each year since 2007, around 97% of records have been created error free in Scotland."

Overview

Within National Records of Scotland (NRS), Registration is responsible for:

- The administration of births, deaths, still-births, marriages, civil partnerships and gender recognition, as well as statutes relating to the legal preliminaries to marriage/civil partnership and solemnisation of civil marriages
- IT systems which enable the electronic capture and distribution of information for registration purposes
- The professional training and development of registrars, and support for their progress towards the longstanding registrar's qualification, the Certificate of Proficiency in the Law and Practice of Registration in Scotland.

How does the process work?

Each of the 32 local council areas in Scotland is a registration district. Councils operate their registration service from a single office or multiple sites, depending on the size of the council area. Registrars are appointed and remunerated by each local authority, which appoints registration staff for their registration district as they deem necessary, receiving policy and process guidance from NRS, as well as extensive IT support.

More than 98% of all civil status events are recorded by registrars using a secure network (the Forward Electronic Register – FER). Remaining events are recorded manually by home-based registrars, and these manual records are then transcribed into FER. Outputs in all cases are register pages, extracts and computer data. Each year since 2007, around 97% of records have been created error free by registrars across the 32 councils.

Every entry in the registers of birth, still-birth, death, marriage and civil partnership is also examined individually by District Examiners. These staff quality assure information recorded by registrars, and make strategic visits to registration districts during the year. Once they have been examined, register pages are sent to NRS, where they are digitally imaged and made available to family history researchers in New Register House and more widely through a secure network to computerised registration offices. The original records are stored permanently in NRS.

How is Registration data used?

- **Public -** By members of the public to attest to the true occurrence and details of different life events.
- **Statistics -** As a key data source for the demographic statistics produced by NRS.
- **Family history -** As the base for future family history research.
- **Benefits to society -** To provide significant input to the promotion of positive social goods (such as public health, justice and medical research) and the prevention of social ills (forced marriage, fraud, the subversion of immigration law).
- **Government systems -** It underpins the NHS Central Register (NHSCR) and is shared widely with a range of other government departments, such as the Department for Work and Pensions via the Tell Us Once scheme, and HMRC as part of the tax-free childcare and child benefit data verification schemes.

Staffing

After many years as an integral part of Registration Division, the Registration IT team have formally moved to become part of a centralised NRS IT function following recent structural changes.

After a number of years below full-capacity, we also now have a full team of District Examiners in place and are set to eliminate the existing backlog of examinations and restore the examination process to its established schedule. This will enable us to undertake a full round of strategic visits to support councils over the coming year, as well as undertaking the examination workload.

Promotion of civil marriage, Registrar training

Working with the Association of Registrars of Scotland, we formed and continue to operate a working group to improve public understanding of civil marriage in Scotland. This includes activity to promote civil marriage, dedicated registrar-led training sessions, clarification of aspects of marriage policy and contribution to thinking on significant issues such as the qualifying requirements for authorised celebrants. The workshops have used successful examples of the new freedoms and

possibilities of civil marriage to enable councils across Scotland to see the potential for better and greater provision of marriages, and to feel more confident in promoting their marriage service on the wider stage.

Over the next period, we shall continue to work with stakeholders on helping to define the qualifying requirements for organisations putting forward celebrants to be authorised to solemnise marriages in Scotland. When completed and introduced, these qualifying requirements should bring consistency and predictability to a marriage landscape which can at the moment seem complex and challenging.

Qualifications

The Certificate of Proficiency in the Law and Practice of Registration in Scotland is recognised as the professional qualification for registration staff by the Association of Registrars of Scotland (ARoS), the Convention of Scottish Local Authorities (CoSLA) and NRS. The certificate is awarded by a joint Examination Board consisting of representatives of these three organisations. It was inaugurated in 1937 and the first examination was held in 1938.

This year we have progressed work to introduce the first electronic sitting for the examination. This has been delivered since the 1930s in a similar paper format, and we have worked with a number of stakeholders to ensure the new system is user-friendly for both candidates sitting the exam and examination setters and markers. Using a PDF model and the Knowledge Hub as a vehicle, we plan to hold the first ever electronic sitting in November this year.

Policy and process developments

Over the last year we have also engaged with policy colleagues in Scottish Government on a wide range of developing issues, from the gender recognition process and recognition of non-binary people to reviews of legislation affecting children (and registration issues within this) to the future of civil partnerships. While policy has not been finalised in these areas, we will continue to work on registration process and detail to ensure the Registration service is properly engaged with coming developments, and supported across policy, process, IT and training fronts to deliver any potential changes.

Next steps

Over the coming period, a key piece of work will be to scope and establish a review of the future of Registration in a digital context. This will examine all aspects of registration, from registrar training and employment to policy, legislation and IT support, including any potential eRegistration component, and seek to ensure the service is put on a sustainable footing for the long term.

What is the NHS Central Register?

Background

The National Health Service Central Register (NHSCR) has been in existence since the 1950s and originates from the population register taken by the Registrar General Offices across the UK in 1939 at the outbreak of World War Two to help facilitate activities such as child evacuation, conscription and rationing. Following the war and the establishment of the National Health Service (NHS) inflation of General Practitioner (GP) patient lists quickly became an administrative problem as the NHS had no central record of the population to ensure that patients were only registered with one doctor at a time. To address this, the 1939 population register was used to create the NHSCR to help the new NHS manage patient registrations. Its primary purpose since then has been to help ensure that the movement of patients between NHS Health Boards are properly recorded and to trigger the transfer of patient's medical record to their new GP practice.

The NHSCR was established in the 1950s to help the new NHS manage patient registrations – ensuring patients were only registered with one doctor at a time.

The NHSCR is now used to help ensure that the movement of patients between GP practices and NHS Health Boards are properly recorded – a key way of monitoring internal migration in Great Britain.

What does the NHSCR contain?

The name National Health Service Central Register is somewhat misleading as it does not contain medical records, it contains a limited set of demographic information to allow it to carry out its purpose:

- NHS Number - for babies born in Scotland, the civil registration number of their birth, or a number given to a patient who was born outside Scotland but who registers with a Scottish doctor;
- Community Health Index (CHI) number – another identifier used by the NHS in Scotland;
- Unique Citizen Reference Number (UCRN) – a unique, anonymous number associated with an individual;
- Surname, forenames and any previous names;
- Mother's birth surname;
- Sex;
- Date and place of birth;
- Postcode and address reference number;
- Unique Property Reference Number (UPRN) – a unique number associated with a property;
- Date of enlistment and discharge for Armed Forces personnel;
- Current and any previous Health Board (or health authority in the rest of the UK) area of GP registration (and equivalent information for Armed Forces personnel and their families);
- Medical research information for people who are registered as having had cancer, or are part of an approved medical research project; and
- Date of death or when contact with the patient was lost.

Operating the NHSCR

The Registrar General creates and maintains the register under Section 57 of the Local Electoral Administration and Registration (Scotland) Act 2006 (LEARS) and may add additional information under Schedule 1 of the Act. The Registrar General may share information from the register in ways specified under Schedule 2 of the Act.

The NHSCR is primarily maintained by changes to GP records in Scotland and birth and death records from the civil registration system. Anyone who was born or died in Scotland, or registered with a GP in Scotland, is included on the NHSCR.

Why is the NHSCR useful?

Benefits to the NHS:

- **Quality assuring patient registration -** The NHSCR acts as a Scottish hub for information on births, deaths and changes to GP registrations across the UK. This assists the NHS with patient identity verification, the prevention of fraud and in the administration of all parts of the health service.
- **Enabling cross-border patient moves -** Where a patient moves in or out of Scotland from/to the rest of UK the NHSCR triggers the health boards to send patient medical record envelopes to the new board.

Benefits to citizens:

- **Improving online access to public services -** The **myaccount** service has been developed, and is managed, by the Improvement Service on behalf of the Scottish Government. It allows citizens to access a growing range of services provided by the NHS and local authorities.
- **Tracing Service -** Certain organisations including solicitors, the police and charities may approach the NHSCR to help them trace individuals. NHSCR may only disclose the fact the individual is on the register or fact and date of death.

Benefits to society:

- **Supporting important medical research -** Information regarding individuals who are part of a research study may be shared with bona fide researchers following a rigorous application process.
- **Contributing to essential statistics describing Scotland -** The NHSCR is the most complete source of information on the size of the population between censuses and so is used in NRS population statistics and internal migration statistics as well as contributing to Census planning and preparation.
- **Supporting research using linked data -** NHSCR data can be used to link together multiple administrative datasets. Once data is linked, the personal identifiers can be removed. This allows researchers to undertake their project without being able to identify individuals, preserving privacy. Research using linked data follows an established Data Linkage Framework using the Guiding Principles for Data Linkage.

Burden of Disease in Scotland

Invited Chapter

"The burden of disease is generally greater in more deprived areas, and that burden is more likely to be fatal."

Ian Grant, Oscar Mesalles-Naranjo, Grant Wyper, Jade Kavanagh, Elaine Tod, Colin Fischbacher, Gerry McCartney, Diane Stockton

Introduction

Burden of disease studies use a single measure which combines estimates from two individual metrics: Years of Life Lost (YLL) due to premature mortality and Years Lived with Disability (YLD) due to time spent living in less than ideal health. The measure used to describe the overall burden of disease is called the disability-adjusted life year (DALY).

Disability-Adjusted Life Year (DALY) in Burden of Disease

The DALY measures the time lost to both morbidity and mortality:

- Fatal burden measured by **YLL** (years of life lost because of early death)
- Non-fatal burden measured by **YLD** (years lived with disability (i.e. years lost because they are living in less than ideal health)

The following figure shows the overall DALY for people living in a block of flats for illustrative purposes.

Imagine a block of flats where 10 people live.

One **20-year-old man** died suddenly from a heart attack while exercising. His life expectancy was **77.6 years**, so he lost **57.6 years of life.**

77.6 Life expectancy – **20** current age

= 57.6 Years of life lost

One **80-year-old woman** died of a stroke. Having lived to this age, her life expectancy was **89**, so she lost **9 years of life.**

89 Life expectancy – **80** current age

= 9 Years of life lost

One **45-year-old man** had a type of meningitis which limited his activities a great deal. He took **seven weeks** to recover, but didn't suffer any long-term effects after that. This amounted to **0.02 lost years** of healthy life.

Seven weeks of illness with a high level of impairment.

= 0.02 Years lived with disability

One **60-year-old woman** had severe COPD that limited her a great deal all year round. This amounted to **0.41 lost years** of healthy life.

12 months lived with a severe condition and a high level of impairment.

= 0.41 Years lived with disability

Total DALYs (Years of life lost + years lived with disability) added to the overall disease burden for Scotland by the people in this block of flats

57.6 + 9 + 0.02 + 0.41 = 67.03

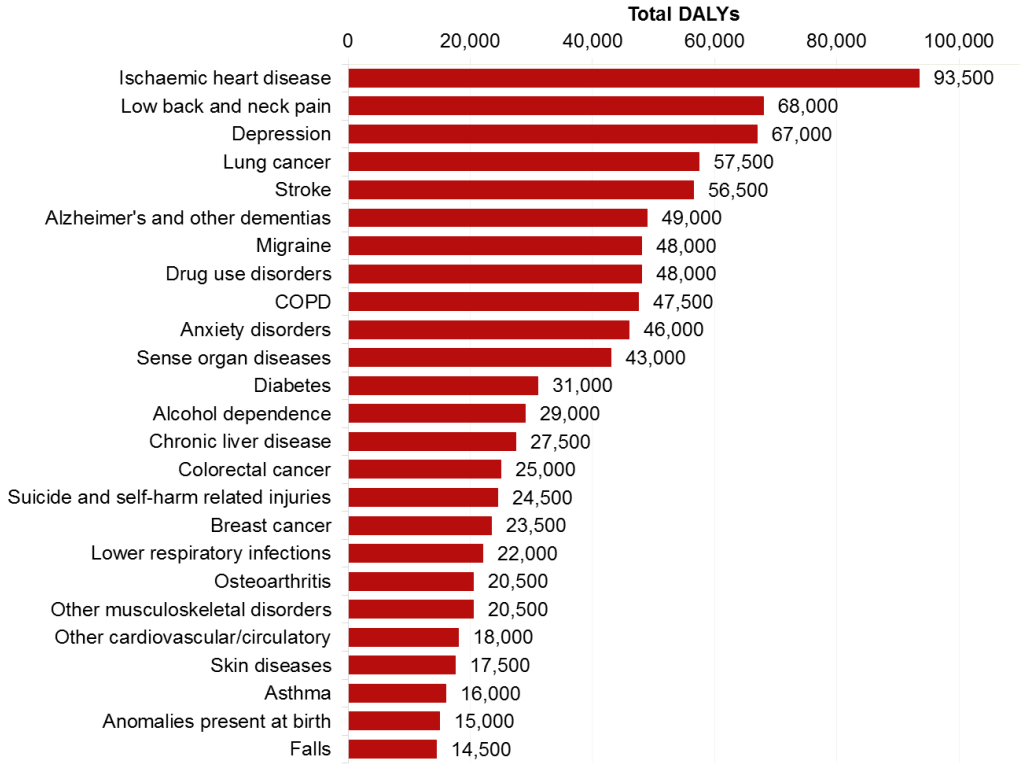
In any given year, the DALY sums the years lost due to people dying early in that year (YLL) and the proportion of that year lost due to living in less than ideal health (YLD). The years spent in less than ideal health are calculated based on duration, severity and the level of disability, which varies by cause of disease or injury. So, in the

example above there are 57.6 + 9 = 66.6 years lost due to people dying early and 0.02 + 0.41 = 0.43 of a year (approximately 5 months of the year) where the residents of the block of flats are living in less than ideal health.

The Scottish Burden of Disease Study has published DALYs by cause of disease and injury, and by different demographics (such as age, gender, geographical area, and level of deprivation). We calculated estimates of burden for 132 causes of disease and injury as defined by the Global Burden of Disease (GBD) study. The key headline results were that the broad groupings of cancer (neoplasms), mental and substance use disorders, cardiovascular disease, neurological disorders and musculoskeletal disorders were responsible for two-thirds of overall burden. There were 25 specific diseases and injuries that account for over 70% of overall burden (see Figure 10.1).

Overall, 25 specific diseases and injuries account for over 70% of disease burden in Scotland.

Figure 10.1: Burden of disease (DALY) ranked by individual diseases with the highest burden, Scotland, 2016.



Note: DALY figures rounded to nearest five hundred.

Further details on the methods and results can be found on the ScotPHO website, alongside work looking at the impact of alcohol on burden of disease. This invited chapter considers (1) the impact of re-distributing ill-defined deaths to a specific cause in the Scottish Burden of Disease Study, and (2) relative and absolute socio-economic inequalities in burden in Scotland.

Re-distribution of ill-defined deaths (IDDs) to more precise and meaningful causes

One of the key components of a Burden of Disease Study is the fatal burden (YLL). This is calculated as the years of life lost due to dying prematurely. To estimate how many years were lost, we subtracted the age at death from each person's remaining life expectancy at that age (estimated from 2014-16 Scottish life tables).

Each death was allocated to a cause of death extracted from the death certificate, and in common with other burden of disease studies, we reclassified ill-defined deaths (IDD) to other more precise and meaningful causes. IDDs are deaths where the causes recorded by doctors on death certificates are thought not represent precise underlying causes of death. This is usually because more detailed information about the cause of death was not available to the doctor. IDDs are also sometimes known as 'garbage codes'.

Redistributing ill-defined deaths results in 10-12% of deaths being re-allocated to a specific cause of death.

The percentage of deaths that were ill-defined in Scotland was around 10-12% (yearly variation). IDDs are more common amongst deaths in women than men, although there has been an increase in recent years in the proportion of deaths that are ill-defined for men. Those aged over 75 years accounted for 65% of all IDDs in absolute terms because of the greater number of deaths in that group. Overall, around 50% of IDDs are accounted for by the following (see Table 10.5 for ICD10 codes):

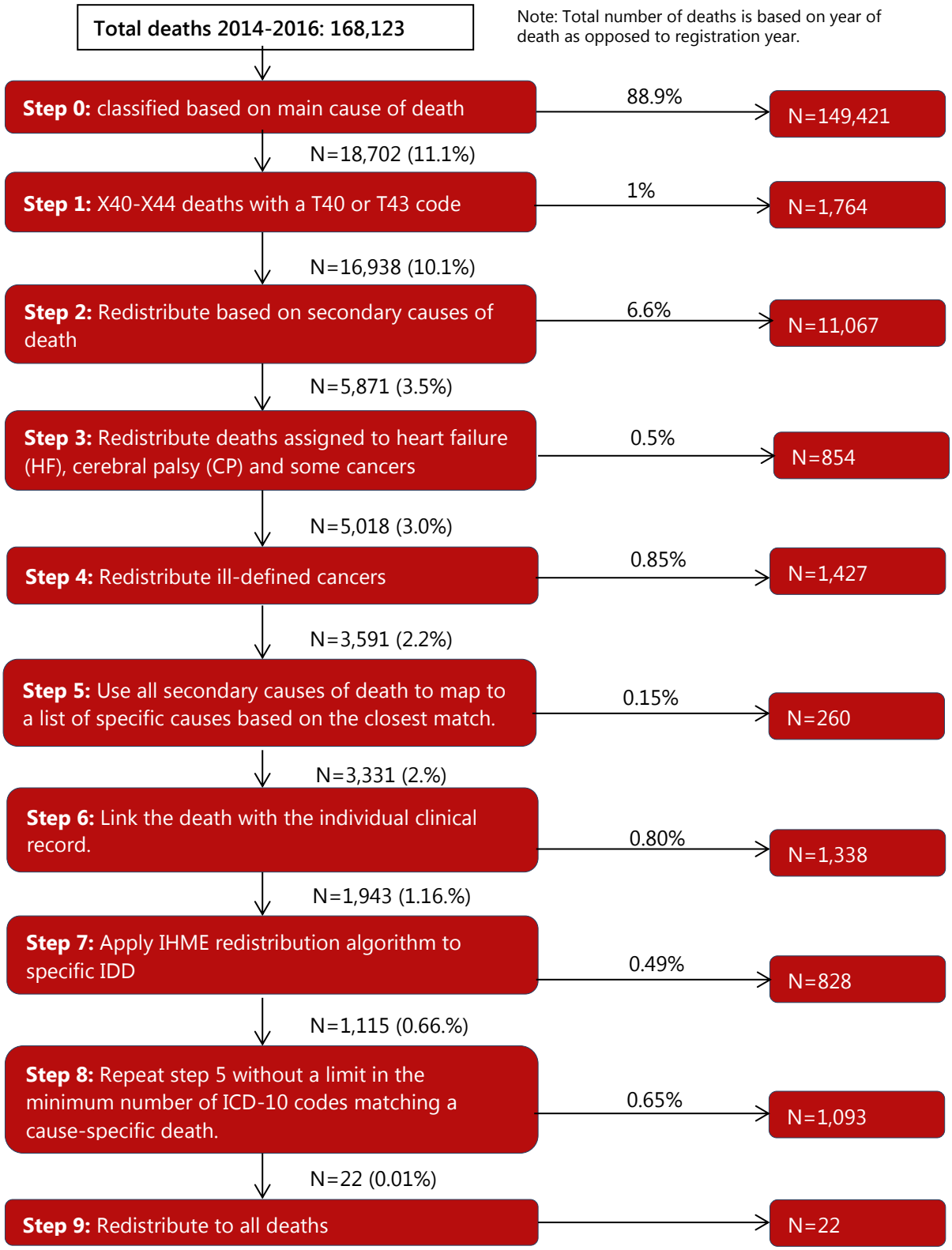
- Malignant neoplasm of other and ill-defined sites;
- Heart failure and other ill-defined cardiovascular conditions, (including cardiomegaly, other pulmonary heart diseases, disease of pulmonary vessels, unspecified, systolic (congestive) heart failure; and disseminated intravascular coagulation;
- Other specified respiratory disorders;

- Streptococcal, severe and other sepsis related infections; (including gas gangrene and gangrene not elsewhere classified; toxic shock syndrome; staphylococcal infection, unspecified site);
- Pneumonitis due to solids and liquids;
- Other and unspecified diseases; including unspecified bacterial and infectious diseases, endocrine, nutritional and metabolic diseases; and mental and behavioural disorders.

All deaths must be assigned to a specific cause in burden of disease studies. The Institute for Health Metrics and Evaluation (IHME) are the producers of the Global Burden of Disease study (GBD[2]), and they use an algorithm that defines a set of IDD types, each of which is redistributed to a number of meaningful causes using either fixed coefficients for the whole population or with different redistributions by age and/or gender strata. Where the cause of death is ill-defined the process aims to estimate the most likely detailed cause of death based on clinical knowledge and on information about the distribution of disease in a country. The IHME algorithm is based exclusively on the underlying cause of death recorded in the death certificate, alongside the age and gender of the deceased. Given that in Scotland the death certificate contains a number of contributory causes of death and that, in the case of the Scottish Burden of Disease study, we can link the death with individual clinical records, we redistribute IDD to specific causes using all ICD-10 codes available in the death certificate and, for a small number of cases, the information available in the individual clinical record.

[2] Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, Vos, Theo et al. The Lancet , Volume 390 , Issue 10100 , 1211 – 1259

Summary of the redistribution steps and the percentage of deaths re-distributed in each step



The enhanced method used by the Scottish Burden of Disease Study (SBoD) compared to our adaptation of the IHME algorithm impacts a number of diseases: for 2014-16, it decreases substantially the count of deaths redistributed to cancers, drug use disorders, self-harm, foreign body and road injuries, COPD, other digestive disorders and most of the cardiovascular conditions except for atrial fibrillation. It increases substantially the count of deaths redistributed to lower respiratory infections, atrial fibrillation, Alzheimer's and other dementias, diabetes, chronic kidney disease, and endocrine, metabolic, blood and immune disorders (see Table 10.1). The large differences in re-allocation for drug use disorders and self-harm are explained by the tighter definitions used in the Scottish Burden of Disease (SBoD) study compared to IHME.

Table 10.1: Redistributed causes of death in 2014-16 (the table shows the different re-allocation to the causes with the highest number of re-allocated deaths)

Cause of death	SBoD (N)	IHME %	SBoD %
Alzheimer's and other dementias	623	0.97%	11.04%
Ischaemic heart disease	550	10.59%	9.75%
Chronic obstructive pulmonary disease	378	9.76%	6.70%
Lower respiratory infections	364	3.65%	6.45%
Chronic kidney disease	317	2.81%	5.62%
Stroke	287	5.81%	5.09%
Diabetes mellitus	230	0.73%	4.08%
Atrial fibrillation and flutter	218	0.12%	3.86%
Lung cancer	173	5.11%	3.07%
Other cardiovascular/circulatory diseases	145	4.37%	2.57%
Endocrine, metabolic, blood, and immune disorders	124	0.36%	2.20%
Colorectal cancer	110	4.23%	1.95%
Chronic liver disease	108	1.17%	1.91%
Urinary diseases and male infertility	98	0.72%	1.74%
Alcohol use disorders	95	0.22%	1.68%
Drug use disorders	95	10.06%	1.68%

Note: this shows the N and % of IDDs re-allocated to each specific cause of death (i.e. 623 (11.04%) of IDDs were re-allocated to Alzheimer's disease and other dementias, whereas in using IHME algorithm only 0.97% of IDDs were re-allocated to this cause of death).

All the YLL results presented in the Scottish Burden of Disease (SBoD) publications include re-distributed deaths. This means that estimates of YLL from the Scottish Burden of Disease study will always be different to published National Records of

Scotland (NRS) figures due to the re-distribution of ill-defined deaths and also due to differences in the life table used to calculate each person's remaining life expectancy at their age at death. SBoD estimates of YLL in Scotland are published elsewhere : in summary, the health problems that cause the most fatal burden in Scotland include deaths due to ischaemic heart disease, lung cancers, chronic obstructive pulmonary disease, stroke, Alzheimer's and other dementias.

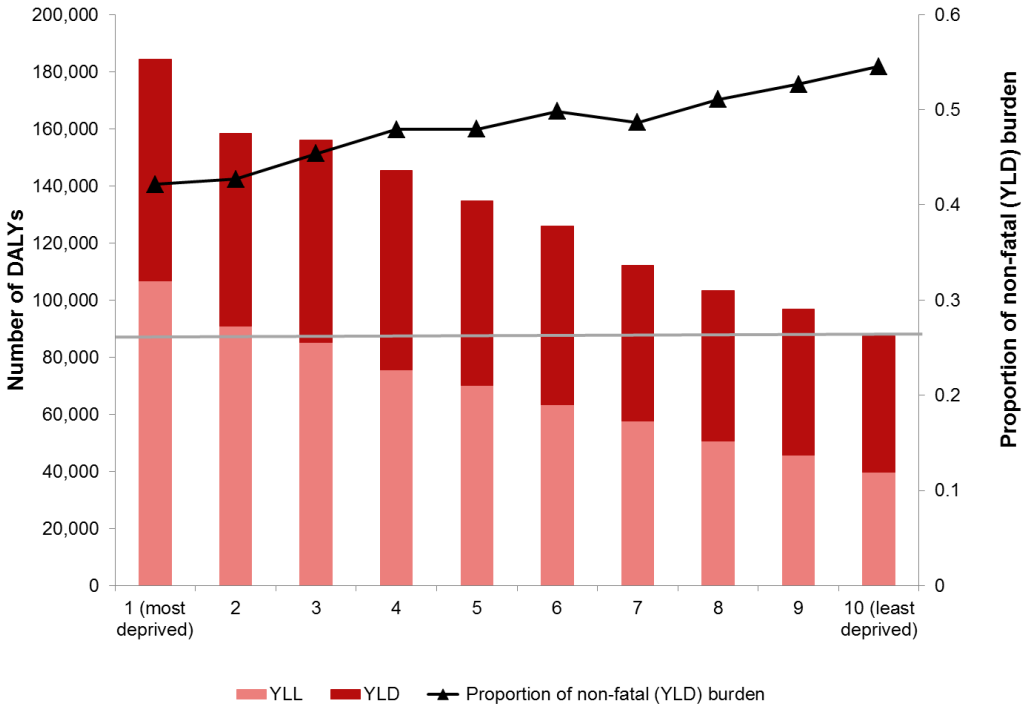
Health inequalities in the disease burden in Scotland

The Scottish Burden of Disease study used the Scottish Index of Multiple Deprivation (SIMD 2016) to analyse patterns of inequality in the burden of disease in Scotland between people living in the areas of greatest and of least material deprivation. The results are based on the average of three consecutive years (2014-2016) to reduce the effect of annual fluctuations, and standardised rates are based on national population data for 2016 and the 2013 European Standard Population.

The burden of disease is generally greater in more deprived areas, and that burden is more likely to be fatal.

Published results showed that for most of leading causes of disease burden in Scotland, the overall burden (DALYs) was greater in the most deprived decile compared with the least deprived decile (Figure 10.2). The results also indicated that burden was more likely to be non-fatal (compared to fatal) with decreasing deprivation (see % non-fatal black line in Figure 10.2). Overall, the least deprived areas in Scotland experienced only half of the burden experienced by the most deprived areas (see the grey reference line in Figure 10.2), and the whole burden in the least deprived areas (fatal and non-fatal) was lower than the fatal burden in the most deprived areas.

Figure 10.2: Burden of disease by Scottish Index of Multiple Deprivation (SIMD 2016) decile, Scotland, 2014-16



Generally, the non-fatal and fatal burden represent similar proportions of the overall number of DALYs. YLD is the component which is directly affecting a person's quality of life. Another way to represent a YLD is in terms of "burden free proportion of the year". In a situation of no ill-health each individual has a reference level of 1 year (52 weeks) spent in perfect health in the year. When looking across areas of deprivation we consider the 'excess' burden - that is, the total burden that would have been avoided if all deprivation deciles had the same age and gender rates of non-fatal burden as those in the (10%) least deprived areas of Scotland. This non-fatal burden we deem to be avoidable (although it might not seem realistic that we could achieve these levels for many decades). For these purposes, the non-fatal burden in the least deprived areas is set as the reference level of ill health.

The reference levels of non-fatal burden increase with age. For example, men aged 15-24 years spend on average 91.7% of time (47.7 weeks a year) in perfect health. The reference (least deprived) level of time lost to ill-health (i.e. the burden that is deemed unavoidable for the purposes of this analysis) is 3.9% of time (2.0 weeks) and the excess level of time lost to death or ill-health on top of the reference level, for someone living in the most deprived areas, is 4.4% of time (2.3 weeks). Men aged 65

and over lose on average 3 weeks a year to ill-health in the least deprived areas, and an additional 8.3 weeks a year on top of this if they live in the most deprived areas (see Table 10.2 and Figure 10.3).

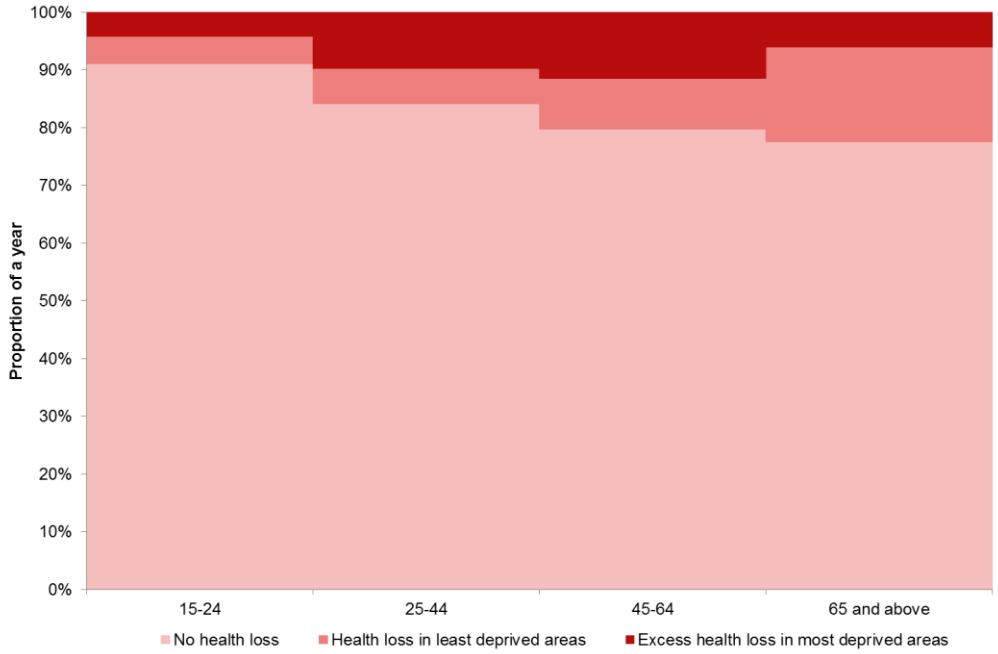
YLD are simply the number of days of ill-health within a year, summed up over all the individuals in Scotland, and expressed in terms of years.

Table 10.2: Burden of morbidity (YLD) in Scotland and time spent in excess ill health (in most deprived areas) by gender and age-group, 2014-16

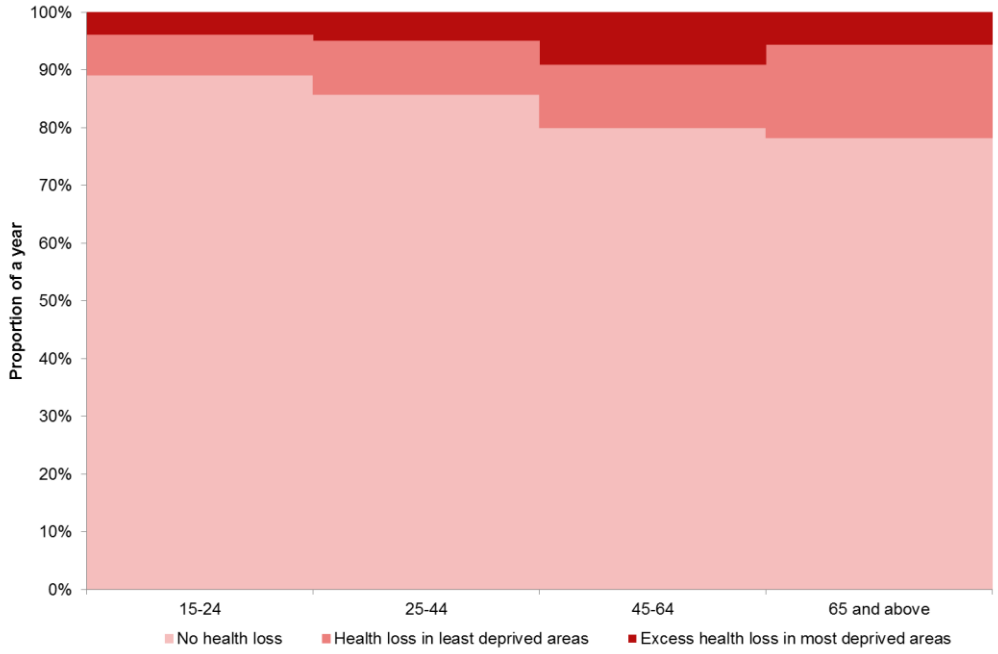
Gender	Age group	Burden free		Excess ill-health		Reference level of ill-health	
		%	Weeks per year	%	Weeks per year	%	Weeks per year
Men	Under 15	97.3%	50.6	3.0%	1.5	0.2%	0.1
	15-24	91.7%	47.7	4.4%	2.3	3.9%	2.0
	25-44	85.5%	44.5	5.7%	3.0	8.7%	4.5
	45-64	81.1%	42.2	8.4%	4.4	10.5%	5.4
	65 and above	78.2%	40.7	16.0%	8.3	5.8%	3.0
Women	Under 15	97.6%	50.8	2.7%	1.4	0.4%	0.2
	15-24	89.5%	46.5	6.8%	3.5	3.7%	1.9
	25-44	85.2%	44.3	9.0%	4.7	5.8%	3.0
	45-64	80.6%	41.9	11.4%	5.9	8.1%	4.2
	65 and above	77.3%	40.2	16.7%	8.7	6.0%	3.1

Figure 10.3: Burden of morbidity (YLD) in Scotland and time spent in excess ill health (in most deprived areas) by gender and age group, 2014-16

a) Men - YLD per person



b) Women - YLD per person



We can use statistical methods to explore the differences in DALY across the ten deprivation deciles in more detail, rather than focussing only on the extremes of the most and least deprived areas.

The Slope Index of Inequality (SII) is a measure of absolute inequality, that is, the difference between the best off and the worst off groups. It is calculated as the slope coefficient from a weighted least squares linear regression of the DALY by deprivation decile. It can be interpreted as the difference in DALY between the most and least deprived in the population, accounting for the distribution across the whole population.

The Relative Index of Inequality (RII) is a measure of relative inequality, that is, proportionately how much worse off the most disadvantaged group is compared to the least disadvantaged. The RII is calculated as the SII divided by the mean DALY for the population. It can be interpreted as the difference between the DALY in the most and least deprived in the population after accounting for the average DALY in the population.

Inequalities in DALY by area deprivation

Overall, the average absolute inequality across deprivation deciles in 2016 was around 21,900 DALYs, representing the difference in DALY between the most and least deprived populations accounting for the distribution across the whole population. Absolute inequalities in premature mortality (YLL) account for over two-thirds (71%) of the overall DALY inequalities (see Table 10.3).

Table 10.3: Average absolute inequality in age-standardised DALY per 100,000 population by gender, Scotland, 2014-16

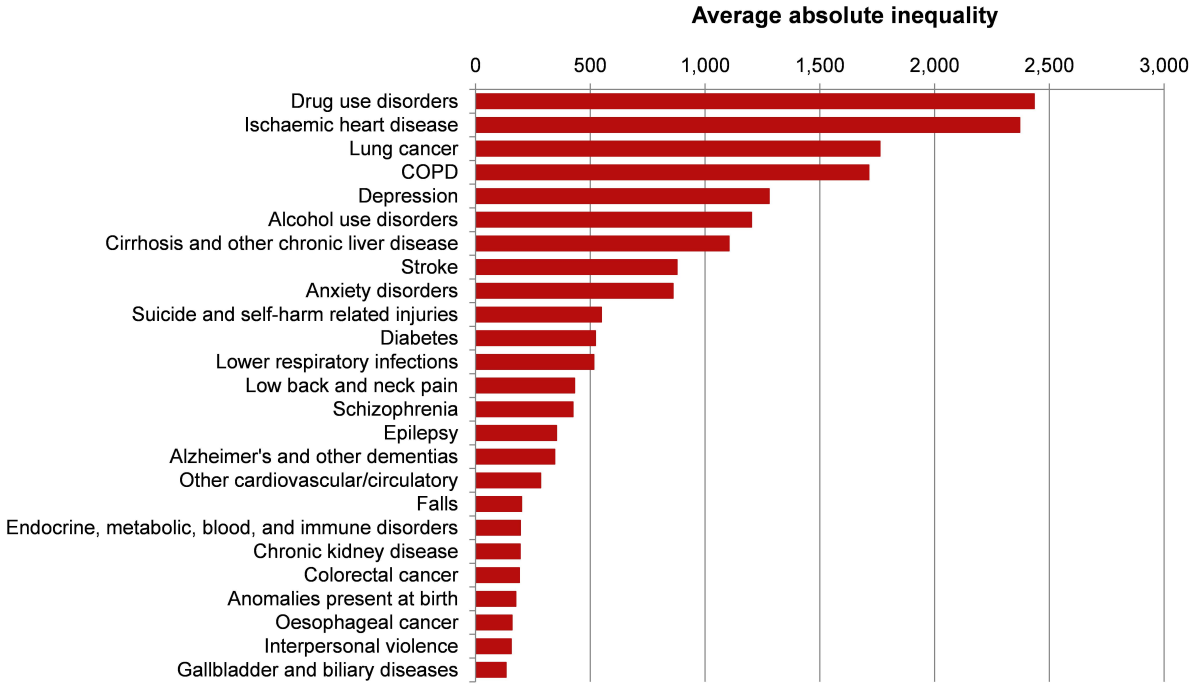
	DALY	YLL	YLD	Absolute inequality contribution of YLL to DALY
Men	26,100	18,400	7,600	0.71
Women	18,100	12,300	5,900	0.68
All	21,900	15,200	6,700	0.69

Inequalities were observed across most causes of diseases and injury (see Figure 10.4). However, a substantial proportion of the all-cause ill health and premature mortality was accounted for by a small number of conditions: of the 132 diseases and injuries, 15 conditions accounted for three-quarters (74.8%) of the absolute inequalities in the DALY. These included: drug use disorders, ischaemic heart disease, lung cancer, COPD, depression, alcohol use disorders, chronic liver disease, stroke, anxiety disorders, suicide and self-harm related injuries, diabetes, lower respiratory infections, neck and low back pain, schizophrenia and epilepsy.

Drug-use disorders, ischaemic heart disease, lung cancer, COPD, depression and alcohol use disorders account for a large proportion of absolute inequality in the burden of disease.

For a small number of causes of DALY, the rates were higher in the least deprived areas. These included sense organ diseases (vision and hearing disorders), 'other musculoskeletal disorders', gout, Parkinson's disease, skin conditions, malignant skin melanoma, maternal hypertensive disorders, neonatal sepsis and other neonatal infections, other maternal disorders and other transport injuries. Although for most of these conditions the contributions to overall DALY in Scotland due to these causes were very small, sense organ diseases and 'other musculoskeletal disorders' are among the 25 diseases responsible for the majority of disease burden in Scotland, accounting for 3.3% and 1.6% respectively of the overall DALY in Scotland.

Figure 10.4. Average absolute inequality in age-standardised DALY per 100,000 population, Scotland, 2014-16



Absolute measures are sensitive to changes in the mean level of population health or changes in the frequency of the health problem being studied. If the mean level of health increases in the same proportion in all deprivation deciles, the absolute inequality will increase, whereas the relative differences remain constant. The Relative Index of Inequality (RII) takes into account the mean DALY and therefore looks only at the ratio rather than the count difference.

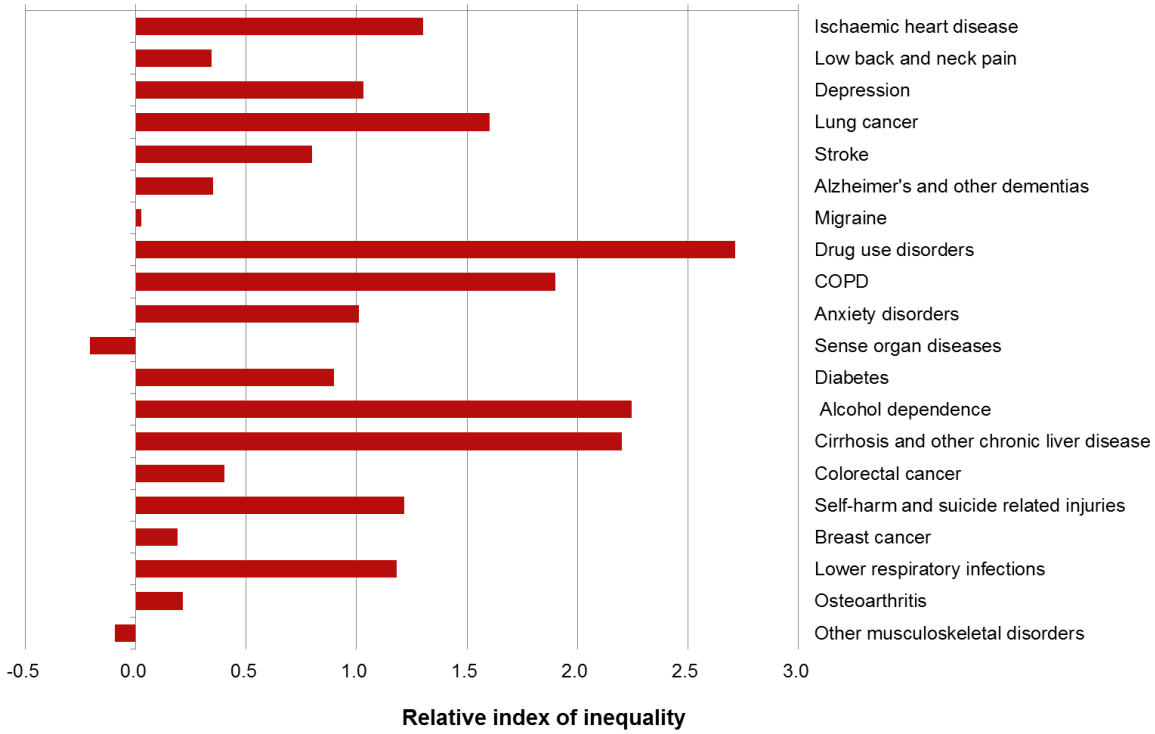
Figure 10.5 shows the relative inequality for the twenty largest contributors to the overall DALY in Scotland. The relative inequality was particularly high for drug use disorders, alcohol use disorders, chronic liver diseases, COPD and lung cancer, indicating significantly higher burden from these conditions in deprived areas in relation to less deprived areas. These five conditions are also major contributors to absolute inequalities in the disease burden. In contrast, neck and low back pain, and migraine, also major contributors to overall DALY, had relatively low relative inequalities indicating that

Drug use disorders have the highest relative and absolute inequalities, followed by alcohol use disorders and chronic liver disease.

burden does not vary across deprivation groups. The relative inequalities for sense organ diseases and 'other musculoskeletal disorders' indicate a greater level of burden for these conditions in less deprived areas.

Whilst conditions such as ischaemic heart disease, depression and anxiety disorders accounted for one-fifth of the absolute inequalities in disease burden (11%, 6% and 4%, respectively) they do not have the highest relative inequalities (RII 1.3, 1.0 and 1.0 respectively). The large absolute inequalities are a reflection of the large amount of burden overall from these conditions: large relative inequalities do not necessarily equate to large disease burden at population level. In contrast, interpersonal violence and cancer of the larynx, which account for 0.7% and 0.4% respectively of absolute inequalities in the DALY, had RRIs of 2.3 and 2.4 respectively.

Figure 10.5. The Relative Index of Inequality for the twenty largest contributors to DALY in Scotland, 2014-16



Absolute Inequalities in DALY by gender and area deprivation

Absolute inequalities were higher amongst men than women (around 26,100 and 18,200 DALYs, respectively).

For both men and women, ten diseases or injuries accounted for approximately two thirds (67% and 63%, respectively) of the absolute inequalities in disease burden (Table 10.4). The disease profile was broadly the same for men and women with exception of suicide and self-harm related injuries, which accounted for 3.1% of the absolute inequalities in men but only 1.7% in women, and neck and low back pain, which accounted for 2.8% of the absolute inequalities in women but only 1.1% in men. Drug use disorders and ischaemic heart disease were the leading contributors to absolute inequalities in the disease burden in men, whereas for women COPD and lung cancer were the largest contributors.

Table 10.4. Absolute Inequalities by gender and condition

Rank	MEN	DALY SII	%	Rank	WOMEN	DALY SII	%
1	Drug use disorders	3,400	13.0%	1	COPD	1,800	9.8%
2	Ischaemic heart disease	3,200	12.2%	2	Lung cancer	1,700	9.4%
3	Alcohol use disorders	1,900	7.2%	3	Ischaemic heart disease	1,700	9.2%
4	Lung cancer	1,800	7.1%	4	Drug use disorders	1,500	8.4%
5	COPD	1,600	6.3%	5	Depression	1,100	6.3%
6	Chronic liver disease	1,500	5.6%	6	Anxiety disorders	1000	5.4%
7	Depression	1,400	5.5%	7	Chronic liver disease	800	4.3%
8	Stroke	1,000	3.8%	8	Stroke	800	4.3%
9	Suicide and self-harm injuries	800	3.1%	9	Alcohol use disorders	600	3.3%
10	Anxiety disorders	700	2.8%	10	Neck and low back pain	500	3.0%

Implications for policy and practice

By combining information on fatal burden with the burden of living in less than ideal health (non-fatal burden), planners and policymakers have a better idea of the contribution that different diseases and injuries make to the total burden of disease. Stark inequalities in burden across our society indicates where prevention and service activity could be focused, and highlights where to focus research into the best preventative actions.

Relative Inequalities in DALY by gender and area deprivation

In order to reduce inequalities in disease burden in Scotland, it is important to focus on absolute inequalities. However, for equity, we also need to understand where the largest relative inequalities are. The largest contributors to relative inequality for the twenty diseases or injuries with the largest DALYs are drug use disorders, alcohol use disorders and chronic liver disease for men. Schizophrenia shows large relative inequalities (RII 2.0) but a relatively low DALY. For women, for diseases or injuries with high DALY, drug use disorders, chronic liver disease, COPD and lung cancer have high RII. Alcohol use disorders in women also have large relative inequalities (RII 2.1) but a lower DALY (i.e. stark inequalities but impacts on a lower number of people).

Figure 10.6 - The Relative Index of Inequality for the twenty largest contributors to DALY in men, Scotland, 2014-16

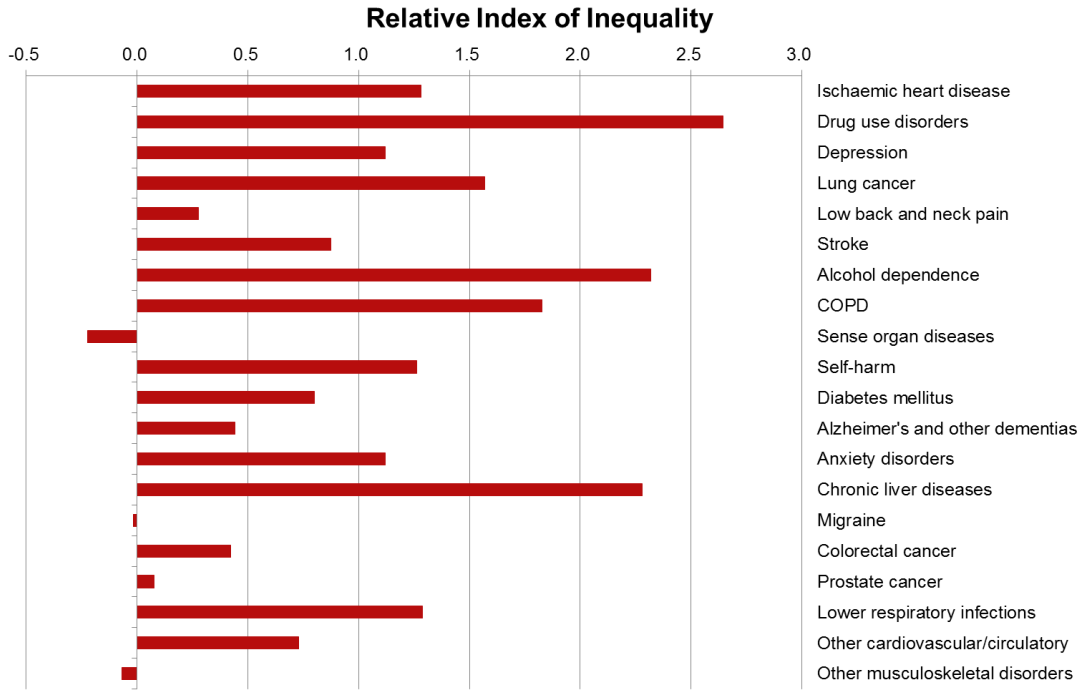
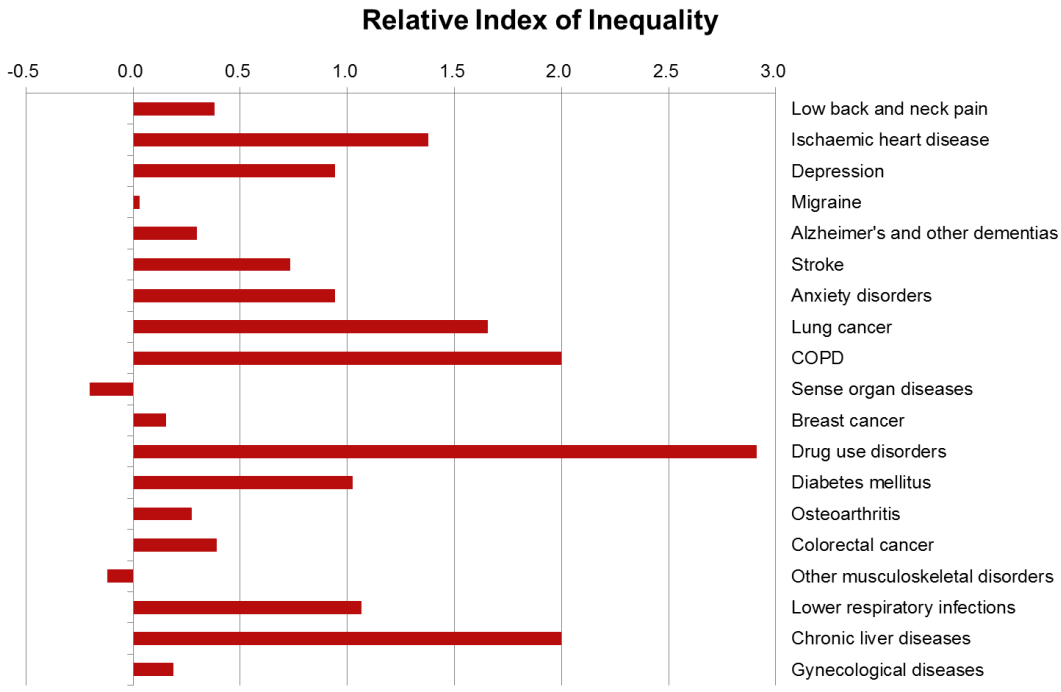


Figure 10.7. The Relative Index of Inequality for the twenty largest contributors to DALY in women, Scotland, 2014-16



Conclusions

The population of Scotland is growing older and living longer. Although we are living longer we are not, on average, experiencing this in perfect health. Health burden is increasingly being defined by what makes us sick rather than what is killing us, and the complexity of experiencing multiple health problems exacerbates the burden. This has implications for planning services and the care workforce, and places emphasis on policy making aimed at preventing (as well as mitigating) poor health. Much of the overall disease burden and the inequality in disease burden is caused by a relatively small number of diseases and injuries (7 diseases and injuries explain over half of the absolute inequality in disease burden, and 25 diseases and injuries explain 70% of the overall disease burden). While ischaemic heart disease continues to present the highest burden, this study further highlights the importance of the public health priorities of mental health, alcohol, tobacco, drug problems and physical inactivity. Research shows that individual behaviour change initiatives will not generate the step change in health that is needed in Scotland, and tackling poverty and inequality, alongside strong public health leadership at a local level will help to create the conditions to reduce overall burden of disease.

What next?

The current phase of the Scottish Burden of Disease study is looking at producing future estimates of disease burden to inform local and national workforce planning, and starting to look at the proportion of the burden that can be explained by a range of exposures in the population such as alcohol, poverty or smoking, along with identifying the most effective and cost effective interventions to address those exposures.

Further information can be found at:
http://www.scotpho.org.uk/comparative-health/burden-of-disease/overview/

http://www.healthdata.org/gbd

http://www.healthscotland.scot/health-inequalities/impact-of-ill-health/impact-of-alcohol-on-health

Table 10.5 : Most common Ill Defined Death types and their ICD10 codes

Most Common Ill Defined Death type	ICD10 code
Malignant neoplasm of other and ill-defined sites	C42 C76 C76.4-C77 C77.3-C77.4 C77.8-C78 C79 C79.2-C80.9 C87 C98-C99 D08-D09 D09.9 D36.0 D36.9 D48 D48.7-D49 D498-D49.9 D54
Heart failure and other ill-defined cardiovascular conditions, (including cardiomegaly, other pulmonary heart diseases, disease of pulmonary vessels, unspecified, systolic (congestive) heart failure; and disseminated intravascular coagulation;	I27-I27.0 I27.2-I27.9 I28.9 I50-I50.9 I51.7
Other specified respiratory disorders Streptococcal, severe and other sepsis related infections; (including gas gangrene and gangrene not elsewhere classified; toxic shock syndrome; staphylococcal infection, unspecified site)	J98.8-J99.8 A40-A41.9 A48.0 A48.3 A49.0 D65-D65.9 I96-I96.9 R02-R02.9 R65.2
Pneumonitis due to solids and liquids Other and unspecified diseases; including unspecified bacterial and infectious diseases, endocrine, nutritional and metabolic diseases; and mental and behavioural disorders	J69-J69.9 A59-A59.9 A71-A71.9 A74.0 B07-B09 B30-B30.9 B31.9 B32.3-B32.4 B35-B36.9 B85-B85.4 B87-B88.9 B94.0 E50-E50.9 F06.3-F06.4 F09-F09.9 F17-F17.9 F30-F49 F51-F99.0 G15-G19 G27-G29 G32-G34 G38-G39 G42-G44.8 G47-G47.2 G47.4-G60.9 G62-G69 G74-G79 G84-G89.4 G94-G94.2 G99-G99.0 G99.2-H05 H05.2-H58.0 H58.8-H59.8 H60-H69.9 H71-H99 K00-K19 K23-K24 K30 K31.9 L20-L30.9 L40-L45 L49-L50.9 L52-L54.0 L55-L60.9 L62-L68.9 L70-L87.9 L90-L92.9 L94-L95.9 L98.5-L99.8 M04 M10-M12 M12.2-M12.4 M12.8-M19.0 M22-M29 M37-M39 M43.2-M49 M49.2-M64 M65.1-M71 M71.2-M73 M73.8-M85.9 M87.3-M87.9 M89.1-M89.4 M90-M99.9 N09 N24 N32.8-N33.8 N35-N35.9 N37-N38 N393-N39.8 N40-N40.9 N42-N43.4 N46-N48.9 N52-N64.9 N66-N69 N78-N79 N84 N84.9-N86 N88-N91.5 N95 N95.1-N95.9 N97-N97.9 Q08-Q10.3 Q19 Q29 Q36.0-Q36.9 Q46-Q49 Q88 Q94 R07.0 R08-R09 R09.3 R12-R15.9 R19-R19.6 R19.8-R23 R23.1-R30.9 R32-R39.9 R41-R49.9 R51-R538 R54.0-R54.9 R55.0 R57.6 R58.0-R63.3 R63.5 R63.8 R64.0-R65.1 R66-R72.9 R74-R78 R78.6-R94.8 R95.0-R99.9 U04.9

Table 10.6: Burden of disease (DALY) ranked by individual diseases with the highest burden, All diseases, Scotland, 2016

This table can be found in an Excel workbook which accompanies this publication.

Appendix 1 – Summary tables

Table 1: Population and vital events, Scotland, 1855 to 2017

Year	Estimated population ('000s)	Live births[1]		Stillbirths[1,2]		Infant deaths		Deaths		Marriages[3]	Civil Partnerships[4]	
		Number	Rate[5]	Number	Rate[6]	Number	Rate[7]	Number	Rate[5]		Male	Female
1855-60	3018.4	102,462	34.1	-	-	12,250	119.6	62,644	20.8	20,645	-	-
1861-65	3127.1	109,764	35.1	-	-	13,166	119.9	69,265	22.1	22,013	-	-
1866-70	3275.6	114,394	34.9	-	-	13,971	122.1	71,974	22.0	22,832	-	-
1871-75	3441.4	120,376	35.0	-	-	15,314	127.2	77,988	22.7	25,754	-	-
1876-80	3628.7	126,086	34.8	-	-	14,921	118.3	74,801	20.6	24,956	-	-
1881-85	3799.2	126,409	33.3	-	-	14,864	117.6	74,396	19.6	26,176	-	-
1886-90	3943.9	123,977	31.4	-	-	14,943	120.5	74,320	18.8	25,702	-	-
1891-95	4122.5	125,800	30.5	-	-	15,895	126.4	78,350	19.0	27,962	-	-
1896-1900	4345.1	130,209	30.0	-	-	16,857	129.5	78,021	17.9	31,771	-	-
1901-05	4535.7	132,399	29.2	-	-	15,881	119.9	77,313	17.1	31,838	-	-
1906-10	4679.9	128,987	27.6	-	-	14,501	112.4	75,534	16.1	31,811	-	-
1911-15	4748.3	120,654	25.4	-	-	13,604	112.8	74,466	15.7	33,857	-	-
1916-20	4823.8	109,750	22.8	-	-	10,869	99.0	72,365	15.0	37,437	-	-
1921-25	4879.6	112,245	23.0	-	-	10,299	91.8	67,652	13.9	34,720	-	-
1926-30	4845.1	96,674	20.0	-	-	8,260	85.4	66,017	13.6	32,605	-	-
1931-35	4905.1	89,306	18.2	-	-	7,212	80.8	64,839	13.2	34,986	-	-
1936-40	4956.8	87,734	17.6	-	-	6,650	75.8	67,166	13.5	42,941	-	-
1941-45	4711.9	91,593	19.4	3,393	35.7	6,202	67.7	66,302	13.8	43,772	-	-
1946-50	5054.3	101,222	20.0	3,047	29.2	4,789	47.3	63,854	12.6	43,206	-	-
1951-55	5103.6	91,366	17.9	2,390	25.5	3,009	32.9	61,838	12.1	41,718	-	-
1956-60	5145.2	98,663	19.2	2,307	22.9	2,755	27.9	61,965	12.0	41,671	-	-
1961-65	5201.0	102,642	19.7	2,000	19.1	2,568	25.0	63,309	12.2	40,235	-	-
1966-70	5204.3	93,033	17.9	1,415	15.0	1,970	21.2	62,797	12.1	42,832	-	-
1971-75	5234.7	75,541	14.4	939	12.3	1,421	18.8	63,808	12.2	41,404	-	-
1976-80	5213.9	65,758	12.6	529	8.0	900	13.7	64,343	12.3	37,801	-	-
1981-85	5151.9	66,422	12.9	389	5.8	695	10.5	63,723	12.4	35,756	-	-
1986-90	5089.5	65,544	12.9	350	5.3	550	8.4	62,796	12.3	35,440	-	-
1991-95	5093.5	63,571	12.5	382	6.0	418	6.6	61,171	12.0	32,866	-	-
1996-2000	5077.5	56,856	11.2	327	5.7	316	5.6	59,478	11.7	29,965	-	-
2001-2005	5078.6	52,914	10.4	297	5.6	275	5.2	57,178	11.3	30,648	-	-
2006-2010	5200.0	58,270	11.2	311	5.3	245	4.2	54,920	10.6	28,934	316	329
2011-2015	5332.4	56,891	10.7	249	4.4	205	3.6	55,023	10.3	29,195	186	246
1991	5083.3	67,024	13.1	369	5.5	473	7.1	61,041	12.0	33,762	-	-
1992	5085.6	65,789	12.9	356	5.4	449	6.8	60,937	11.9	35,057	-	-
1993	5092.5	63,337	12.4	409	6.4	412	6.5	64,049	12.5	33,366	-	-
1994	5102.2	61,656	12.0	381	6.1	382	6.2	59,328	11.6	31,480	-	-
1995	5103.7	60,051	11.7	397	6.6	375	6.2	60,500	11.8	30,663	-	-
1996	5092.2	59,296	11.6	381	6.4	365	6.2	60,654	11.8	30,242	-	-
1997	5083.3	59,440	11.6	319	5.3	316	5.3	59,494	11.6	29,611	-	-
1998	5077.1	57,319	11.2	351	6.1	320	5.6	59,164	11.6	29,668	-	-
1999	5072.0	55,147	10.8	286	5.2	276	5.0	60,281	11.8	29,940	-	-
2000	5062.9	53,076	10.4	298	5.6	305	5.7	57,799	11.3	30,367	-	-
2001	5064.2	52,527	10.4	301	5.7	290	5.5	57,382	11.3	29,621	-	-
2002	5066.0	51,270	10.1	278	5.4	270	5.3	58,103	11.5	29,826	-	-
2003	5068.5	52,432	10.3	296	5.6	265	5.1	58,472	11.5	30,757	-	-
2004	5084.3	53,957	10.6	317	5.8	266	4.9	56,187	11.1	32,154	-	-
2005	5110.2	54,386	10.6	292	5.3	284	5.2	55,747	10.9	30,881	53	31
2006	5133.1	55,690	10.8	296	5.3	248	4.5	55,093	10.7	29,898	578	469
2007	5170.0	57,781	11.2	327	5.6	272	4.7	55,986	10.8	29,866	340	348
2008	5202.9	60,041	11.5	325	5.4	253	4.2	55,700	10.7	28,903	245	280
2009	5231.9	59,046	11.3	317	5.3	235	4.0	53,856	10.3	27,524	219	279
2010	5262.2	58,791	11.2	291	4.9	218	3.7	53,967	10.3	28,480	197	268
2011	5299.9	58,590	11.1	299	5.1	238	4.1	53,661	10.1	29,135	229	325
2012	5313.6	58,027	10.9	274	4.7	217	3.7	54,937	10.3	30,534	257	317
2013	5327.7	56,014	10.5	234	4.2	186	3.3	54,700	10.3	27,547	217	313
2014	5347.6	56,725	10.6	228	4.0	207	3.6	54,239	10.1	29,069	193	243
2015	5373.0	55,098	10.3	211	3.8	175	3.2	57,579	10.7	29,691	33	31
2016	5404.7	54,488	10.1	236	4.3	181	3.3	56,728	10.5	29,229	42	28
2017	5424.8	52,861	9.7	225	4.2	176	3.3	57,883	10.7	28,440	41	29

Footnotes
1) Live births only, prior to 1939.
2) Refer to Notes, definitions and quality of statistics.
3) Figures for 2014 onwards include opposite-sex and same-sex marriages.
4) The Civil Partnership Act 2004 came into effect in December 2005.
5) Rate per 1,000 population.
6) Rate per 1,000 live and still births.
7) Rate per 1,000 live births.

Table 2: Estimated population, births, stillbirths, deaths, marriages and civil partnerships, numbers and rates, by council area, Scotland, 2017

Area	Estimated population at 30 Jun	Live births			Stillbirths		Infant deaths		Deaths			Marriages[4]	Civil Partner-ships
		Number	Rate[1]	Standard-ised Rate	Number	Rate[2]	Number	Rate[3]	Number	Rate[1]	Standard-ised Rate		
SCOTLAND	**5,424,800**	**52,861**	**9.7**	**9.7**	**225**	**4.2**	**176**	**3.3**	**57,883**	**10.7**	**10.7**	**28,440**	**70**
Council areas													
Aberdeen City	228,800	2,402	10.5	8.3	7	2.9	3	1.2	2,130	9.3	10.6	710	-
Aberdeenshire	261,800	2,659	10.2	11.8	10	3.7	2	0.8	2,470	9.4	9.7	1,198	-
Angus	116,280	1,054	9.1	11.1	3	2.8	4	3.8	1,405	12.1	9.9	437	-
Argyll & Bute	86,810	665	7.7	11.1	4	6.0	-	-	1,072	12.3	9.7	1120	3
City of Edinburgh	513,210	5033	9.8	7.2	23	4.5	19	3.8	4,290	8.4	9.6	2949	11
Clackmannanshire	51,450	536	10.4	12.1	2	3.7	4	7.5	556	10.8	11.0	186	-
Dumfries & Galloway	149,200	1,248	8.4	10.9	5	4.0	3	2.4	1,986	13.3	10.3	4291	10
Dundee City	148,710	1,493	10.0	8.4	4	2.7	11	7.4	1,783	12.0	12.2	491	2
East Ayrshire	121,940	1,151	9.4	10.5	5	4.3	5	4.3	1,436	11.8	11.6	484	-
East Dunbartonshire	108,130	1036	9.6	12.5	-	-	-	-	1157	10.7	8.9	249	2
East Lothian	104,840	971	9.3	10.6	2	2.1	3	3.1	1,141	10.9	10.2	637	-
East Renfrewshire	94,760	886	9.3	11.8	3	3.4	-	-	933	9.8	8.8	311	-
Falkirk	160,130	1,567	9.8	10.5	9	5.7	7	4.5	1,644	10.3	10.6	776	-
Fife	371,410	3,465	9.3	10.2	11	3.2	15	4.3	4,189	11.3	10.8	1568	-
Glasgow City	621,020	6,852	11.0	8.3	39	5.7	40	5.8	6,485	10.4	13.4	2457	15
Highland	235,180	2,089	8.9	10.7	8	3.8	3	1.4	2,576	11.0	9.7	1,632	-
Inverclyde	78,760	667	8.5	9.7	4	6.0	3	4.5	1,104	14.0	12.6	182	-
Midlothian	90,090	1107	12.3	12.9	3	2.7	1	0.9	885	9.8	10.4	417	-
Moray	95,780	856	8.9	10.5	2	2.3	3	3.5	1009	10.5	9.5	353	-
Na h-Eileanan Siar	26,950	215	8.0	11.0	2	9.2	-	-	347	12.9	9.7	117	-
North Ayrshire	135,790	1,193	8.8	10.4	8	6.7	5	4.2	1,672	12.3	11.1	670	-
North Lanarkshire	339,960	3,558	10.5	10.8	16	4.5	13	3.7	3,664	10.8	12.4	884	-
Orkney Islands	22,000	184	8.4	10.3	-	-	-	-	276	12.5	10.6	90	-
Perth & Kinross	151,100	1,210	8.0	9.8	8	6.6	3	2.5	1,692	11.2	9.0	1067	-
Renfrewshire	176,830	1,794	10.1	10.7	11	6.1	6	3.3	2,043	11.6	11.6	755	-
Scottish Borders	115,020	989	8.6	11.7	5	5.0	4	4.0	1,298	11.3	9.1	638	-
Shetland Islands	23,080	218	9.4	11.2	1	4.6	1	4.6	207	9.0	9.0	87	-
South Ayrshire	112,680	937	8.3	10.6	6	6.4	4	4.3	1,436	12.7	9.9	840	-
South Lanarkshire	318,170	3,205	10.1	11.1	11	3.4	5	1.6	3,523	11.1	11.0	1074	2
Stirling	94,000	804	8.6	8.8	5	6.2	3	3.7	815	8.7	8.6	692	2
West Dunbartonshire	89,610	891	9.9	10.4	2	2.2	4	4.5	1,031	11.5	11.9	314	-
West Lothian	181,310	1,926	10.6	11.0	6	3.1	2	1.0	1,628	9.0	10.8	764	-

Footnotes

1) Rate per 1,000 population.
2) Rate per 1,000 live and still births.
3) Rate per 1,000 live births.
4) Includes opposite-sex and same-sex marriages.

Table 3: International populations and vital statistics rates, selected countries, latest available figures

Country	Estimated population 2017 ('000s)	Live births		Stillbirths[1]		Infant deaths		Deaths		Marriages	
		Year	Rate[2]	Year	Rate[3]	Year	Rate[4]	Year	Rate[2]	Year	Rate[2]
Scotland	**5,425**	**2017**	**9.7**	**2017**	**4.2**	**2017**	**3.3**	**2017**	**10.7**	**2017**	**5.2**
European Union											
Austria	8,773	2016	10.0	2013	3.4	2016	3.1	2016	9.2	2013	4.3
Belgium	11,352	2016	10.8	2014	3.2	2016	3.2	2016	9.5	2015	3.6
Bulgaria	7,102	2016	9.1	2016	7.1	2016	6.5	2016	15.1	2015	3.9
Croatia	4,154	2016	9.0	2016	4.5	2016	4.3	2016	12.4	2015	4.7
Cyprus	855	2016	11.1	2007	3.1	2016	2.6	2016	6.4	2015	7.2
Czech Republic	10,579	2016	10.7	2016	2.6	2016	2.8	2016	10.2	2015	4.6
Denmark	5,749	2016	10.8	2016	3.8	2016	3.1	2016	9.2	2015	5.1
Estonia	1,316	2016	10.7	2016	2.7	2016	2.3	2016	11.7	2015	5.2
Finland	5,503	2016	9.6	2016	2.2	2016	1.9	2016	9.8	2015	4.5
France	66,989	2016	11.7	2010	10.4	2016	3.7	2016	8.9	2012	3.7
Germany	82,522	2016	9.6	2015	3.8	2016	3.4	2016	11.1	2015	4.9
Greece	10,768	2016	8.6	2016	3.0	2016	4.2	2016	11.0	2015	5.0
Hungary	9,798	2016	9.7	2016	4.3	2016	3.9	2016	13.0	2015	4.7
Irish Republic	4,784	2016	13.4	2014	2.4	2016	3.0	2016	6.4	2015	4.8
Italy	60,589	2016	7.8	2012	2.7	2016	2.8	2016	10.1	2015	3.2
Latvia	1,950	2016	11.2	2016	4.0	2016	3.7	2016	14.6	2015	6.9
Lithuania	2,848	2016	10.7	2016	4.2	2016	4.5	2016	14.3	2015	7.6
Luxembourg	591	2016	10.4	2016	5.9	2016	3.8	2016	6.8	2015	3.6
Malta	460	2016	9.8	2011	4.3	2016	7.4	2016	7.3	2015	7.0
Netherlands	17,082	2016	10.1	2016	2.8	2016	3.5	2016	8.7	2015	3.8
Poland	37,973	2016	10.1	2014	2.5	2016	4.0	2016	10.2	2015	5.0
Portugal	10,310	2016	8.4	2016	2.2	2016	3.2	2016	10.7	2015	3.1
Romania	19,644	2016	10.2	2016	3.6	2016	7.0	2016	13.1	2015	6.3
Slovakia	5,435	2016	10.6	2016	2.8	2016	5.4	2016	9.6	2015	5.3
Slovenia	2,066	2016	9.9	2016	3.3	2016	2.0	2016	9.5	2015	3.1
Spain	46,528	2016	8.8	2016	3.2	2016	2.7	2016	8.8	2015	3.6
Sweden	9,995	2016	11.8	2016	3.5	2016	2.5	2016	9.2	2015	5.3
United Kingdom	65,809	2016	11.8	2016	4.4	2016	3.8	2016	9.1	2015	4.4
Other Europe											
Macedonia	2,074	2016	11.1	2016	8.5	2016	11.9	2016	9.9	2015	6.8
Norway	5,258	2016	11.3	2016	3.1	2016	2.2	2016	7.8	2015	4.5
Switzerland	8,420	2016	10.5	2016	4.2	2016	3.6	2016	7.8	2015	5.0
Turkey	79,815	2016	16.5	2010	8.8	2016	10.0	2016	5.3	2015	7.7

Footnotes

1) The definition of a stillbirth varies from country to country and over time. The position in the UK is described in Appendix 2 - Notes, definitions and quality of statistics.
2) Rate per 1,000 population.
3) Rate per 1,000 live and still births.
4) Rate per 1,000 live births.

Sources: Eurostat, Office for National Statistics, Northern Ireland Statistics and Research Agency.

Appendix 2 – Notes, definitions and quality of statistics

This appendix gives general notes on some of the information and conventions used in this report, and defines some of the terms.

General

Rounding

Figures are calculated using non-rounded data

Conventions for tables

Where a range of years is listed in a table (for example, '1980-82'), the information we have given will be an average for that length of time or in the case of non-census migration it will refer to migration between 1 July (1980) to 30 June (1982).

In all tables 'year' means 'calendar year' unless we tell you otherwise. Many of the ranges of years start in a census year (for example, 1991).

The date events happen and the date of registration

The statistics about births and deaths in the Population chapter are for mid-year periods (from 1 July of one year to 30 June of the next) and relate to the date the event happened and not to the date the event was registered. For example, a birth on 29 June 2017 which was registered on 4 July 2017 would be included in the mid-2017 figures, which relate to the period from 1 July 2016 to 30 June 2017.

All the other statistics about births and deaths, as well as the statistics about stillbirths, marriages and civil partnerships, are for calendar years and relate to the date the event was registered, not the date the event actually happened. For example, a birth on 31 December 2016 which was registered on 4 January 2017 would be included in the 2017 figures. By law, births and stillbirths should be registered within 21 days, marriages and civil partnerships should be registered within three days, and deaths should be registered within eight days. Almost all births, stillbirths, marriages, civil partnerships and deaths are registered on time.

The place the relevant person usually lives and the place the event happens

Births, stillbirths, and deaths are generally allocated to the area in Scotland where the relevant person (the mother for births and stillbirths, and the person who has died for deaths) usually lives. If the relevant person does not usually live in Scotland, the event is allocated to the area in which it happened. However, a death may be allocated to the area where the person used to live if the area is in Scotland and the person had lived away from that area for less than 12 months.

Marriage and civil partnership figures relate to the area where the event took place.

Age

Ages relate to the person's age on their last birthday.

When working out average ages (such as the average age at death and the average age of mothers at childbirth) we have added half a year to people's age at their last birthday. For example, to work out the overall average age at death, we have assumed that the average age of 77-year-olds who died was 77 years and six months.

Age standardisation

A straight comparison of rates between areas may give a misleading picture because of differences in sex and age between the different populations. For example, it would be unreasonable to expect a high birth rate in an area with a high proportion of elderly people. Because of this, we have standardised information in certain tables and charts. Standardisation allows areas with different age and sex structures to be easily compared, comparing the actual number of events that happen in an area with the total number of events that would be expected if the area had the rates of the standard population. In this report, the standard population refers to the overall Scottish population for the year or years in question.

Lists of groups of countries

EU-2 refers to the countries that became member states of the European Union on 1 January 2007, which were Bulgaria and Romania.

EU-8 refers to the countries that became member states of the European Union on 1 May 2004, which were Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

EU-15 refers to the countries that were member states of the European Union before 1 May 2004, which were Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

EU-25 refers to the EU-15, plus the countries that became member states of the European Union between 1 May 2004 and 31 December 2006, which were Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia.

EU-28 refers to the EU-25, plus the countries that became member states of the European Union on 1 January 2007 (Bulgaria and Romania) and on 1 July 2013 (Croatia).

Urban and rural classifications

'Large urban areas' are settlements of over 125,000 people.

'Other urban areas' are settlements of 10,000 to 124,999 people.

'Accessible small towns' are settlements of 3,000 to 9,999 people that are within a 30-minute drive of a settlement of 10,000 people or more.

'Remote small towns' are settlements of 3,000 to 9,999 people that are not within a 30-minute drive of a settlement of 10,000 people or more.

'Accessible rural' settlements are areas of fewer than 3,000 people that are within a 30-minute drive of a settlement of 10,000 people or more.

'Remote rural' settlements are areas of fewer than 3,000 people that are not within a 30-minute drive of a settlement of 10,000 people or more.

You can get more information about the Scottish Government Urban Rural Classification in the Methodology section of the Scottish Government (SG) website.

Deprivation

The Scottish Government produces the Scottish Index of Multiple Deprivation to define small-area concentrations of deprivation across all of Scotland. The index is based on 38 indicators in seven fields – income, employment, health, education, skills and training, housing, geographic access and crime.

You can get more information about the Scottish Index of Multiple Deprivation on the SG website.

Chapter 1 - Population

All population figures refer to estimates at 30 June of the relevant year.

Population covered

The estimated population of an area includes all those who usually live there, whatever their nationality. Students are treated as living at their term-time address. Members of UK and non-UK armed forces stationed in Scotland are included, but UK forces stationed outside Scotland are not. Short-term international migrants (people who move to Scotland for less than 12 months) are also not included.

Population projections

Population projections are estimates for future years largely based on past trends. The Registrar General asks the Office for National Statistics (ONS) to prepare

population projections with input from his own experts. The latest national projections were published in October 2017, and were based on 2016 population estimates. Sub-national population projections were published in March 2018 and cover council areas, health boards, national parks and Strategic Development Plan Areas.

Sources and quality of statistics – population

Population estimates are based on the 2011 Census and are updated each year by adding one year to the age of everyone in the population and including information on births, deaths and migration (people moving to or away from an area). Births and deaths are estimated using information from the civil registration system, which is virtually complete. Migration is more difficult to estimate because there is no complete migration registration system in the UK.

There is more information about the quality of population statistics in the Mid-Year Population Estimates for Scotland: Methodology Guide and About this Publication paper for the Mid-Year Population Estimates for Scotland. Both Adobe Acrobat Portable Document Format (PDF) documents are available on the National Records of Scotland (NRS) website.

Sources and quality of statistics – population projections

More information about the quality of population projections can be found in the Uses and Limitations of Population Projections section on the Office for National Statistics website.

Chapter 2 - Births

Cohort

A cohort is a well-defined group of people who have had a common experience and are observed through time. For example, 'the birth cohort of 1976' refers to the people born in that year.

General fertility rate (GFR)

The number of births per 1,000 women of childbearing age (15 to 44).

Total fertility rate (TFR)

The average number of children who would be born, per woman, to a cohort of women who experienced, throughout their childbearing years, the fertility rates for the calendar year in question.

Age specific fertility rate (ASFR)

The number of births per woman for a specific age during a set time.

Marital status of parents

'Married parents' means parents who are married to each other. 'Unmarried parents' refers to parents who are not married, or who are married but not to each other.

Sources and quality of statistics – births

Statistics about births in Scotland are produced from information collected when the births are registered. The information should be very accurate as it is almost always provided by one or both of the baby's parents, and the parent (or parents) and the registrar should check the details that will appear on the child's birth certificate before the certificate is produced. Also, each record of a birth is checked by one of our district examiners.

The statistics will cover almost 100% of all births in Scotland – because of the importance of a person's birth certificate, there will be very few births that are not registered, and they are likely to be the result of extremely unusual circumstances (for example, if a pregnancy was hidden, the baby killed and the body disposed of).

You can get more information about statistics on births from the Vital Events Births – Background section on the National Records of Scotland (NRS) website.

For general information on all vital events statistics please go to the Vital Events - General Background Information section of the NRS website.

Chapter 3 - Deaths

Cause-of-death coding

Since 1 January 2000, deaths in Scotland have been coded in line with the International Statistical Classification of Diseases and Related Health Problems (Tenth Revision), also known as ICD10. We put the underlying causes of death into classes based on information collected from the medical certificate of cause of death, together with any extra information the certifying doctor provides later. We also take account of changes that procurators fiscal tell us about.

You can get more detailed information about death certificates and coding the causes of death, and how we produce statistics of deaths from certain causes from the Vital Events Deaths - Background Information section of the NRS website.

Stillbirth

Section 56(1) of the Registration of Births, Deaths and Marriages (Scotland) Act 1965 (as amended by the Still-Birth (Definition) Act 1992) defines a stillbirth as a child born after the 24th week of pregnancy which does not breathe or show any other sign of life.

Perinatal deaths

This refers to stillbirths and deaths in the first week of life.

Infant deaths

This refers to all deaths in the first year of life.

Sources and quality of statistics – deaths

Statistics about deaths in Scotland are produced from information which is collected when the deaths are registered. Details of the causes of death come from the Medical Certificate of the Cause of Death (MCCD), and so represent the results of a doctor's clinical judgment, which may not be correct (and, sometimes, an investigator may feel that the doctor did not fill in the MCCD properly - for example, perhaps the doctor mentioned on the MCCD a medical condition that was not related in any way to the death). In some cases, the doctor, a procurator fiscal or a pathologist provides extra information about the cause of death later, for example following further investigations.

Other information about the person who has died will be provided by the person who registers the death (who is usually a son or daughter, sometimes a husband, wife or partner, another relative or a friend, or occasionally, someone like a police officer or a care-home manager) or the registrar can get the information from existing registration records (if the person who has died was born or married in Scotland). In a small percentage of cases, some of the information about the person who has died may not be complete or accurate (for example, if the person registering the death did not know the person very well, and the registrar could not get details from previous registration records). The person registering the death and the registrar should check the details before the certificate is produced. Also, each record of a death is checked by one of our district examiners.

The statistics will cover almost 100% of all deaths in Scotland, as a cemetery or a crematorium will not accept a body unless the death has been registered. However, occasionally a death may not be recorded (for example, because the authorities do not know that someone who is missing has died).

You can get more information about statistics on deaths from the Vital Events Deaths – Background Information section of the NRS website.

You can also get some general information on all vital events statistics from the Vital Events – General Background Information section of the NRS website.

Chapter 4 - Life expectancy

Period Life expectancy

The average number of further years a person can expect to live subject to their current age-specific mortality rates. Life expectancy can be calculated at all ages but is most commonly referred to in relation to life expectancy at birth.

Sources and quality of statistics – life expectancy

The life expectancy estimates are based on the likely trends in the number of deaths indicated by the death records for the three years before the year the records are published. For example, the estimates based on the figures for 2014-2016 for administrative areas were published in December 2017.

You can get more information about the quality of statistics on life expectancy in the Life Expectancy for Scotland: Methodology Guide (PDF document) and on the Life Expectancy at Scotland Level Methodology page both available on the NRS website.

Chapter 5 - Migration

Net migration figures (the number of people moving to Scotland minus the number of people moving out of Scotland) do not include people joining and leaving the Armed Forces or other changes, such as changes in the numbers of Armed Forces stationed in Scotland.

Sources and quality of statistics – migration

Estimates of internal migration (that is, people moving between Scotland and the rest of the UK) are based on General Practitioners (GP) registrations and are considered reasonably accurate for most groups. They may be less accurate for young men, as they tend not to register with a GP immediately after moving.

The National Health Service Central Register (NHSCR) system records the movements of patients between NHS Board areas in Scotland. Anonymised extracts from the National Health Service Central Register (NHSCR), linked with Community Health Index (CHI) postcodes that are shared by NHS National Services Scotland with NRS NHSCR are used to calculate moves between NHS Board areas within Scotland.

The CHI holds records of people registered with an NHS doctor in Scotland. Unlike the NHSCR, these records contain the postcode of the patient's address. Migration at council area level and below is estimated using anonymised data from the CHI supplied with the permission of the Scottish Directors of Public Health.

Cross-border migration estimates (that is, people moving from one constituent country of the UK to another) are also based on patient records. The NHSCR system records the movements of patients between NHS Board areas in Scotland, whereas the movements for patients in England and Wales are recorded in the Personal Demographic Service (PDS). The PDS holds the master demographics database for the NHS in England and Wales. Each time a patient transfers to a new NHS doctor in a different NHS Board area, the NHSCR and PDS are notified and then the patient is considered to have made a migrant move. Counts of these re-registrations are used as a proxy indicator for moves between Scotland and the rest of the UK. Estimates from the country receiving the migrants are said to be more accurate, due to the fact that someone is more likely to register with a new GP than de-register with their old GP. For this reason, estimates from the PDS are used to measure migration flows from Scotland to England and Wales, and health card data from the Health and Social Care Northern Ireland (HSCNI) database is used for moves to Northern Ireland.

International migration estimates (that is, people moving between Scotland and countries outside the UK) are based largely on the International Passenger Survey (IPS). However, these estimates may not be very accurate due to the size of the survey in Scotland (around 150 contacts between mid-2015 and mid-2016).

You can get more information about the quality of statistics on migration from the Migration - Methodology page and Migration Statistics - About this Publication (PDF document) on the NRS website.

Chapter 6 - Marriages and civil partnerships

Civil marriages were introduced by the Marriage (Scotland) Act 1939, which came into force on 1 July 1940.

The Civil Partnership Act 2004, which applies throughout the UK, came into force on 5 December 2005. The act allows same-sex couples aged 16 and over to get legal recognition of their relationship. In Scotland, the first civil partnership was registered on 20 December 2005.

The Marriage and Civil Partnership (Scotland) Act 2014 came into force on 16 December 2014, allowing same-sex couples to marry.

Sources and quality of statistics – marriages and civil partnerships

Statistics about marriages and civil partnerships in Scotland are produced from information which is collected when the marriages and civil partnerships are registered. The information should be very accurate as it will be provided by both parties to the marriage or civil partnership, and the couple and the registrar will check the details that will appear on the certificate before the certificate is produced. Also, each record of a marriage or a civil partnership is checked by one of our district examiners.

The statistics cover 100% of all marriages and civil partnerships in Scotland as a marriage or civil partnership is not legally formed unless a district registrar has carried out all the legal requirements.

You can get more information about statistics on marriages and civil partnerships from the Vital Events Marriage and Civil Partnerships – Background Information section of the NRS website.

You can also get some general information on all vital events statistics from the Vital Events – General Background Information section of the NRS website.

Chapter 7 - Adoptions

The Registrar General for Scotland registers adoptions under the Adoption of Children (Scotland) Act 1930.

Sources and quality of statistics – adoptions

You can get some more information about these statistics from the Vital Events Adoptions – Background Information section on the NRS website.

Chapter 8 - Households and housing

Household estimates

Household estimates are produced every year from information on occupied and empty homes taken from council tax billing systems. An occupied home is roughly equivalent to a household. The estimates are used for a range of purposes including informing local authority decisions about housing need and providing services (including housing, planning waste collection and community care). Information on types of housing is taken from the Scottish Assessors' Portal. The latest household estimates are for 2017.

Household projections

We produce household projections (estimates for future years largely based on past trends) every two years. These are mainly used for informing decisions about future housing need and providing services. The latest household projections, covering the length of time from 2016 to 2041, take account of the results of the population projections. They use information from the last three censuses, along with recent survey data, to help project trends in how households are structured by type of household and by the age of the head of household. The head of household is defined in the census as the first person on the census form who is aged 16 or over and usually lives at the address in question. The projections give an indication of what would happen if past trends continue. They do not take account of policy initiatives, or other factors that may affect future populations. Projections for small groups are likely to be less reliable than those for larger groups.

Sources and quality of statistics – households and housing

Information on occupied and empty homes and on housing type comes from council tax billing systems and from the Scottish Assessors' Association, and then goes through a thorough process of quality assurance. It is possible that not all of the information held on the billing systems is up to date. There can also be small differences in the definitions used for various categories in the billing systems. The details can change over time as a result of reviews of council tax discounts and exemptions and year-on-year differences in the way second homes and empty homes are classed by some local authorities. This can have a small effect on the percentages of homes which are classed as empty or second homes.

You can get more information from 'Background Information' (section 5) of the Estimates of Households and Dwellings, 2017 publication which is available on the NRS website.

Notes on statistical publications

National Statistics

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

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

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

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

Information on background and source data

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

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the devolved Scottish Administration. Our purpose is to collect, preserve and produce information about Scotland's people and history and make it available to inform current and future generations. We do this as follows:

Preserving the past – We look after Scotland's national archives so that they are available for current and future generations, and we make available important information for family history.

Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.

Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the Statistics section of our website. Scottish Census statistics are available on the Scotland's Census website.

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government ScotStat website.

You can also follow us on twitter @NatRecordsScot

Enquiries and suggestions

Please contact our Statistics Customer Services if you need any further information.
Email: statisticscustomerservices@nrscotland.gov.uk

If you have comments or suggestions that would help us improve our standards of service, please contact:

Alan Ferrier
Senior Statistician
National Records of Scotland
Room 1/2/12
Ladywell House
Ladywell Road
Edinburgh
EH12 7TF

Phone: 0131 314 4530
Email: alan.ferrier@nrscotland.gov.uk