Long-term Monitoring of Health Inequalities

March 2017 report

Summary

Introduction
This report presents a range of indicators selected in order to monitor health inequalities over time.

With the exception of the healthy birthweight indicator, significant health inequalities persist for each indicator covered in the report.

Changes in the gap between the most and least deprived areas in Scotland
In a number of indicators, absolute inequality (the gap between the most and least deprived areas) has narrowed over the longer term:

- Premature mortality - the gap has reduced by 16% from its peak in 2002
- CHD deaths - the gap has reduced by 47% from its peak in 1997
- First alcohol-related hospital admission - the gap has reduced by 43% since the start of the time series in 1996
- All-cause mortality in those aged 15-44 – the gap has reduced by 16% from its peak in 2001
- Low birthweight – the gap has reduced by 31% since its peak in 2004.

The gap has widened for two indicators:

- Limiting long-term conditions – the gap has increased by 39% since the start of the time series in 2008/2009.
- Self-assessed health – the gap has increased by 47% since the start of the time series in 2008/2009

For the other indicators in the report, long term trends in the absolute gap are less clear.

Relative inequalities

The relative index of inequality (RII) indicates the extent to which health outcomes are worse in the most deprived areas compared to the average throughout Scotland. It is possible for absolute inequalities to improve, but relative inequalities to worsen.

There are three **morbidity indicators** for which the RII can reasonably be compared with one another: alcohol-related hospital admissions; heart attack hospital admissions; and cancer incidence.

Amongst these, relative inequalities in alcohol-related hospital admissions have declined over the long term and heart attack admissions inequalities have increased in the years since 2008. Relative inequalities have remained higher in the alcohol-related indicator however.

Inequalities in cancer incidence have remained lowest and more stable in relative terms.

Amongst the three comparable **mortality indicators** (CHD deaths, alcohol-related deaths and cancer deaths), relative inequalities in CHD mortality have increased over the long term. The relative inequalities in alcohol-related deaths have shown more year to year fluctuation over the same period, but the RII for 2015 (1.88) is ultimately the same as at the start of time series in 1997.

The RII for cancer mortality has increased slightly over the longer term. However, inequalities remain wider in alcohol-related deaths and coronary heart disease deaths.

Amongst the other indicators in the report, relative inequalities in premature mortality have increased. This is in contrast with the reduction seen in absolute inequalities for the same indicator.

Contents

Background

A Ministerial Task Force on Health Inequalities led by the Minister for Public Health was established in 2007 to identify and prioritise practical actions to reduce the most significant and widening health inequalities in Scotland. The Task Force recognised the need to monitor progress in tackling health inequalities in the longer term as well as managing short and medium term progress.

A technical advisory group was set up in early 2008 to advise the Task Force on long-term monitoring of health inequalities. The group recommended a range of indicators to be monitored over time, as reflected in this report.

The technical advisory group met most recently in 2015 to review the list of indicators and the methods used to report them.[1]

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[1] The first Long-Term Monitoring of Health Inequalities report, including Technical Advisory Group Membership, is available here: http://scotland.gov.uk/Publications/2008/09/25154901/0

Indicators

The indicators monitored by this report series are:

Headline indicators of health inequalities

- Healthy Life Expectancy
- Premature Mortality from all causes (aged under 75 years)
- Mental Wellbeing of adults (aged 16+)

Indicators of inequalities in morbidity and mortality

- Coronary Heart Disease: first ever hospital admission for heart attack (aged under 75 years)
- Coronary Heart Disease: deaths (aged 45-74 years)
- Cancer: incidence (aged under 75 years)
- Cancer: deaths (aged 45-74 years)
- Alcohol: first hospital admissions (aged under 75 years)
- Alcohol-related deaths (aged 45-74 years)
- All-cause mortality (aged 15-44 years)
- Low birthweight
- Healthy birthweight
- Self-assessed health of adults (aged 16+)
- Limiting long-term conditions amongst adults (aged 16+)

This year's report does not include results for the Healthy Life Expectancy indicator, as these are produced every second year and were included in the previous report.

In line with recommendations from the technical advisory group, two new indicators (Self-assessed health and Limiting long-term conditions) have been included in this publication for the first time.

Tables showing the most up-to-date trends in relative and absolute inequalities for all indicators are published on the Scottish Government website.

Methods

The report uses a combination of measures of health inequalities to give a fuller understanding of the different aspects of inequalities. These are:

- Scale: How big is the problem? This measure describes the underlying scale of the problem, puts it into context and presents past trends at Scotland level.
- Relative Index of Inequality (RII): How steep is the inequalities gradient? This describes the gradient of health observed across the deprivation scale, relative to the mean health of the whole population. Unless explicitly explained, the RII indicates the extent to which health outcomes are better in the least deprived areas, or worse in the most deprived areas, compared to the mean.
- Absolute range: How big is the gap? This measure describes the absolute difference between the extremes of deprivation.

Following recommendations from the expert group, an area-based index derived from the income and employment domains of the Scottish Index of Multiple Deprivation (SIMD) is used to define deprivation. This reflects the absence of individual-level data on socio-economic circumstance.

The index is referred to as the Income and Employment Index (IEI).

These indicators and measures were recommended for long-term monitoring of deprivation-related health inequalities at Scotland level. Monitoring health inequalities due to other factors, such as age, gender and ethnicity, and indicators at a local level, may require different indicators and measures. Further information on the methods is provided in Annex 1.

Changes to indicators
The most recent meeting of the Technical Advisory Group in July 2015 focused on a number of areas for development in the report, in the short and longer term, and reviewed the list of indicators. A full record of the recommendations which will be developed for future reports is provided on the Health Inequalities pages of the Scottish Government website.

Recommended changes that have been incorporated in this year's report include the inclusion of the new 'morbidity indicators' relating to self-assessed general health and long-term conditions. These are broken down by both IEI deciles and equivalised (household) income deciles.

Headline indicators of Health Inequalities

Premature Mortality

Despite increasing in the past two years, the gap in premature mortality rates between the most and least deprived areas has reduced since 2002. Relative inequalities, however, have widened over the long term.

In 1997, premature mortality rates were 2.7 times higher in the most deprived areas compared to the least deprived; in 2015, rates were 3.7 times higher in the most deprived areas.

Trends in premature mortality

More than 20,000 people in Scotland died before the age of 75 in 2015.

Over the long term there has been a reduction in the mortality rate among under-75s. However, 2015 is the first year covered in this report which has seen an increase in the premature mortality rate.

The age-standardised mortality rate among under-75s in 2015 was 440.5 per 100,000 people. This is a reduction of 32 per cent since 1997, but an increase of four per cent since 2015.

Inequalities in premature mortality, 2015

In 2015, the premature mortality rate in the 10% most deprived areas was 828.6 per 100,000, 3.7 times higher than the rate in the least deprived areas (226.6 per 100,000).

Figure 2.1

All cause mortality amongst those aged <75y by Income-Employment Index Scotland 2015
(European Age-Standardised Rates per 100,000)
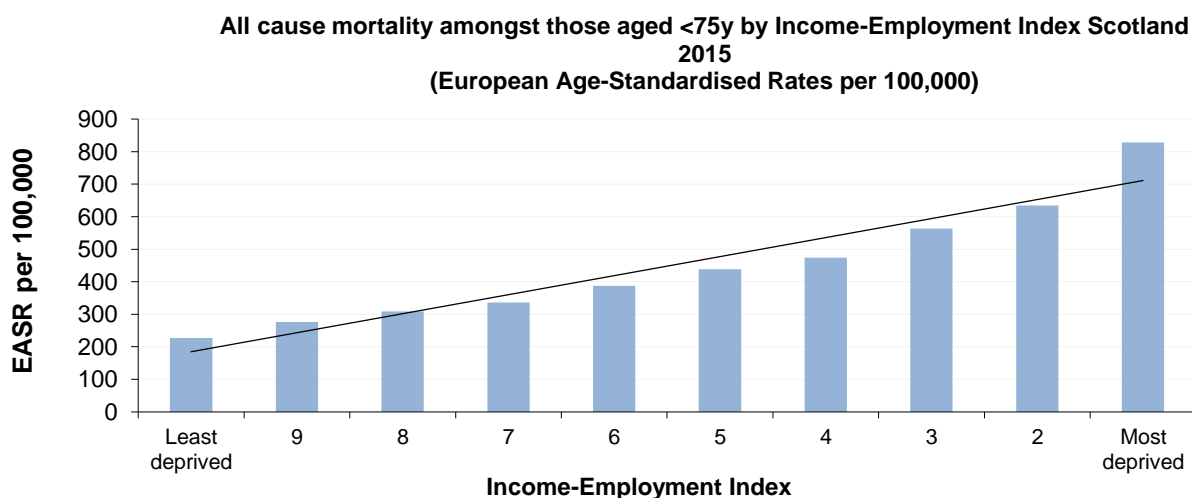
Trends in relative inequalities

The RII is the same in 2015 as in 2014 (both 1.33). However, over the longer term, relative inequalities have increased.

Between 1997 and 2015, premature mortality rates declined by 41% in the least deprived areas, but by only 20% in the most deprived areas in Scotland.

In 1997, premature mortality rates were 2.7 times higher in the most deprived areas compared to the least deprived; in 2015, premature mortality rates were 3.7 times higher in the most deprived areas.

Figure 2.2

Relative Index of Inequality (RII): All cause mortality <75y
Scotland 1997-2015
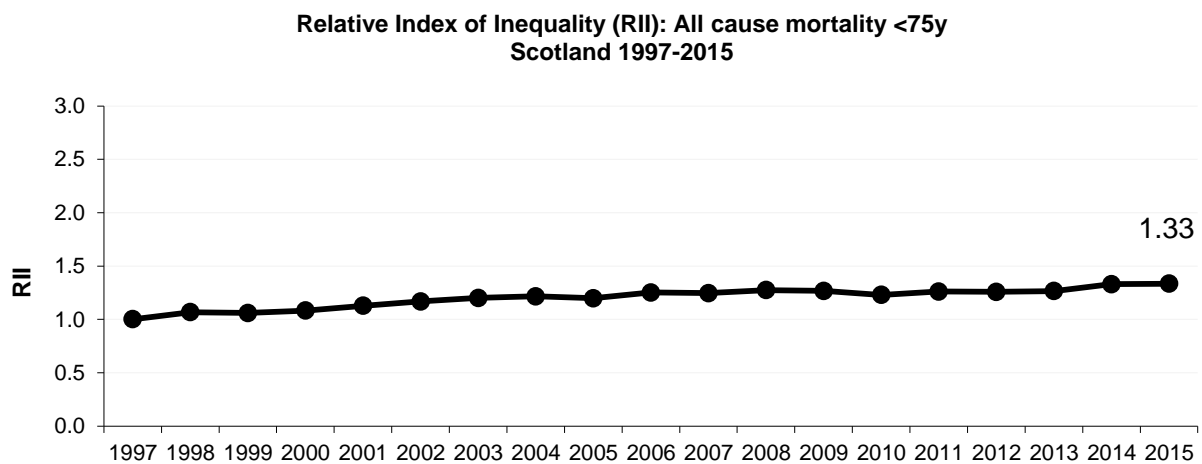
Trends in absolute inequalities

Absolute inequalities in premature mortality reached a peak in 2002. Between 2002 and 2013 there was a general downward trend. Most notably, the absolute gap between the most and least deprived areas reduced every year between 2007 and 2013.

Since 2013 the gap has increased, although it is currently lower than at any point prior to 2010.

Figure 2.3

Absolute Gap: All cause mortality <75y, Scotland 1997-2015
(European Age-Standardised Rates per 100,000)
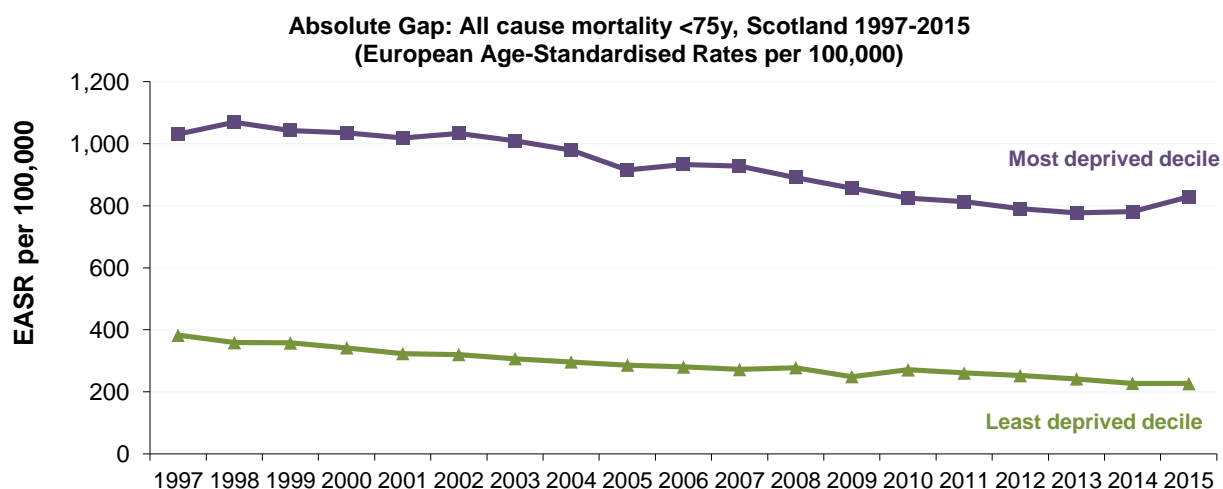
In 2002, the premature mortality rate in the most deprived areas was 1,033.2 per 100,000 and 319.8 per 100,000 in the least deprived areas, a gap of 713.4 per 100,000. In 2015, the gap had reduced to 602.0 per 100,000.

Table 2.1: Trends in premature mortality, 1997-2015

Year	Number of deaths	Target population size	Rate per 100,000 (EASR)
1997	26,081	4,740,269	651.9
1998	25,857	4,729,975	643.3
1999	25,491	4,721,298	632.5
2000	24,593	4,708,667	607.3
2001	24,168	4,703,661	593.1
2002	24,219	4,701,958	588.9
2003	23,789	4,702,431	573.4
2004	22,896	4,714,233	546.2
2005	22,441	4,735,320	530.3
2006	22,237	4,752,425	520.4
2007	22,359	4,783,452	516.8
2008	22,005	4,811,453	501.3
2009	21,229	4,835,007	477.0
2010	20,997	4,858,058	467.4
2011	20,685	4,888,316	456.1
2012	20,446	4,895,114	445.3
2013	20,344	4,903,074	437.5
2014	19,961	4,914,362	423.2
2015	20,988	4,935,283	440.5

Mental Wellbeing – adults aged 16+

In 2014/2015, inequalities in mental wellbeing amongst adults improved.

In 2012/2013, adults in the most deprived areas were five times more likely to have below average wellbeing than those in the least deprived areas. In 2014/15 adults in the most deprived areas were only 3 times more likely to have below average wellbeing.

This change was largely driven by an increase in the proportion of adults in the least deprived areas with below average wellbeing.

Trends in mental wellbeing

The mean score on the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) has been fairly static, at 49.8 in 2008/2009 and 49.9 in each of the three measurement periods since.

'Below average' wellbeing has been defined as WEMWBS scores of at least one standard deviation below the mean, equivalent to scores of 41 or lower in all years. The proportion of adults in Scotland who have a below average WEMWBS score has remained at 15% since 2008/2009.

Inequalities in mental wellbeing, 2014/2015

In 2014/2015, 27% of adults in the most deprived areas had below average wellbeing, indicated by a WEMWBS score of 41 or lower. This compared to 9% of adults in the least deprived areas.

Figure 3.1

Proportion of adults (16+) with a below average WEMWBS score by Income-Employment Index, Scotland 2014/2015

11
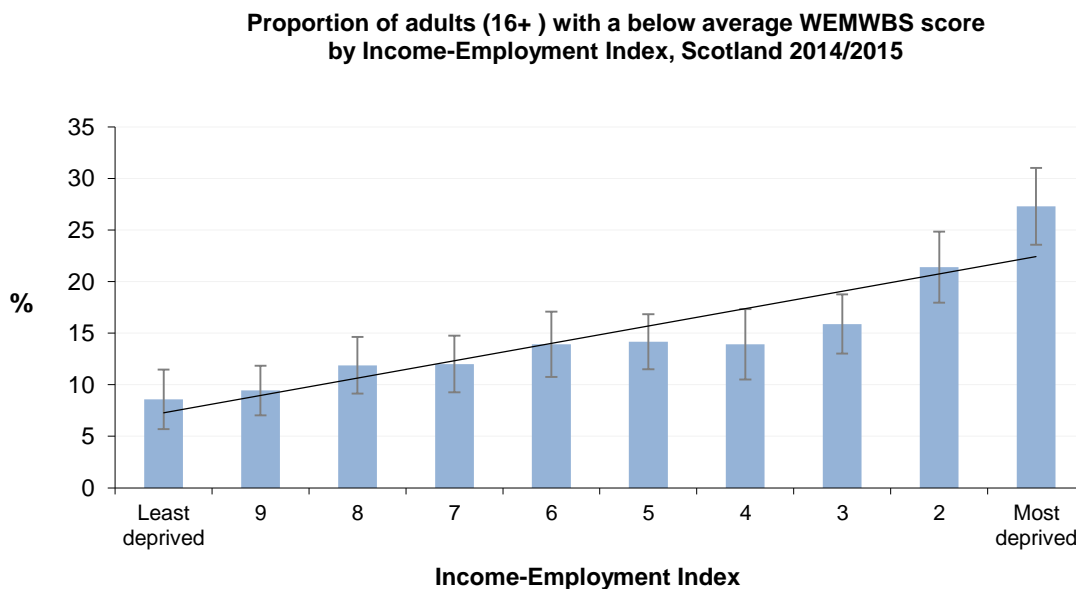
Trends in relative inequalities

The relative index of inequality (RII) in below average wellbeing for 2014/2015 is the lowest of the four time periods covered in this publication.

In 2014/15 adults in the most deprived areas were approximately 3 times more likely to have below average wellbeing compared to those in the least deprived areas In 2012/2013, adults in the most deprived areas were 5 times more likely to have below average wellbeing.

Figure 3.2

Relative Index of Inequality (RII):
Proportion of adults (16+) with a below average WEMWBS score
Scotland, 2008/2009 - 2014/2015
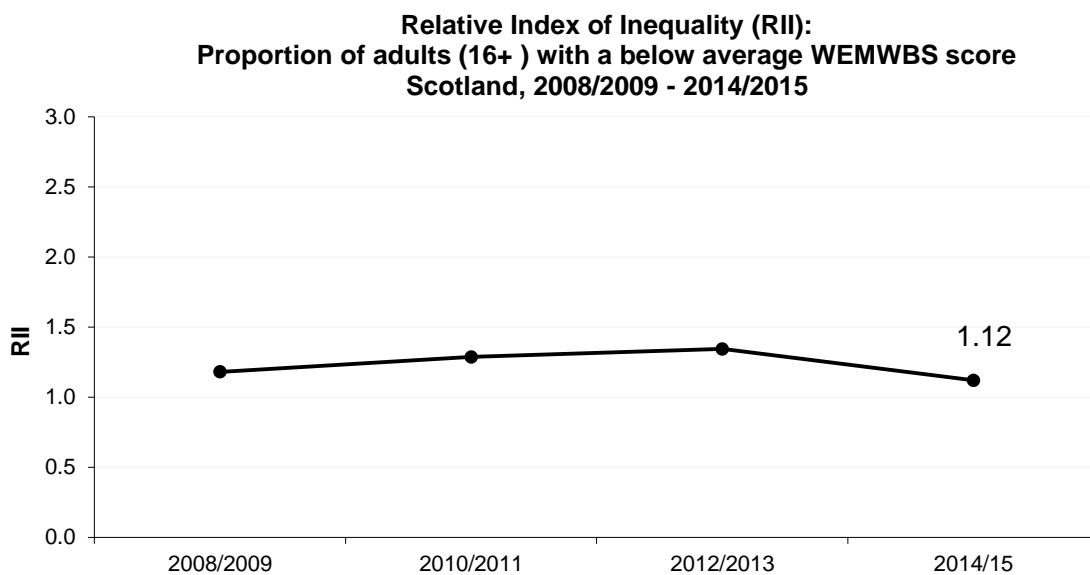
Trends in absolute inequalities

The gap in prevalence of below average wellbeing between those in the most deprived areas and least deprived areas had been widening since 2008/2009. However, in the most recent period the gap returned to a similar level to that recorded in 2010/2011. This was largely driven by a statistically significant increase (from 6% to 9%) in the proportion of adults in the least deprived areas with below average wellbeing.

Figure 3.3

Absolute Gap: Proportion of adults (16+) with a below average WEMWBS score Scotland, 2008/2009 - 2014/2015
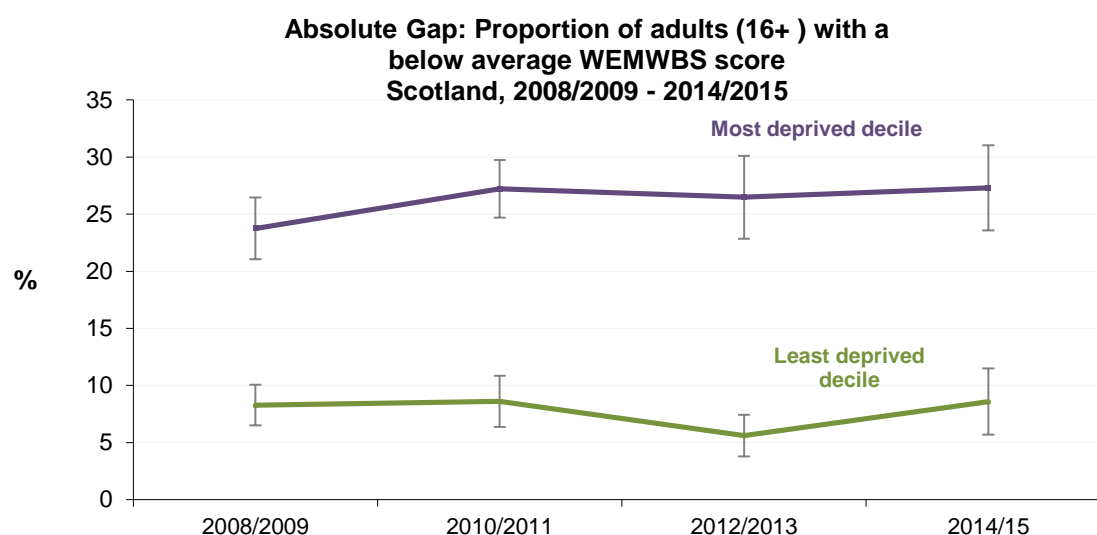
Table 3.1: Trends in mental wellbeing, 2008/2009-2014/2015

Year	Mean WEMWBS			Below average wellbeing*		
	Mean WEMWBS score	Lower 95% confidence limit	Upper 95% confidence limit	Proportion of adults with below average wellbeing (%)	Lower 95% confidence limit (%)	Upper 95% confidence limit (%)
2008/2009	49.8	49.6	50.0	14.8	14.1	15.6
2010/2011	49.9	49.7	50.1	15.0	14.2	15.8
2012/2013	49.9	49.7	50.2	14.9	13.9	15.8
2014/2015	49.9	49.7	50.2	14.7	13.7	15.7

indicated by a WEMWBS score of 41 or lower

Inequalities in morbidity and mortality indicators

The relative index of inequality (RII) indicates the extent to which health outcomes are worse in the most deprived areas compared to the average throughout Scotland. While comparisons of RII between indicators are possible, they should be made with some caution, in particular where absolute values are significantly higher or lower in the compared indicators or where the measurement scale differs (for example, relative inequalities in Mental Wellbeing scores, which are based on responses to survey questions, compared to relative inequalities in an age-standardised mortality rate).

The following charts group indicators in this report into broadly comparable categories: the first shows hospital admissions and incidence of conditions for people belonging to the under 75 age group; while the second shows mortality rates in the 45-74 age group for three causes of death.

Although relative inequalities in alcohol-related hospital admissions have declined over the long term and heart attack hospital admissions inequalities have increased in the years since 2008, relative inequalities have remained highest in the alcohol-related indicators throughout the period covered by this report. Inequalities in cancer incidence have been more stable in relative terms.

Figure 4.1

Relative Index of Inequality (RII)
Selected morbidity indicators (ages <75 years)
Scotland 1997-2015
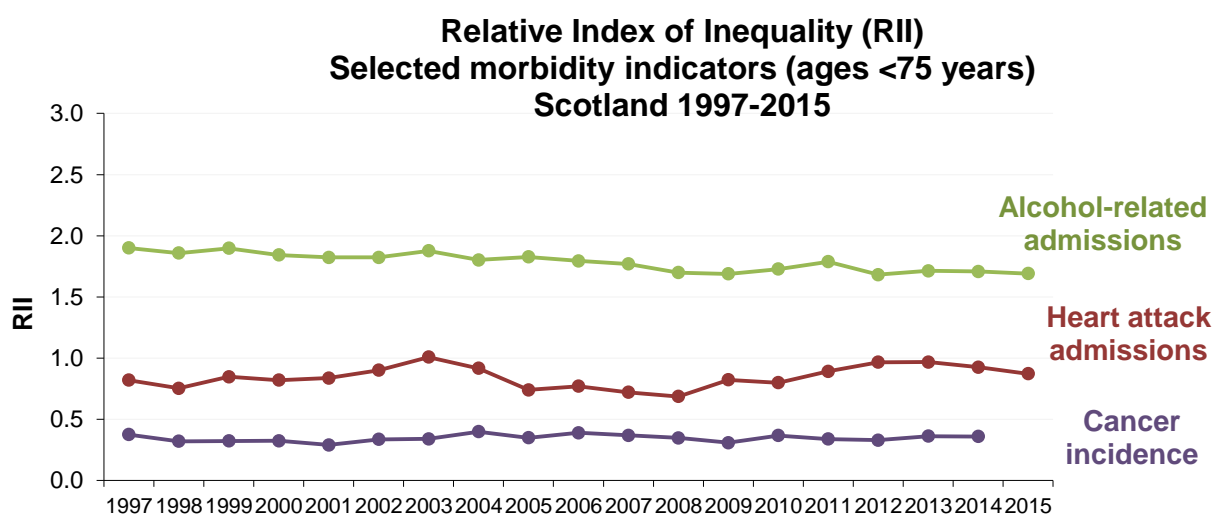
Relative inequalities in CHD mortality among adults aged 45-74 have increased over the long term. Alcohol-related deaths relative inequalities have shown more year to year fluctuation over the same period. However, the RII for alcohol-deaths in 2015 (1.88) is the same as at the start of time series.

Although RII in cancer mortality has increased slightly over the longer term, inequalities remain widest in alcohol-related deaths and coronary heart disease deaths.

Figure 4.2
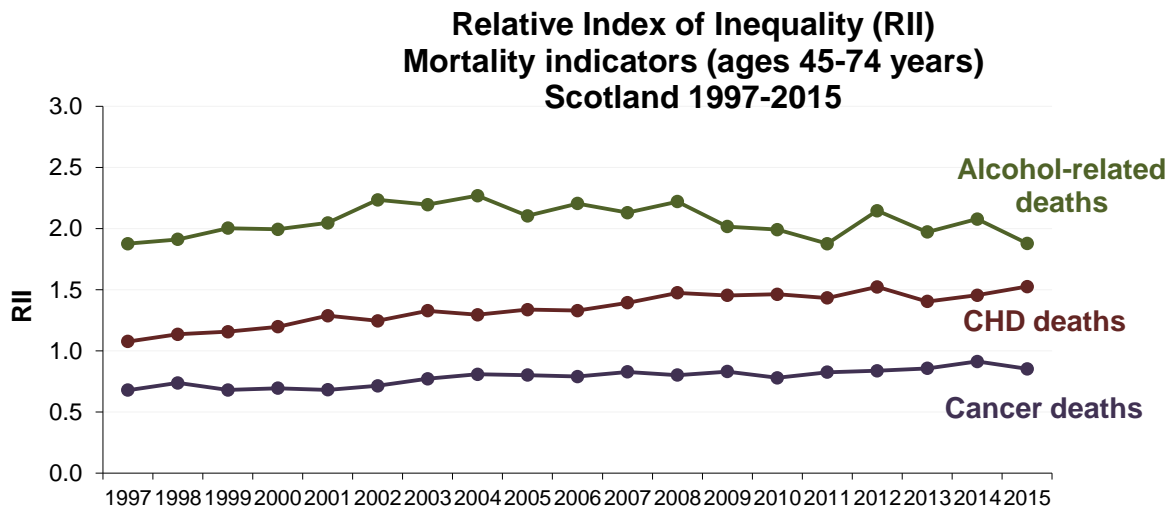
Relative Index of Inequality (RII)
Mortality indicators (ages 45-74 years)
Scotland 1997-2015

Coronary Heart Disease - first ever hospital admission for heart attack aged under 75 years

Trends in heart attack hospital admissions

In 2015, around 4,500 new cases of heart attack (for those aged under 75 years) were recorded in Scottish hospitals.

The rate of admissions is currently 36% lower than in 1997. However, following increases between 2007 and 2012 the rate of admissions is higher than the low point seen in 2007.

Inequalities in hospital heart attack hospital admissions, 2015

The latest admission rate in Scotland's most deprived areas is 2.3 times greater than that of the least deprived (139.9 cases per 100,000 compared to 59.5 per 100,000).

Figure 5.1

Hospital admissions for heart attack among those aged <75y by Income-Employment Index, Scotland 2015 (European Age-Standardised Rates per 100,000)
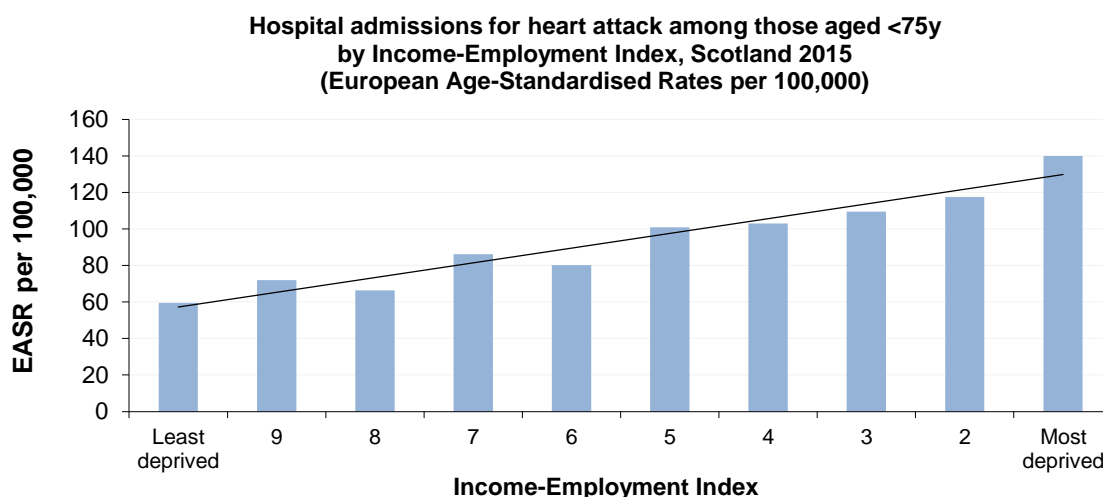
Trends in relative inequalities

Relative inequality levels for heart attack hospital admissions have fluctuated over time. The RII for 2015 (0.87) is currently similar to that at the start of the time series (0.82)

Figure 5.2

**Relative Index of Inequality (RII): Hospital admissions for heart attack <75y
Scotland 1997-2015**
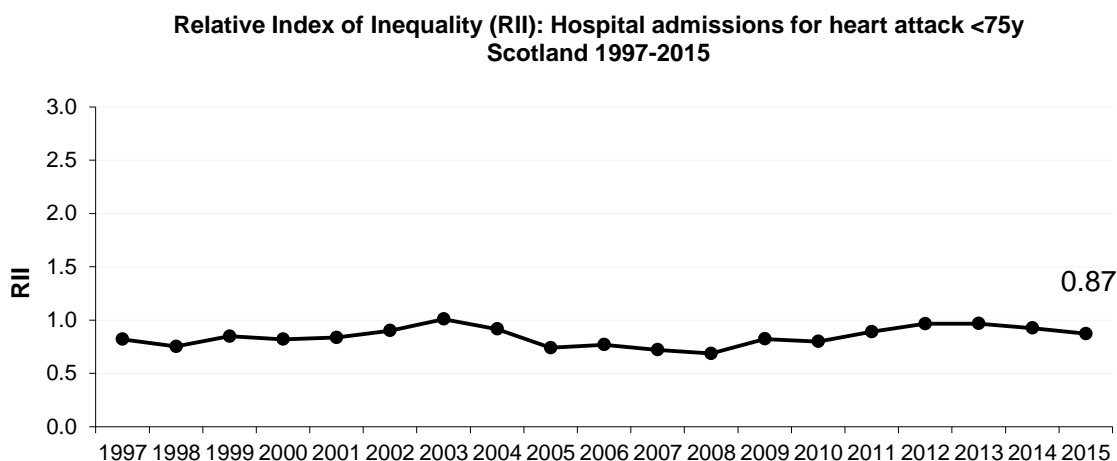
Heart attack hospital admission rates (aged < 75) have generally been approximately 2-3 times higher in the most deprived areas compared to the least deprived areas. In 2015, rates are 2.3 times higher in the most deprived areas than in the least deprived.

Trends in absolute inequalities

Absolute inequalities have also fluctuated. Following consecutive reductions between 2003 and 2007, the gap widened until 2012 before narrowing again in the three years since. The gap remains larger than at the narrowest point reached in 2007.

Figure 5.3

Absolute Gap: Hospital admissions for heart attack <75y
Scotland 1997-2015
(European Age-Standardised Rates per 100,000)
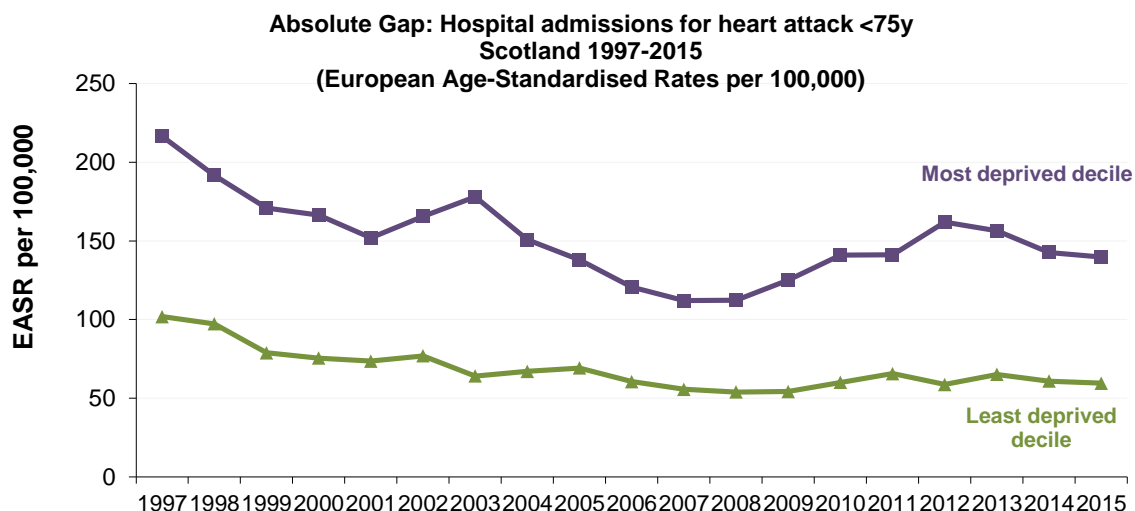
In 2015, the heart attack admission rate in the most deprived areas was 139.9 per 100,000, compared to a rate of 59.5 per 100,000 in the least deprived areas (a gap of 80.3 per 100,000).

The gap was largest in 1997, when the admissions rate was 216.5 per 100,000 and 101.9 per 100,000 in the most and least deprived areas respectively (a gap of 114.6 per 100,000).

Table 5.1: Trends in heart attack hospital admissions (aged <75), 1997-2015

	Total admissions	Population	Rate per 100,000 (EASR)
1997	5,764	4,740,269	145.1
1998	5,676	4,729,975	141.5
1999	5,101	4,721,298	126.6
2000	4,812	4,708,667	118.4
2001	4,776	4,703,661	116.9
2002	4,833	4,701,958	116.6
2003	4,569	4,702,431	109.0
2004	4,413	4,714,233	103.9
2005	4,047	4,735,320	94.2
2006	3,750	4,752,425	86.4
2007	3,549	4,783,452	80.4
2008	3,655	4,811,453	81.7
2009	3,851	4,835,007	84.9
2010	4,377	4,858,058	95.4
2011	4,537	4,888,316	97.7
2012	4,747	4,895,114	100.8
2013	4,697	4,903,074	98.8
2014	4,498	4,914,362	93.3
2015	4,513	4,935,283	92.7

Coronary Heart Disease (CHD) - deaths aged 45-74 years

Trends in CHD deaths

Since 1997, there has been a considerable decrease in CHD mortality amongst the population aged 45-74 years. The death rate has fallen by 66% to 133.7 per 100,000. However, CHD remains one of Scotland's biggest causes of premature mortality, with around 2,500 deaths occurring in this age group in 2015.

Inequalities in CHD deaths, 2015

In 2015, the CHD mortality rate was 5.2 times greater in Scotland's most deprived areas compared to the least deprived (258.5 compared to 49.9 deaths per 100,000 population).

Figure 6.1

CHD mortality amongst those aged 45-74y
by Income-Employment Index, Scotland 2015
(European Age-Standardised Rates per 100,000)

19
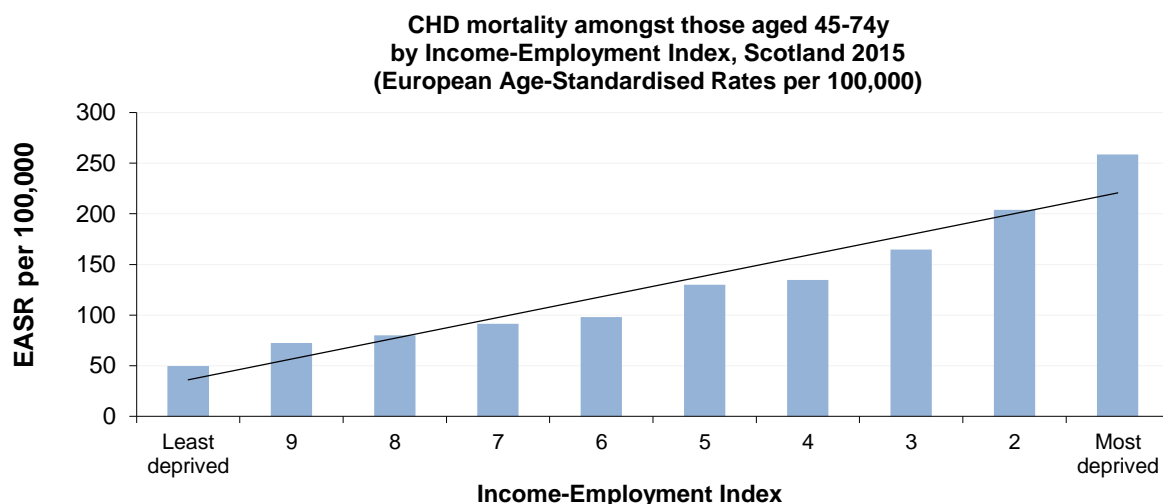
Trends in relative inequalities

Relative inequalities in CHD mortality have grown over the longer term. In particular, there was a steady growth between 1997 and 2008. Since 2008, relative inequalities have fluctuated in the range of 1.40-1.52.

Figure 6.2

**Relative Index of Inequality (RII): CHD mortality 45-74y
Scotland 1997-2015**
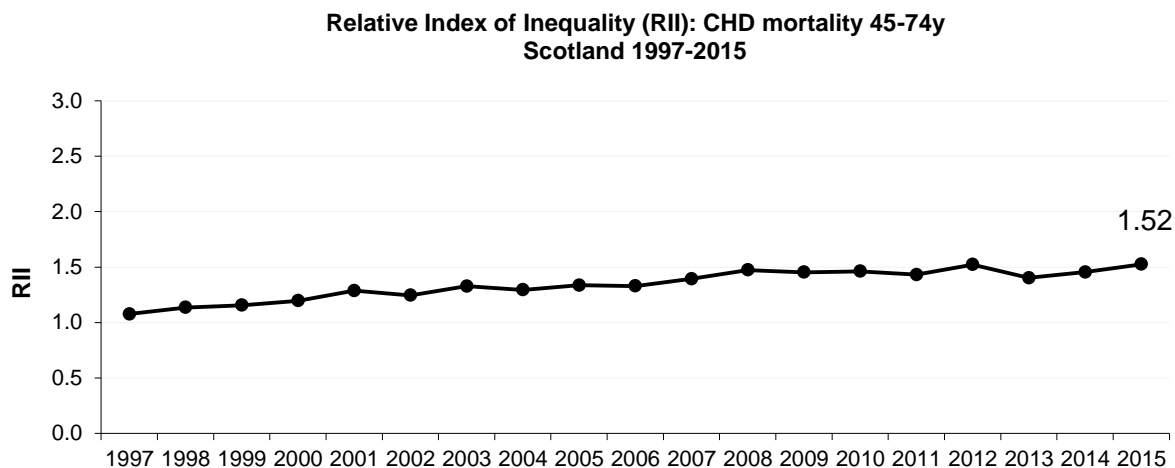
Since 1997, CHD mortality rates have typically been 3-4 times higher in the most deprived areas compared to the least deprived areas. In both 2014 and 2015, rates were 5 times higher in deprived areas.

Trends in absolute inequalities

Absolute inequality has reduced over the longer term from a high in 1998. Despite an increase in the gap in the two most recent years, the current gap is 47% lower than in 1998.

Figure 6.3

**Absolute Gap: CHD mortality 45-74 years, Scotland 1997-2015
(European Age-Standardised Rates per 100,000)**
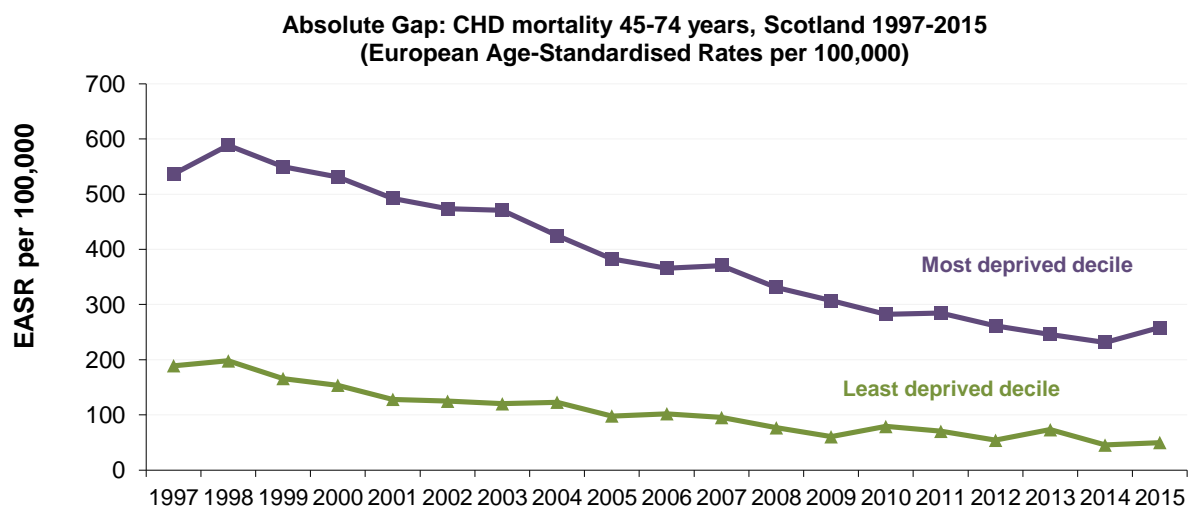
Table 6.1: Trends in coronary heart disease deaths (aged 45-74), 1997-2013

	Number of deaths	Target population size	Rate per 100,000 (EASR)
1997	5,887	1,635,590	372.5
1998	5,675	1,646,711	357.9
1999	5,389	1,658,124	338.9
2000	4,858	1,670,660	303.9
2001	4,483	1,687,422	279.3
2002	4,310	1,706,141	265.9
2003	4,197	1,727,112	256.3
2004	3,840	1,751,037	232.3
2005	3,721	1,774,865	222.3
2006	3,393	1,799,382	200.8
2007	3,374	1,827,320	196.6
2008	3,155	1,856,874	180.9
2009	2,857	1,885,693	160.7
2010	2,811	1,914,226	156.6
2011	2,592	1,941,253	142.6
2012	2,584	1,964,203	139.7
2013	2,515	1,986,202	133.7
2014	2,358	2,007,988	123.1
2015	2,463	2,026,210	127.4

Cancer - incidence rate aged under 75 years

Trends in cancer incidence

Cancer incidence among people aged under 75 has increased each year since 2005. In 2014, there were more than 21,000 new cases. This is explained in part by Scotland's ageing population.

The age-standardised cancer incidence rate was broadly stable between 1997 and 2005. Following a period of increase until 2009 the rate has fluctuated between 436.8 and 441.9 (per 100,000 people) in the years since.

Inequalities in cancer incidence, 2014

In 2014, there were 553.0 cases per 100,000 people in the most deprived areas, compared to 385.7 per 100,000 in the least deprived.

Figure 7.1
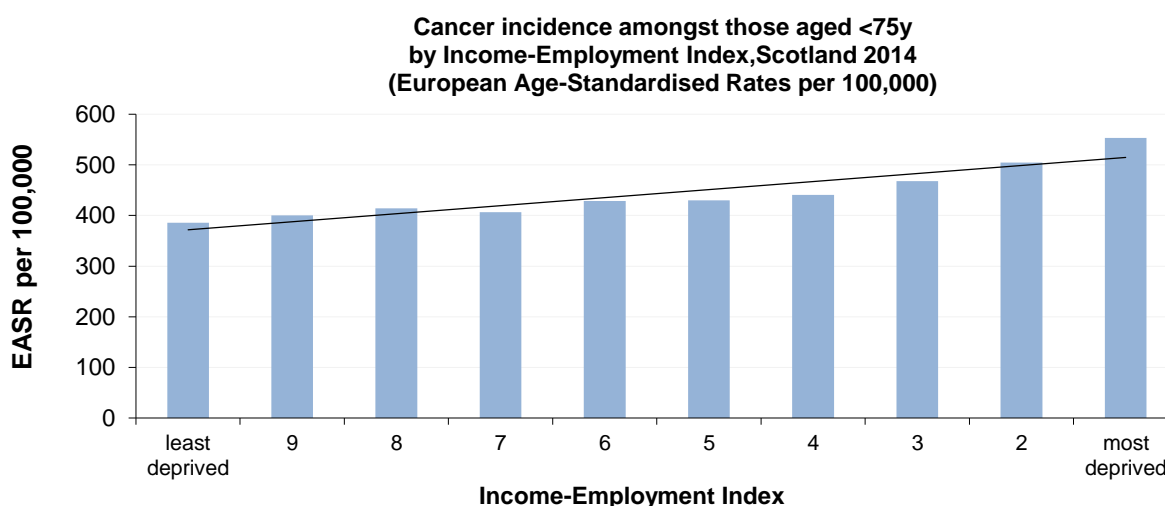
Cancer incidence is more common in the most deprived areas of Scotland. However, this is not the case for all types of cancer.[2] This is driven in part by variations in screening uptake, leading to socially patterned rises in cancer incidence and, in turn, cancer survival for some types of cancer in the least deprived areas.

As has been the case previously, of the most common types of cancer, the absolute gap between most and least deprived areas was largest for cancer of the trachea, bronchus and lung (2014 rates were 141.4 and 28.7 per 100,000 population in the most and least deprived areas respectively).

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[2] Web tables accompanying this publication include incidence inequality data for prostate cancer, breast cancer, cancer of the trachea, bronchus and lung, and colorectal cancer.

Trends in relative inequalities

Changes in the relative index of inequality over time have been minimal and show no clear pattern, fluctuating between 0.29 and 0.40.

Figure 7.2

Relative Index of Inequality (RII): Cancer incidence <75y
Scotland 1996-2014
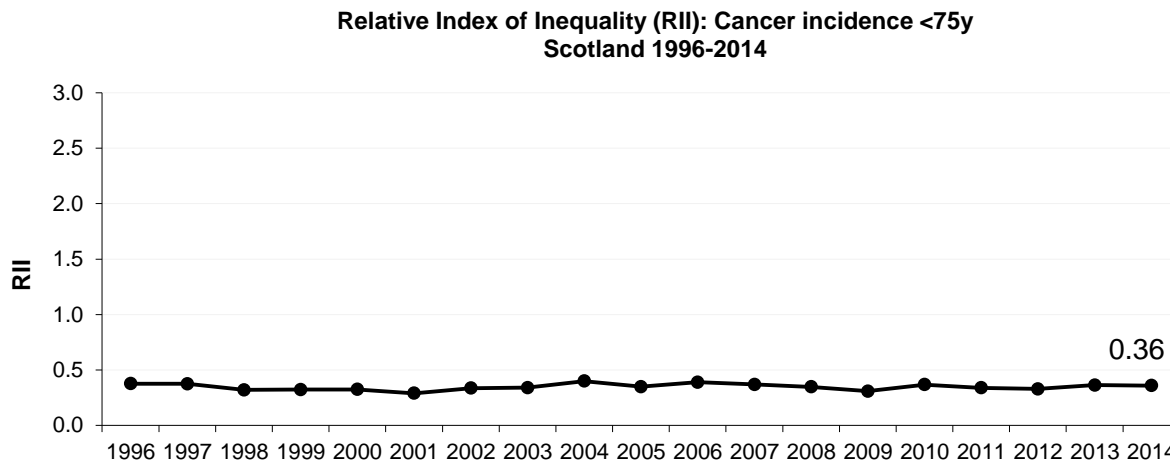
Incidence rates have typically been 30-50% higher in the most deprived areas in Scotland compared to the least deprived (43% in 2014).

Trends in absolute inequalities

Absolute inequality levels in cancer incidence have fluctuated over time. Rates in both the least and most deprived areas of Scotland have shown no clear pattern.

Figure 7.3

Absolute Gap: Cancer incidence <75y, Scotland 1996-2014
(European Age-Standardised Rates per 100,000)
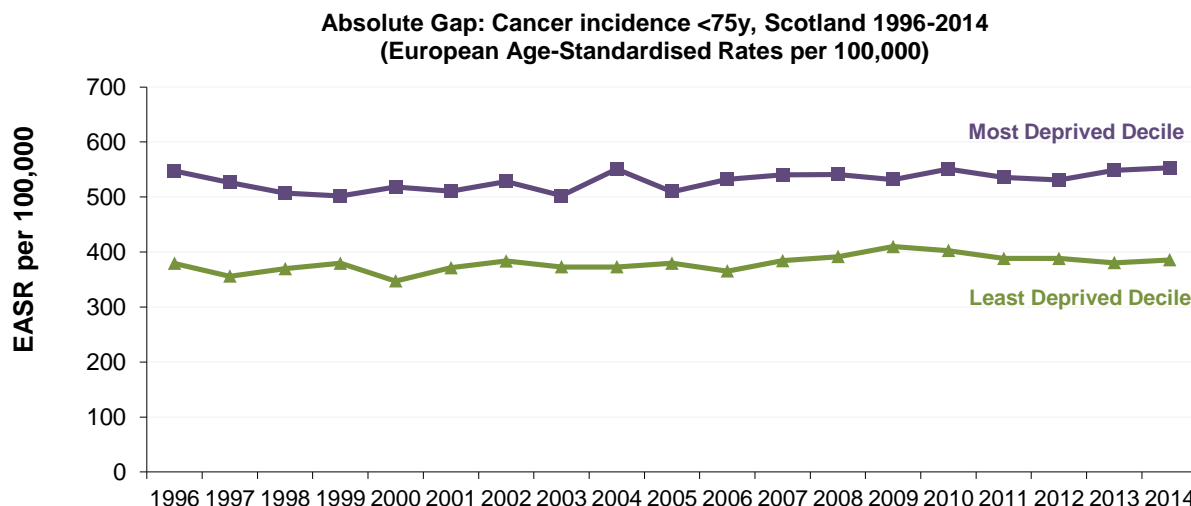
The gap was widest in 2004 (rates of 551.1 per 100,000 and 372.9 per 100,000 in the most and least deprived areas, respectively) but narrowed to its lowest level the following year (rates of 509.5 per 100,000 and 379.6 per 100,000, respectively).

Table 7.1: Trends in cancer incidence (aged < 75), 1997-2015

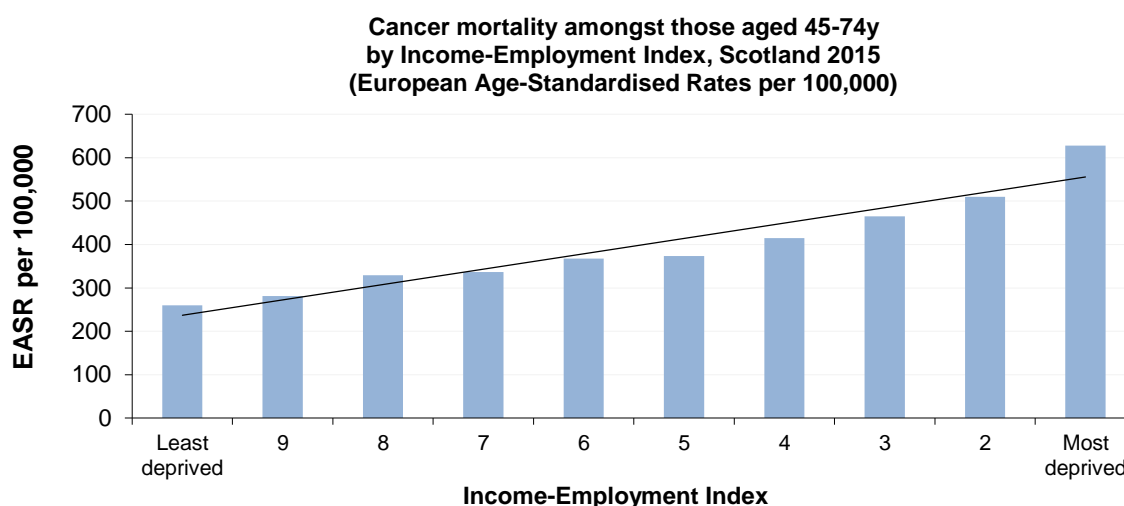|	Number of new cases	Target population size	Rate per 100,000 (EASR)
1996	18,128	4,754,906	452.7
1997	17,167	4,740,269	427.4
1998	17,109	4,729,975	424.3
1999	16,914	4,721,298	417.5
2000	17,138	4,708,667	420.6
2001	17,147	4,703,661	418.9
2002	17,530	4,701,958	423.6
2003	17,574	4,702,431	420.8
2004	18,159	4,714,233	430.3
2005	17,987	4,735,320	421.9
2006	18,167	4,752,425	423.3
2007	18,775	4,783,452	430.8
2008	19,449	4,811,453	439.7
2009	19,999	4,835,007	446.6
2010	20,015	4,858,058	441.9
2011	20,208	4,888,316	441.3
2012	20,296	4,895,114	436.8
2013	20,598	4,903,074	437.7
2014	21,004	4,914,362	441.1

Cancer- deaths aged 45-74 years

Trends in cancer deaths

The cancer mortality rate amongst those aged 45-74 years has fallen by around 26% since 1996 (from 529.8 to 392.9 per 100,000 population, in 2015). The number of deaths each year has also reduced in this period, from around 8,400 to 7,600.

Inequalities in cancer deaths, 2015

Of people in the 45-74 year age group, those in Scotland's most deprived areas are more than twice as likely to die of cancer than those in the least deprived (627.8 deaths per 100,000 population compared to 259.7 per 100,000 population, in 2015).

Figure 8.1

Cancer mortality amongst those aged 45-74y
by Income-Employment Index, Scotland 2015
(European Age-Standardised Rates per 100,000)

As is the case for cancer incidence, inequality levels vary when examining deaths by cancer type[3]. As described in the previous section, variations in screening uptake may lead to socially patterned rises in cancer incidence and, in turn, cancer survival (therefore having a possible effect on mortality) for some types of cancer.

The most considerable differences between rates in the most and least deprived areas are observed for cancer of the trachea, bronchus and lung (237.4 compared to 52.1 per 100,000 population).

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[3] Web tables accompanying this publication include mortality inequality data for prostate cancer, breast cancer, cancer of the trachea, bronchus and lung, and colorectal cancer.

Trends in relative inequalities

Relative inequalities for this indicator have increased over time with the highest value in the time series recorded in 2014 (0.91). The latest RII figure (0.85) compares with a range of 0.68-0.81 seen in the years between 1997 and 2006.

Figure 8.2

Relative Index of Inequality (RII): Cancer mortality 45-74y
Scotland 1996-2015
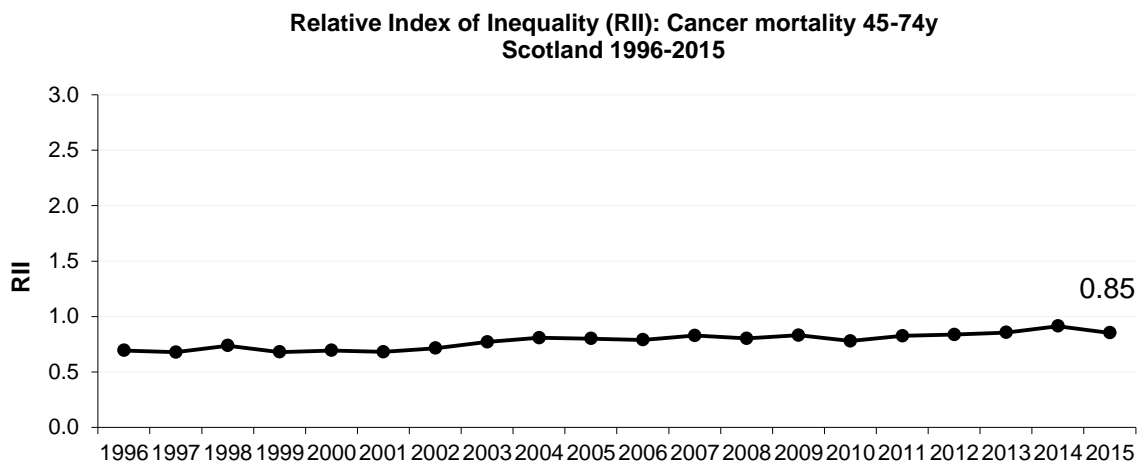
Cancer mortality rates (aged 45-74) were 2.4 times higher in the most deprived compared to least deprived areas in 2015. In 1996, rates were 2.0 times higher in the most deprived areas.

Trends in absolute inequalities

Levels of absolute inequality for cancer deaths have fluctuated since 1997. The gap was narrowest in 2010 when rates were 310.3 per 100,000 in the least deprived areas and 615.1 in the most deprived areas.

Figure 8.3

Absolute Gap: Cancer mortality 45-74y, Scotland 1996-2015
(European Age-Standardised Rates per 100,000)
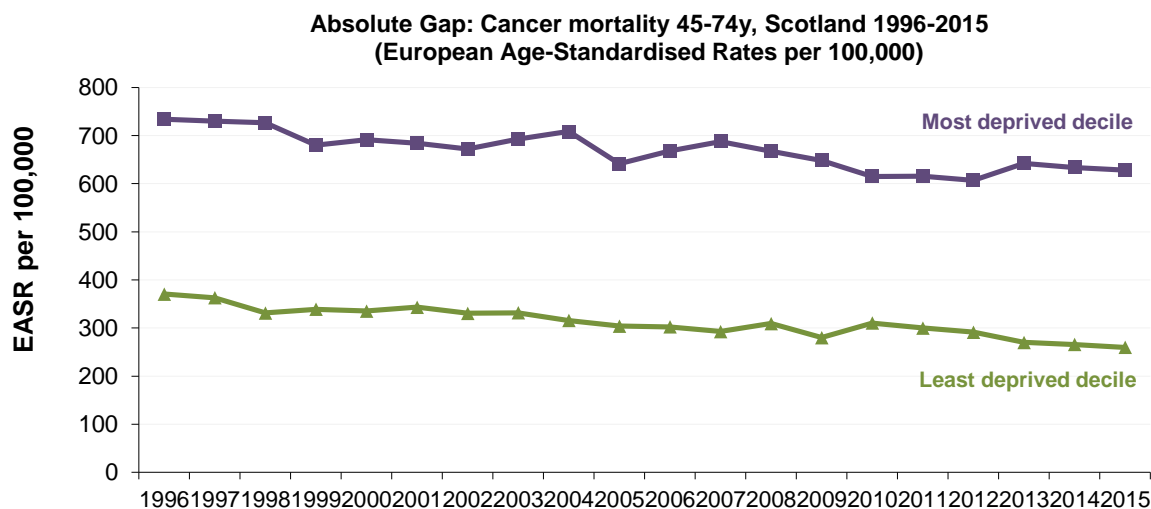
Table 8.1: Trends in cancer mortality (aged 45-74), 1997-2015

	Number of deaths	Target population size	Rate per 100,000 (EASR)
1996	8,402	1,631,224	529.8
1997	8,068	1,635,590	509.1
1998	7,995	1,646,711	501.9
1999	7,904	1,658,124	494.4
2000	7,776	1,670,660	484.8
2001	7,903	1,687,422	489.2
2002	7,850	1,706,141	481.2
2003	7,706	1,727,112	467.4
2004	7,678	1,751,037	460.9
2005	7,606	1,774,865	451.8
2006	7,486	1,799,382	441.3
2007	7,569	1,827,320	439.5
2008	7,536	1,856,874	431.0
2009	7,481	1,885,693	421.2
2010	7,394	1,914,226	411.1
2011	7,428	1,941,253	408.5
2012	7,514	1,964,203	406.2
2013	7,520	1,986,202	399.8
2014	7,445	2,007,988	389.6
2015	7,621	2,026,210	392.9

Alcohol - first hospital admission aged under 75 years

Trends in alcohol-related admissions

The rate of first hospital admissions for alcohol-related conditions amongst those aged under 75 years has fallen over time, with a 26% decrease between 1996 and 2015 (289.8 and 215.3 cases per 100,000 respectively).

Inequalities in alcohol-related admissions, 2015

First alcohol-related admissions are almost 5 times more common in the most deprived areas of Scotland compared to the least (442.2 compared to 90.0 cases per 100,000).

Figure 9.1

Alcohol related hospital admissions amongst those aged <75y
by Income-Employment Index, Scotland 2015
(European Age-Standardised Rates per 100,000)
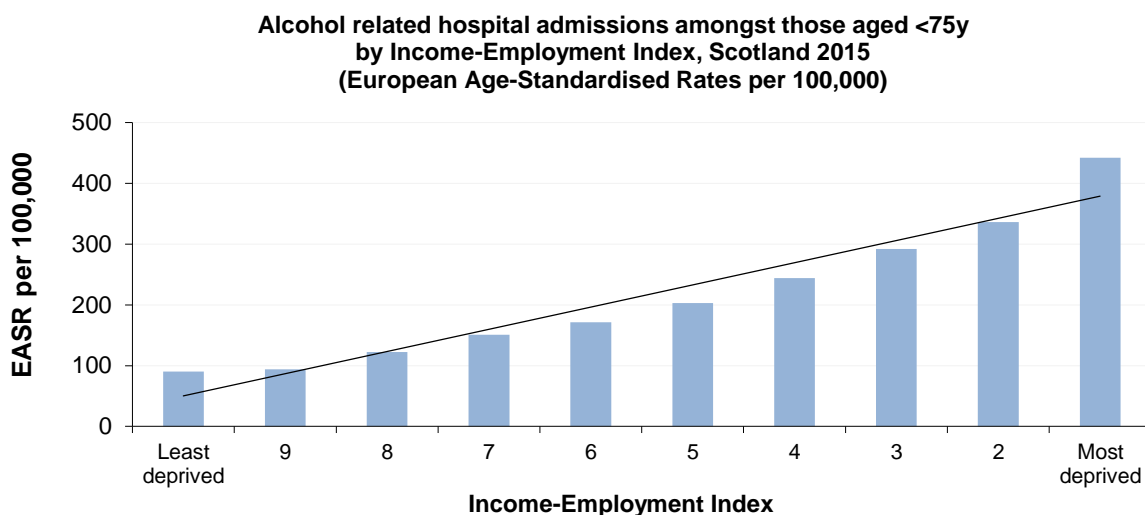
Trends in relative inequalities

A general downward trend was observed in relative inequalities for first alcohol-related admissions between 1997 and 2008 (RII declining from 1.90 to 1.70). Since then, there has been very little change in the RII figure (1.69 in 2015).
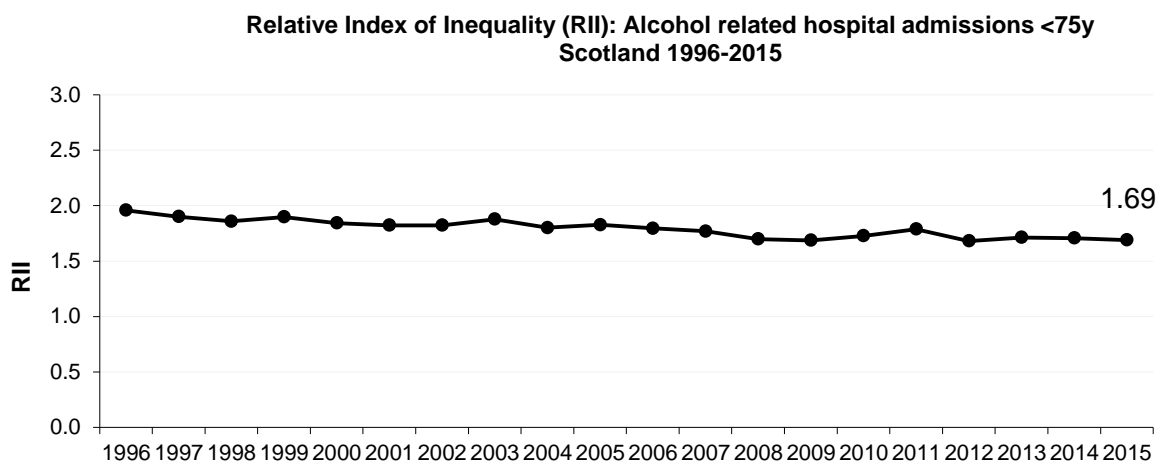
Figure 9.2

Relative Index of Inequality (RII): Alcohol related hospital admissions <75y Scotland 1996-2015

In 1997, first alcohol-related admission rates were seven times higher in the most deprived areas compared to the least deprived. For the last seven years, rates have been around five times higher in the most deprived areas compared to the least deprived.

Trends in absolute inequalities

Absolute inequality in first alcohol-related admissions has generally reduced over time, and is currently the lowest it has been in the time series.

The reduction over the long term in both relative and absolute inequality is largely due to the fall in admissions in the most deprived areas.
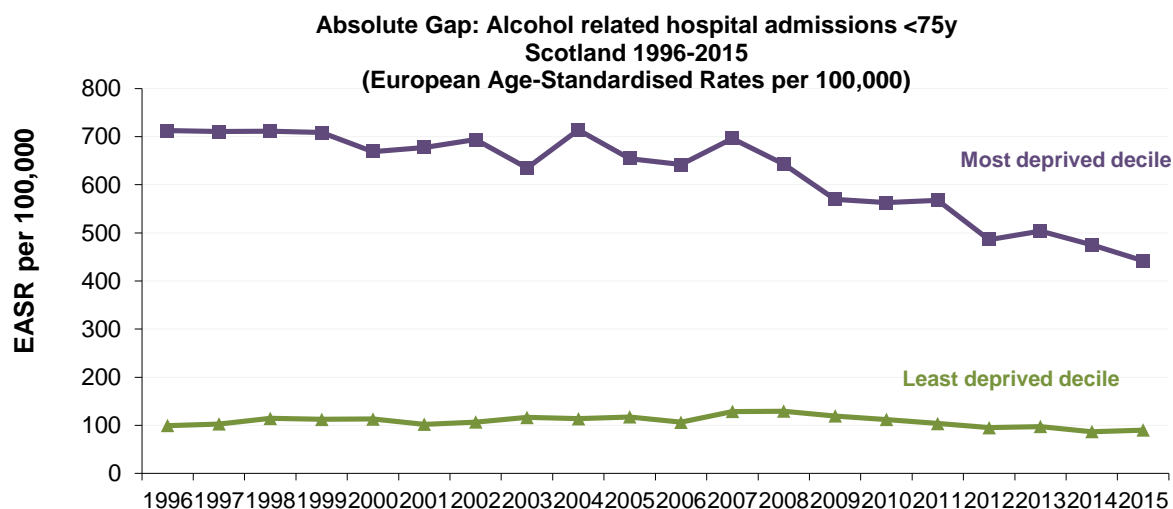
Figure 9.3

Absolute Gap: Alcohol related hospital admissions <75y Scotland 1996-2015 (European Age-Standardised Rates per 100,000)

Table 9.1: Trends in alcohol-related hospital admissions (aged < 75), 1997-2015

	Number of admissions	Target population size	Rate per 100,000 (EASR)
1996	12,787	4,754,906	289.8
1997	12,918	4,740,269	292.6
1998	13,316	4,729,975	300.7
1999	13,217	4,721,298	298.2
2000	12,786	4,708,667	286.6
2001	13,469	4,703,661	300.3
2002	13,492	4,701,958	299.9
2003	12,996	4,702,431	290.0
2004	14,084	4,714,233	312.5
2005	13,346	4,735,320	293.8
2006	13,595	4,752,425	295.3
2007	14,641	4,783,452	313.5
2008	14,222	4,811,453	302.3
2009	12,891	4,835,007	272.9
2010	12,307	4,858,058	258.7
2011	12,264	4,888,316	256.2
2012	11,556	4,895,114	240.9
2013	11,225	4,903,074	236.8
2014	10,759	4,914,362	223.2
2015	10,418	4,935,283	215.3

Alcohol - deaths aged 45-74 years

Trends in alcohol-related deaths

Alcohol-related deaths among those aged 45-74 years fell from a peak of 1,899 in 2006 to a low of 1,435 in 2013. In the past two years, however, alcohol-related deaths have increased again

Inequalities in alcohol-related deaths, 2015

The mortality rate in Scotland's most deprived areas is over five times higher than that observed in the least deprived (204.6 compared to 37.1 per 100,000 population).

Figure 10.1

Alcohol related mortality amongst those aged 45-74y
by Income-Employment Index,Scotland 2015
(European Age-Standardised Rates per 100,000)
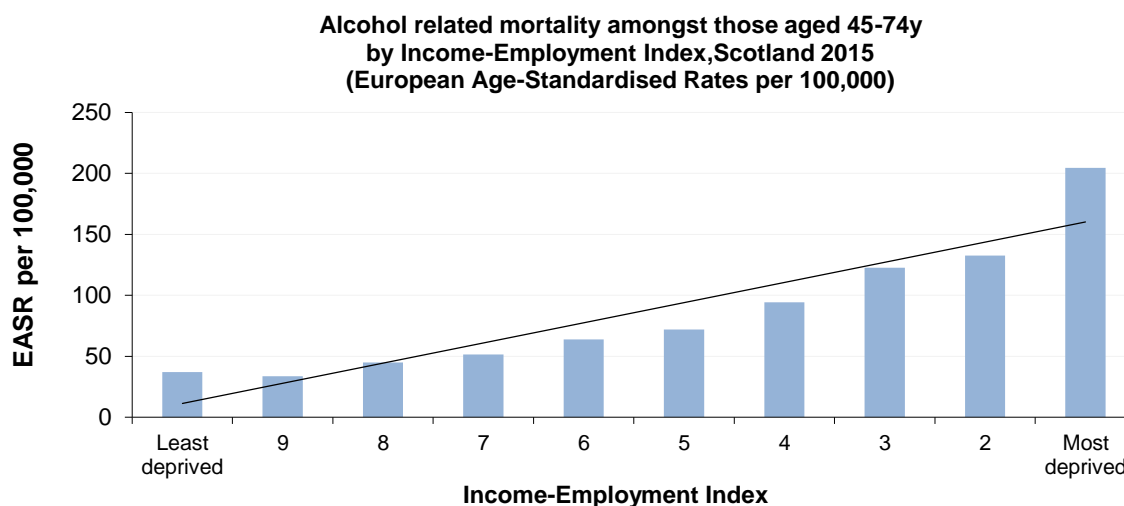
Trends in relative inequalities

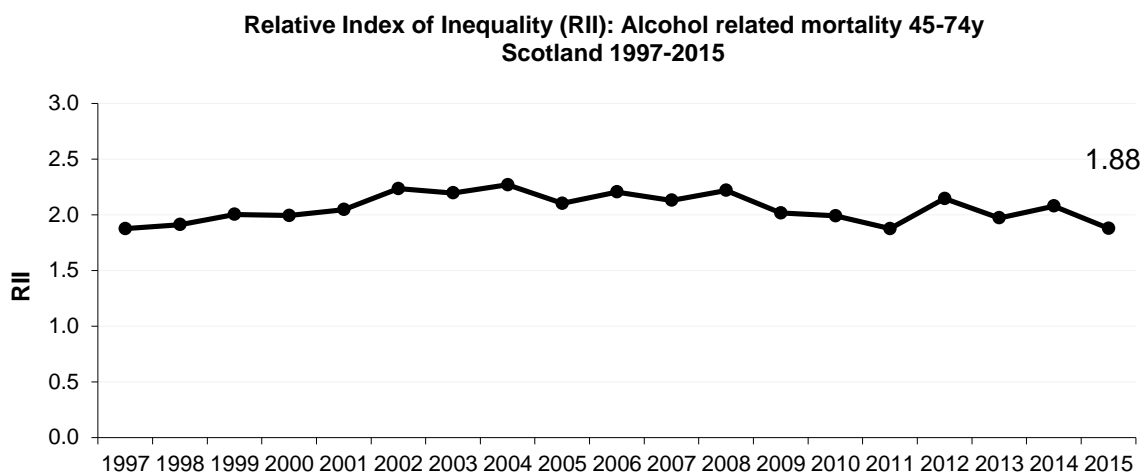Relative inequalities in alcohol related deaths increased between 1997 and 2002 (RII increasing from 1.88 to 2.23). Following recent fluctuations, relative inequalities are currently the same as they were in 1997 (1.88).

Figure 10.2

**Relative Index of Inequality (RII): Alcohol related mortality 45-74y
Scotland 1997-2015**

Over time the relative range between the most and least deprived areas has fluctuated, peaking in 2002 when death rates were more than twelve times higher in the most deprived areas. It is currently at the lowest it has been in the times series, with alcohol related death 5.5 times higher in the most deprived areas compared to the least deprived.

Trends in absolute inequalities

Although alcohol-related deaths in the least deprived areas have remained reasonably static since 1997, there has been considerable fluctuation in deaths in the most deprived areas.

Following notable highs in 2002 and 2006, and a recent low in 2013, the 2015 alcohol related mortality rate in the most deprived areas is currently similar to that seen in 1998.
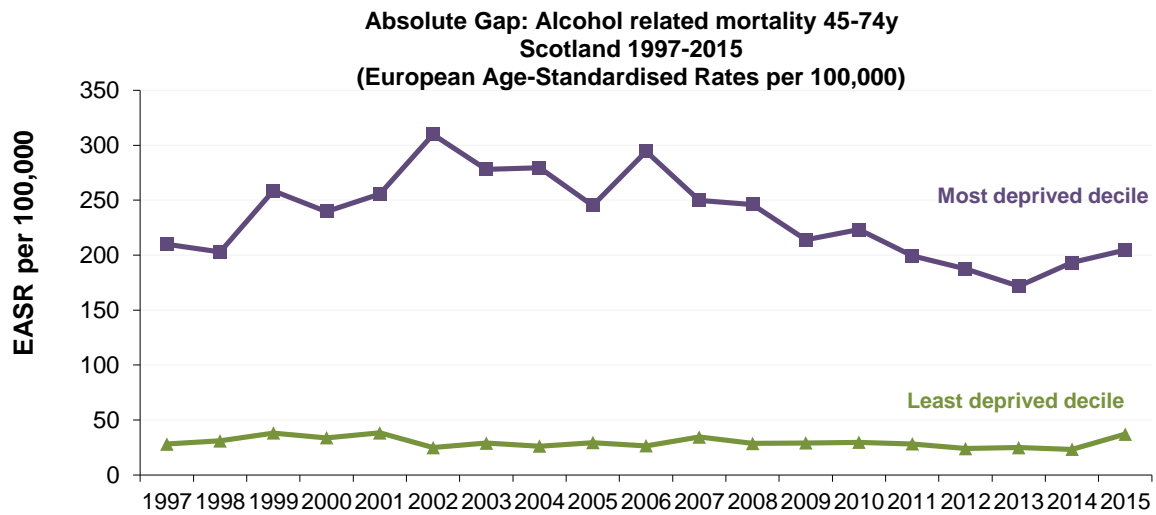
Figure 10.3

Absolute Gap: Alcohol related mortality 45-74y
Scotland 1997-2015
(European Age-Standardised Rates per 100,000)

Table 10.1: Trends in alcohol-related deaths (aged 45-74), 1997-2013

	Number of deaths	Target population size	Rate per 100,000 (EASR)
1997	1,318	1,635,590	81.1
1998	1,415	1,646,711	86.4
1999	1,508	1,658,124	91.5
2000	1,489	1,670,660	89.8
2001	1,565	1,687,422	93.5
2002	1,753	1,706,141	103.5
2003	1,749	1,727,112	102.1
2004	1,764	1,751,037	101.5
2005	1,790	1,774,865	101.6
2006	1,899	1,799,382	106.7
2007	1,801	1,827,320	99.5
2008	1,782	1,856,874	97.0
2009	1,611	1,885,693	86.4
2010	1,674	1,914,226	88.5
2011	1,571	1,941,253	82.4
2012	1,441	1,964,203	74.3
2013	1,435	1,986,202	73.0
2014	1,510	2,007,988	76.0
2015	1,665	2,026,210	83.2

All-cause mortality aged 15-44 years

Trends in all-cause mortality aged 15-44

Despite an increase in the last year, the mortality rate of those aged 15-44 has reduced from 118.3 per 100,000 in 2006 to 101.2 per 100,000 in 2015. Between 1997 and 2005, the mortality rate ranged between 109.3 and 122.0 per 100,000.
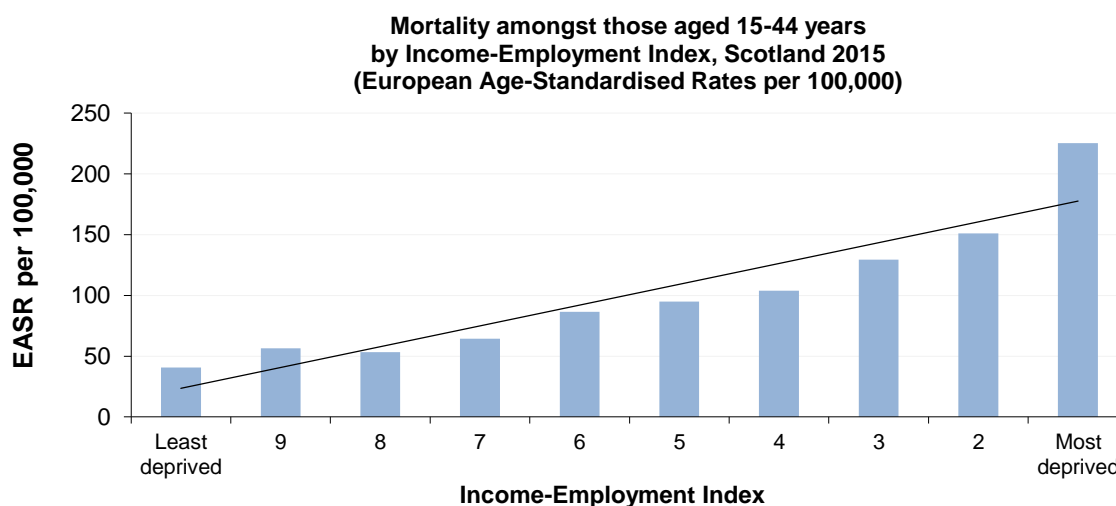
There were a total of 1,976 deaths of people aged 15-44 in Scotland in 2015, compared to the high point of 2,482 in 2006. The 1,976 deaths in 2013 included 306 probable suicides, 442 drug-related deaths and 28 deaths from assault.

While the rates of probable suicide and deaths from assault in this age group have declined in recent years (reaching their lowest levels in 2015 and 2014 respectively), drug-related death have increased since 1997. In 2015, the drug-related death rate was 22.8 per 100,000, this compares with only 8.9 per 100,000 in 1997.

Inequalities in all-cause mortality aged 15-44, 2015

The mortality rate amongst people aged 15-44 years is over five times higher in the most deprived areas (225.2 per 100,000) compared to the least deprived (40.7 per 100,000).

Figure 11.1

Mortality amongst those aged 15-44 years
by Income-Employment Index, Scotland 2015
(European Age-Standardised Rates per 100,000)

Trends in relative inequalities

There was a gradual increase in relative inequalities between 1997 and 2002. Any trend since then has been less clear, although the three highest datapoints in the time series have all occurred in the last five years.

Since 1999, death rates have typically been between five and six times higher in the most deprived areas compared to the least deprived.

Figure 11.2
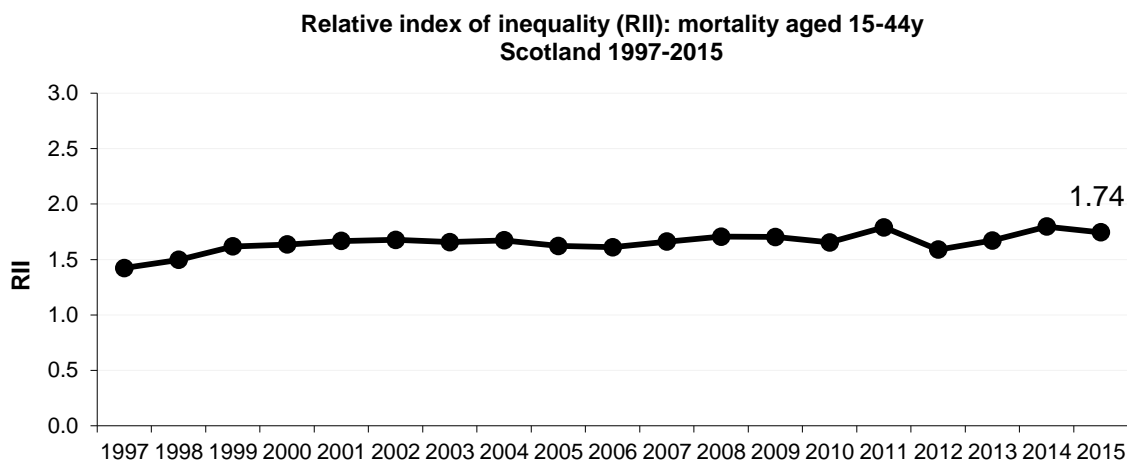
**Relative index of inequality (RII): mortality aged 15-44y
Scotland 1997-2015**

Trends in absolute inequalities

The absolute gap between the most and least deprived areas in all-cause mortality between ages 15 and 44 reached its lowest level in 2013, with death rates of 199.7 and 40.1 per 100,000 respectively (a gap of 159.6 per 100,000).

In the two years since 2013, the mortality rate between ages 15 and 44 in the most deprived areas has increased and the gap between the most and least deprived areas has widened to 184.5 per 100,000.
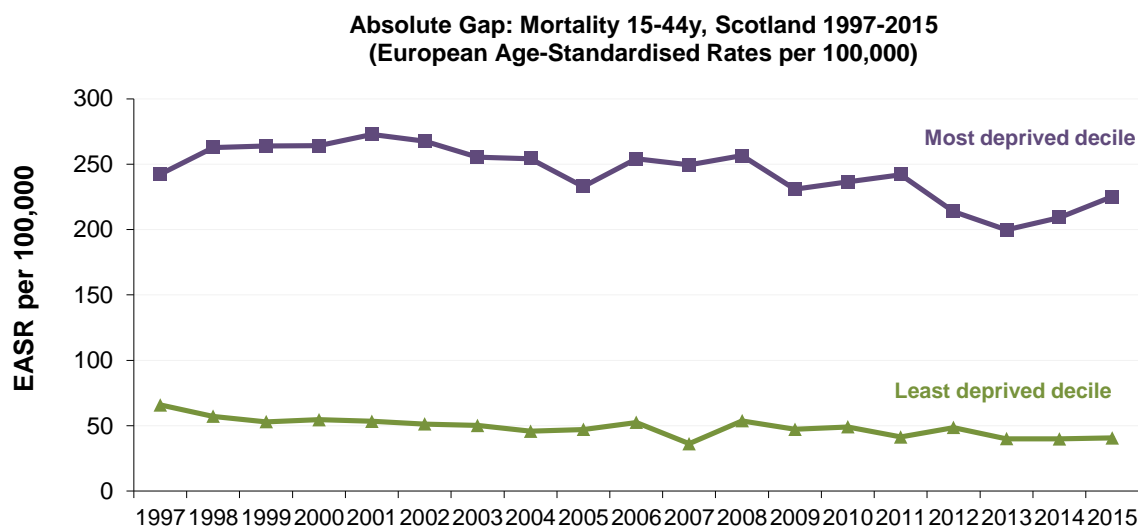
Figure 11.3

Absolute Gap: Mortality 15-44y, Scotland 1997-2015
(European Age-Standardised Rates per 100,000)

Table 11.1: Trends in all-cause mortality (aged 15-44), 1997-2015

	Number of all-causes deaths	Target population size	Rate per 100,000 (EASR)
1997	2,440	2,158,030	116.3
1998	2,507	2,142,787	119.4
1999	2,507	2,129,794	119.0
2000	2,501	2,118,568	118.7
2001	2,509	2,111,242	119.0
2002	2,566	2,102,670	122.0
2003	2,461	2,094,408	116.9
2004	2,409	2,088,563	114.7
2005	2,305	2,091,415	109.3
2006	2,482	2,091,581	118.3
2007	2,461	2,097,902	117.5
2008	2,443	2,096,495	117.5
2009	2,389	2,092,065	115.1
2010	2,229	2,087,635	108.6
2011	2,262	2,092,311	110.8
2012	2,071	2,077,902	102.8
2013	1,990	2,064,867	100.1
2014	1,904	2,053,897	96.8
2015	1,976	2,053,401	101.2

Table 11.2: Trends in deaths from assault, drug-related deaths and probable suicides, 1997-2015

	Deaths from assault		Drug related deaths		Suicides	
	Number	EASR per 100,000	Number	EASR per 100,000	Number	EASR per 100,000
1997	56	2.6	196	8.9	518	23.9
1998	65	3.0	227	10.6	526	24.4
1999	86	4.0	274	12.9	529	24.7
2000	60	2.9	268	12.7	541	25.6
2001	63	3.0	289	13.8	531	25.3
2002	76	3.6	345	16.7	539	25.7
2003	71	3.4	282	13.6	456	21.8
2004	78	3.8	311	15.2	475	22.7
2005	50	2.4	277	13.4	436	21.0
2006	83	4.0	350	17.1	435	20.9
2007	54	2.6	392	19.1	453	21.8
2008	53	2.5	477	23.3	480	23.4
2009	47	2.3	436	21.3	432	20.8
2010	54	2.6	384	18.9	423	20.5
2011	53	2.6	454	22.5	420	20.5
2012	37	1.9	416	20.8	375	18.3
2013	35	1.7	354	17.9	356	17.7
2014	22	1.0	416	21.1	309	15.4
2015	28	1.4	442	22.8	306	15.3

Low Birthweight

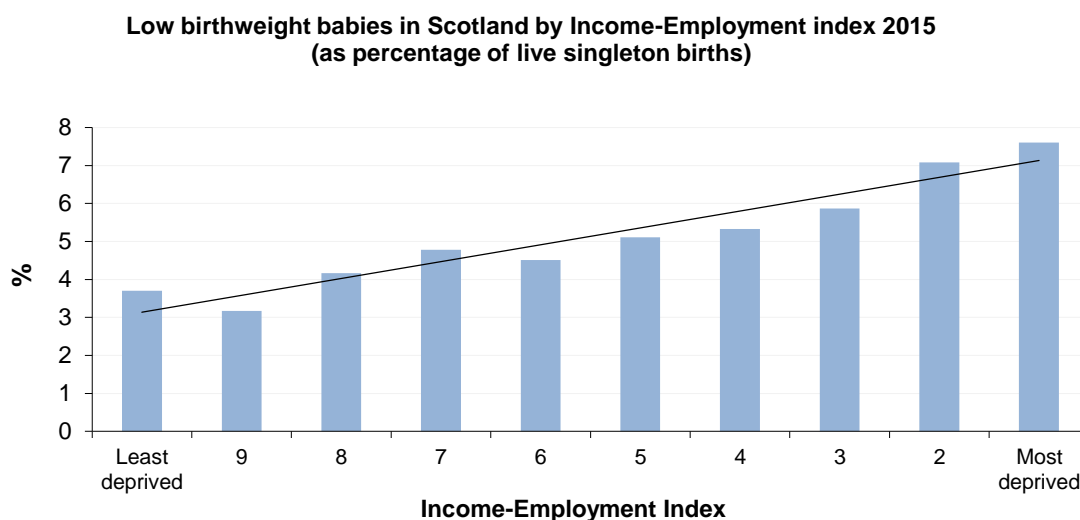### Trends in low birthweight

Around 2,800 low birthweight babies were born in Scotland in 2015.

The percentage of babies born with low birthweight has ranged between 5.0% and 5.3% in the years since 2009. Between 1996 and 2008, the percentage varied between 5.5% and 6.0%.

Inequalities in low birthweight 2015

In 2015, 7.6% of live singleton births in the most deprived areas were recorded as low birthweight. This is more than double the percentage in the least deprived areas (3.7%).

Figure 12.1

**Low birthweight babies in Scotland by Income-Employment index 2015
(as percentage of live singleton births)**

Trends in relative inequalities

Relative inequalities in low birthweight are similar in 2015 to those observed at the start of the time series (0.88 and 0.84 respectively). In the intervening years the RII has ranged between 0.76 and 1.06 with little clear trend.

Figure 12.2

Relative index of inequality (RII): Low birthweight babies in Scotland 1996-2015
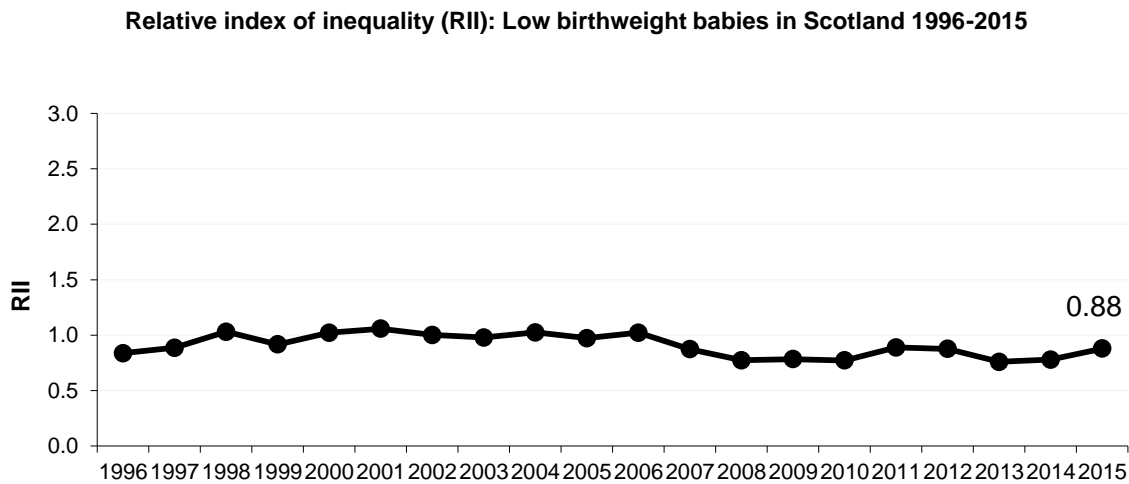
Trends in absolute inequalities

Overall, the absolute gap between the most and deprived areas has reduced from its widest point in 2004 (5.7 percentage points). However, the gap has increased in both of the last two years and currently stands at 3.9 percentage points.

The narrowing and widening of the gap has tended to be driven by changes in the most deprived decile, as the least deprived decile has remained broadly stable since the beginning of the time series.
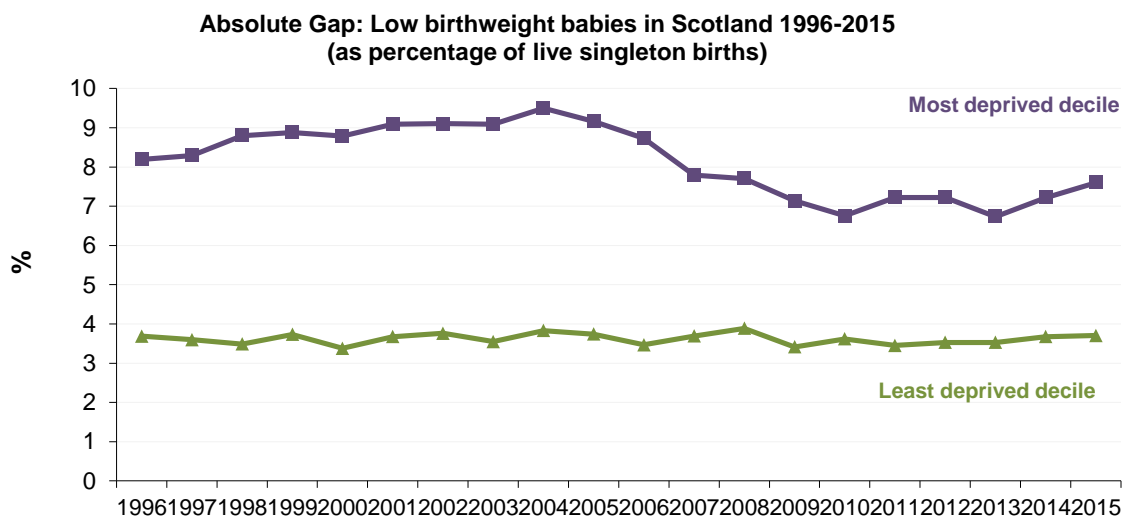
Figure 12.3

Absolute Gap: Low birthweight babies in Scotland 1996-2015 (as percentage of live singleton births)

Table 12.1: Trends in low birthweight, 1996-2015

	Number of low birthweight babies	Target population size	% of live singleton births
1996	3,066	55,861	5.5
1997	3,149	56,982	5.5
1998	3,108	55,152	5.6
1999	3,098	52,726	5.9
2000	2,906	51,057	5.7
2001	2,848	49,744	5.7
2002	2,910	48,950	5.9
2003	3,026	50,069	6.0
2004	3,030	51,807	5.8
2005	3,058	51,436	5.9
2006	2,939	52,467	5.6
2007	3,095	55,271	5.6
2008	3,134	56,925	5.5
2009	2,893	56,107	5.2
2010	2,816	56,123	5.0
2011	2,946	56,037	5.3
2012	2,775	55,369	5.0
2013	2,684	53,219	5.0
2014	2,748	54,087	5.1
2015	2,814	52,766	5.3

Healthy birthweight

Trends in healthy birthweight babies

In 2015, 90% of babies were of healthy birthweight (of appropriate weight for their gestational age).

In each year of the time series, either 89% or 90% of babies have been of healthy birthweight.

Inequalities in healthy birthweight babies 2015

In 2015, there was a slightly higher percentage of cases of healthy birthweight in the least deprived areas compared to the most deprived areas (90.5% versus 89.8%)
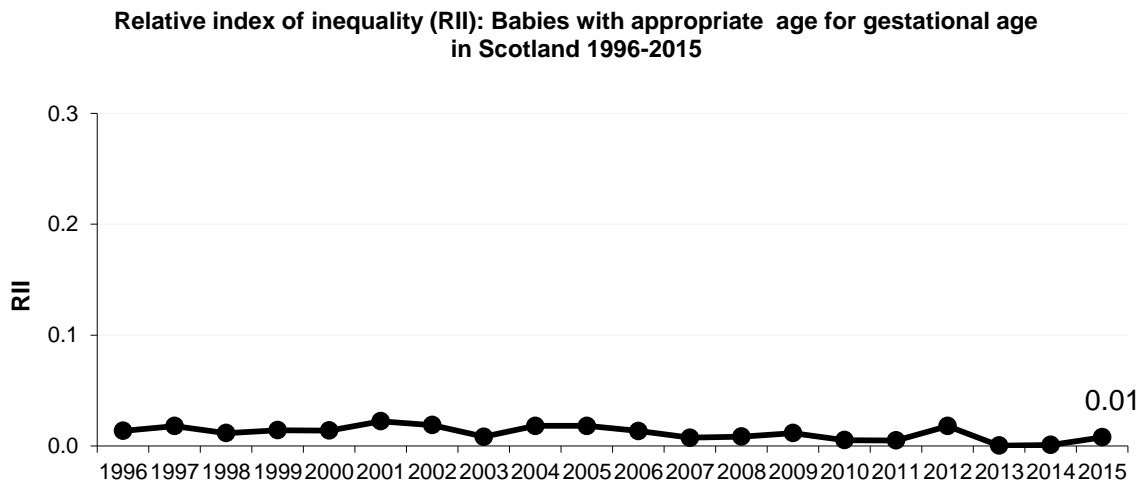
Figure 13.1

**Babies with appropriate weight for gestational age in Scotland by Income-Employment index 2015
(as percentage of live singleton births)**

Trends in relative inequalities

Relative inequalities have been consistently low over the times series with the RII for 2015 standing at 0.01.

Figure 13.2

Relative index of inequality (RII): Babies with appropriate age for gestational age in Scotland 1996-2015

Trends in absolute inequalities

The absolute gap between the percentage of healthy birthweight babies in the most and least deprived deciles has been consistently low across the full time series.
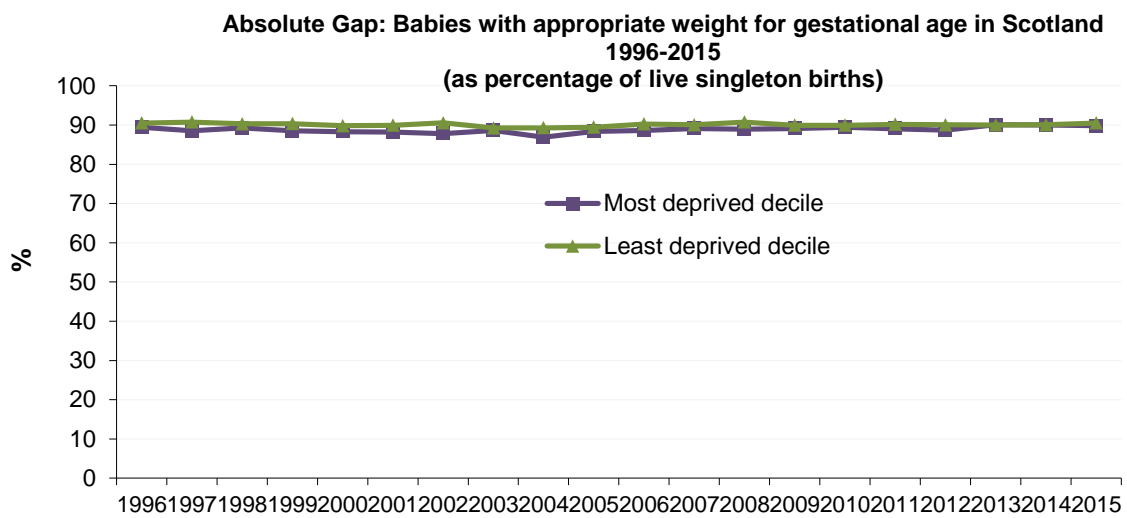
Figure 13.3

Absolute Gap: Babies with appropriate weight for gestational age in Scotland 1996-2015 (as percentage of live singleton births)

Table 13.1: Trends in healthy birthweight, 1996-2015

	Number appropriate for gestational age	Target population size	% of live singleton births
1996	49,989	55,759	89.7
1997	51,113	56,895	89.8
1998	49,303	55,075	89.5
1999	47,048	52,655	89.4
2000	45,292	50,978	88.8
2001	44,355	49,666	89.3
2002	43,571	48,853	89.2
2003	44,539	49,956	89.2
2004	45,842	51,694	88.7
2005	45,592	51,303	88.9
2006	46,678	52,330	89.2
2007	49,059	55,080	89.1
2008	50,658	56,733	89.3
2009	49,880	55,907	89.2
2010	50,236	56,027	89.7
2011	49,997	55,958	89.3
2012	49,454	55,249	89.5
2013	47,650	53,032	89.9
2014	48,390	53,737	90.0
2015	47,222	52,452	90.0

Self-assessed health

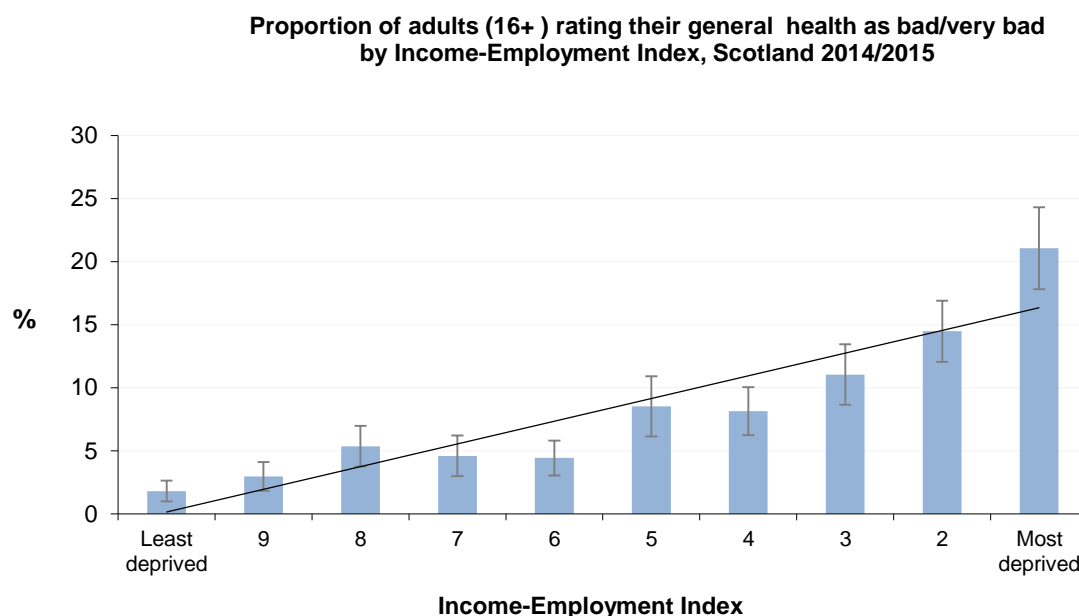### Trends in self-assessed health (adults aged 16+)

In 2014/2015 8.2% of adults rated their health as 'bad' or 'very bad'. This is a statistically significant increase from the equivalent percentage in 2008/2009 (7.1%).

Inequalities in self-assessed health 2014/2015

Looking at both equivalised income deciles and IEI deciles there were clear inequalities in self-assessed health.

In 2014/2015, adults in the most deprived areas were around twelve times more likely to report poor health than those in the least deprived areas (21.1% versus 1.8%).

Figure 14.1

Proportion of adults (16+) rating their general health as bad/very bad by Income-Employment Index, Scotland 2014/2015

Similarly, adults in the lowest income group were around 8 times more likely to report poor health than those with the highest income (21.1% versus 2.5%).

Figure 14.2
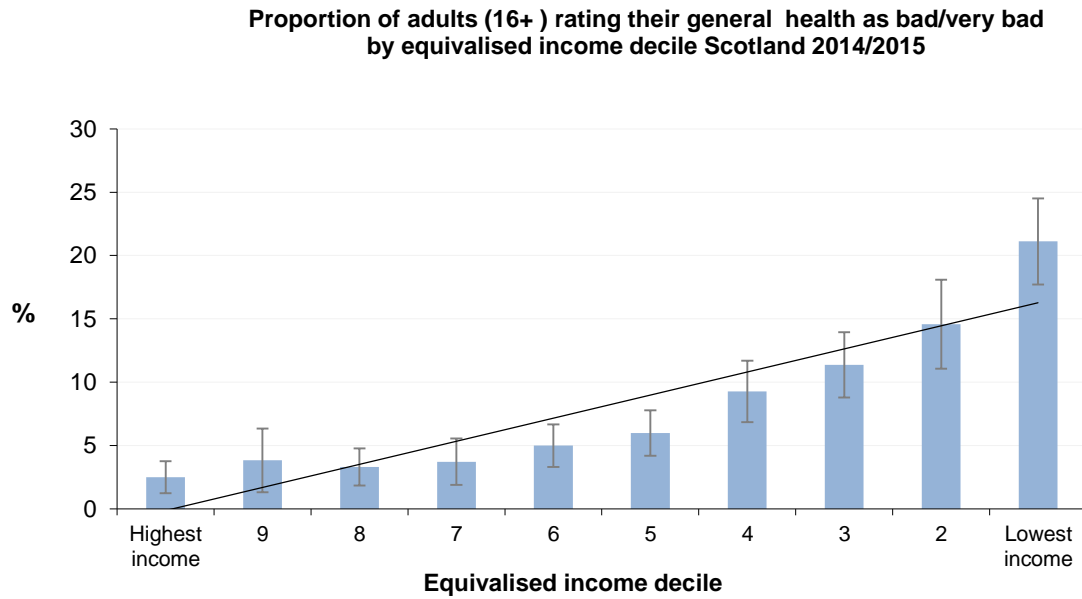
Proportion of adults (16+) rating their general health as bad/very bad
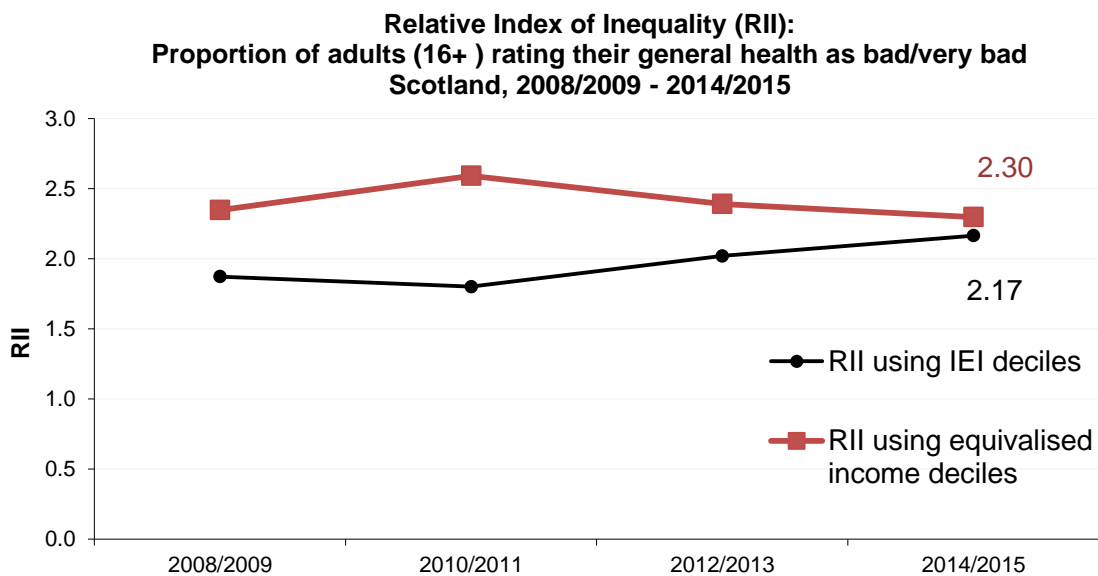by equivalised income decile Scotland 2014/2015

Trends in relative inequalities

When assessed using IEI deciles, relative inequality has increased since 2008/09. In 2014/2015 the IEI RII was 2.17, in 2008/2009 it was 1.87.

In contrast, the 2014/2015 RII calculated using equivalised income deciles (2.30) is similar that observed in 2008/2009 (2.35). The equivalised income RII has generally been higher than that calculated using IEI.

Figure 14.3

Relative Index of Inequality (RII):
Proportion of adults (16+) rating their general health as bad/very bad
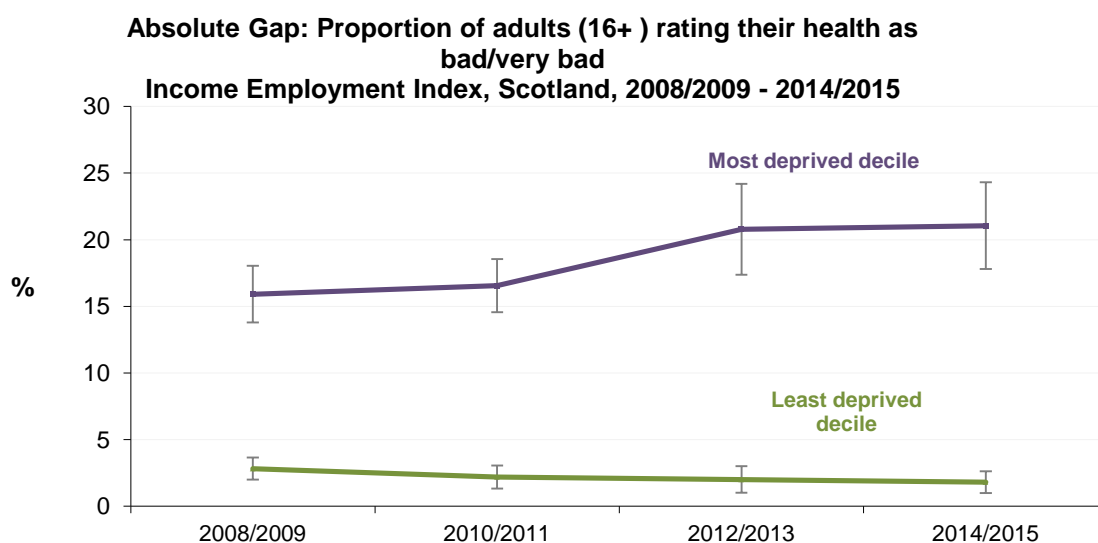Scotland, 2008/2009 - 2014/2015

Trends in absolute inequalities

The absolute gap in the percentage of adults reporting poor health has increased between adults with the lowest and highest incomes, as well as between adults living in the most and least deprived areas.

In 2014/2015, the percentage of adults living in the most deprived areas reporting poor health was 19.2 percentage points higher than those in the least deprived areas (21.1% vs 1.8%). This compares with a gap of 13.1 percentage points in 2008/2009.

Figure 14.4

Absolute Gap: Proportion of adults (16+) rating their health as bad/very bad
Income Employment Index, Scotland, 2008/2009 - 2014/2015

The percentage of adults in the lowest income decile reporting poor health was 18.6 percentage points higher than those in the lowest income decile (21.1% vs 2.5%). This compares with a gap of 14.5 percentage points in 2008/2009.
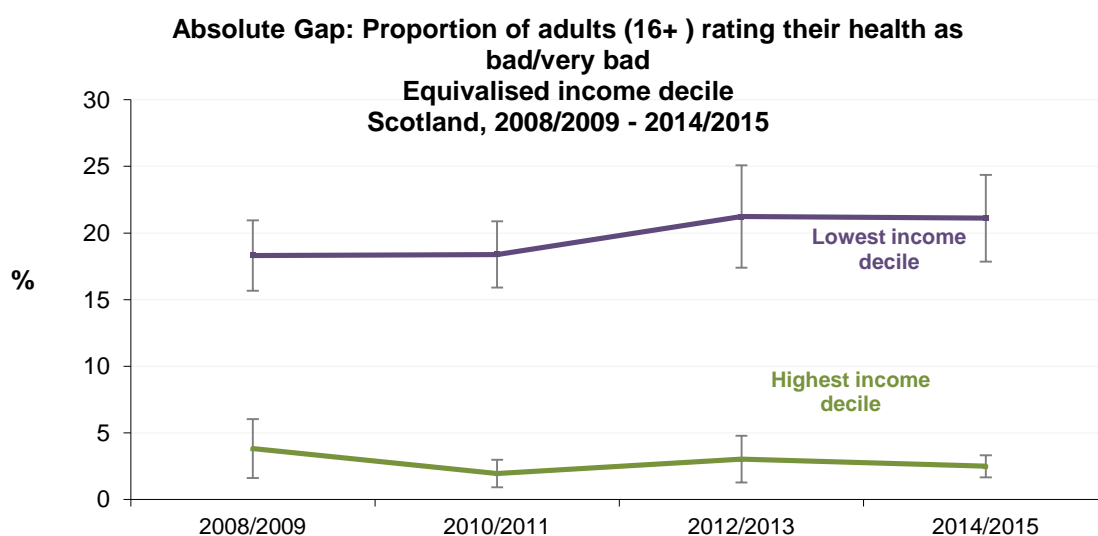
Figure 14.5

Absolute Gap: Proportion of adults (16+) rating their health as bad/very bad
Equivalised income decile
Scotland, 2008/2009 - 2014/2015

Table 14.1: Trends in self-assessed health, 2008/2009 to 2014/2015

Year	% of adults rating general health as bad/very bad	Lower 95% confidence limit (%)	Upper 95% confidence limit (%)
2008/2009	7.1	6.6	7.6
2010/2011	7.6	7.0	8.1
2012/2013	8.6	7.9	9.4
2014/2015	8.2	7.5	8.9

Limiting long-term conditions

Trends in limiting long-term conditions (adults aged 16+)

A limiting long term condition is defined as a physical or mental health condition or illness lasting 12 months or more that reduces an individual's ability to carry-out day-to-day activities.

The percentage of adults reporting a limiting long term condition has increased from 26% in 2008/2009 to 32% in 2015/2016.

Inequalities in limiting long-term conditions 2014/2015

In 2014/2015 there were similar levels of inequalities observed between IEI deciles as between equivalised income deciles.

In 2014/2015, adults in the most deprived areas were 2.4 times more likely to report a limiting long term condition than those in the least deprived areas (48.7% versus 20.0%).

Figure 15.1

Proportion of adults (16+) with a limiting long-term condition by Income-Employment Index, Scotland 2014/2015
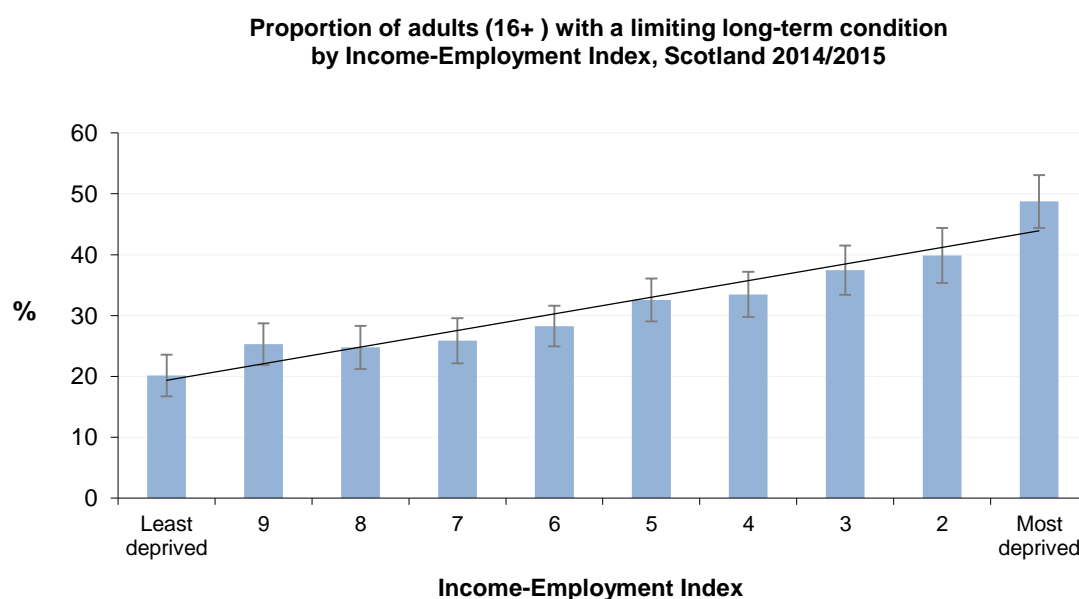
Adults in the lowest income decile were 2.6 times more likely to report a limiting long term condition than those in the highest income decile (52.7% versus 20.2%).

Figure 15.2
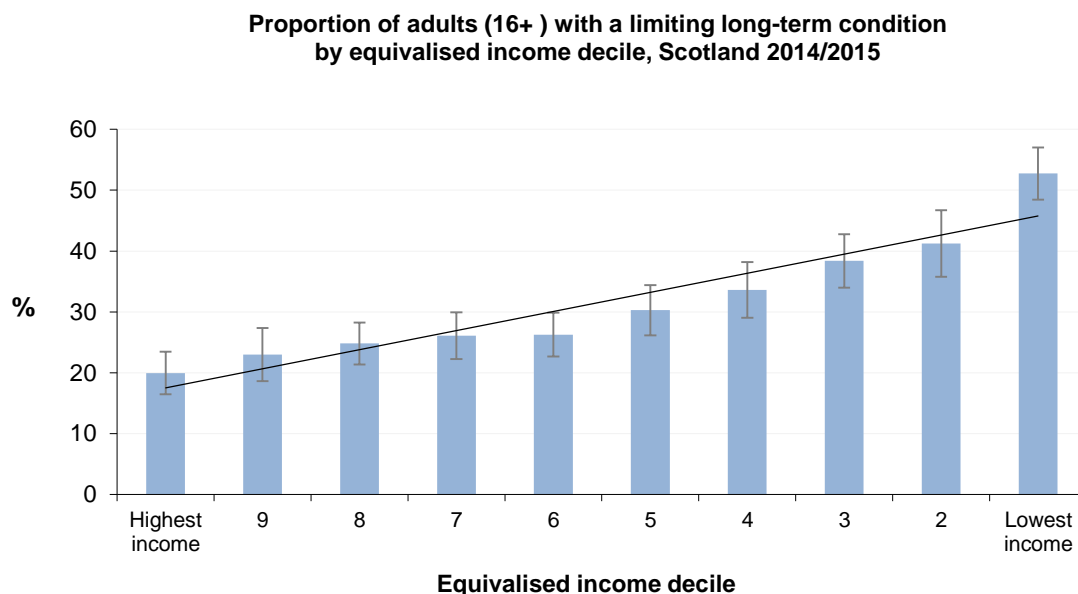
Proportion of adults (16+) with a limiting long-term condition by equivalised income decile, Scotland 2014/2015
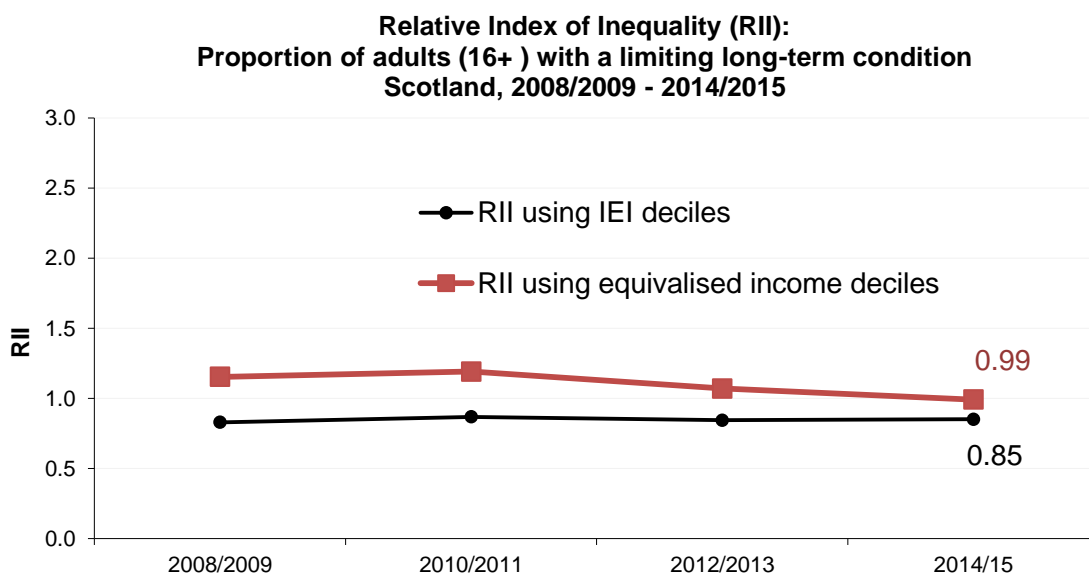

Trends in relative inequalities

When assessed using IEI deciles, relative inequality has been steady since 2008/2009 (ranging between 0.83 and 0.87).

RII calculated using equivalised income deciles has generally been a little higher over the same period and has shown more change. The RII for 2014/2015 was 0.99, the lowest in the time series.
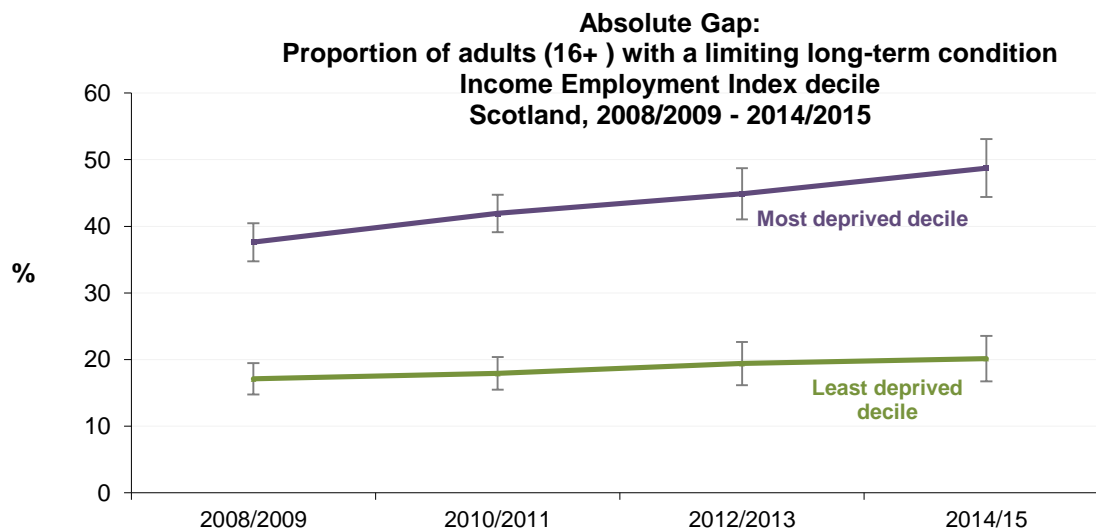
Figure 15.3

Relative Index of Inequality (RII): Proportion of adults (16+) with a limiting long-term condition Scotland, 2008/2009 - 2014/2015

49

Trends in absolute inequalities

The absolute gap in the prevalence of limiting long term conditions between the most and least deprived areas has increased over the time series. In 2008/2009 the gap was 20.5 percentage points, by 2014/2015 this had increased to 28.6 percentage points.

Absolute Gap:
Proportion of adults (16+) with a limiting long-term condition
Income Employment Index decile
Scotland, 2008/2009 - 2014/2015

There has also been an increase in the gap between the highest and lowest income deciles. In 2008/2009 prevalence of limiting long-term conditions was 25.0 percentage points higher amongst the lowest income decile, in 2014/2015 the gap was 32.8 percentage points.
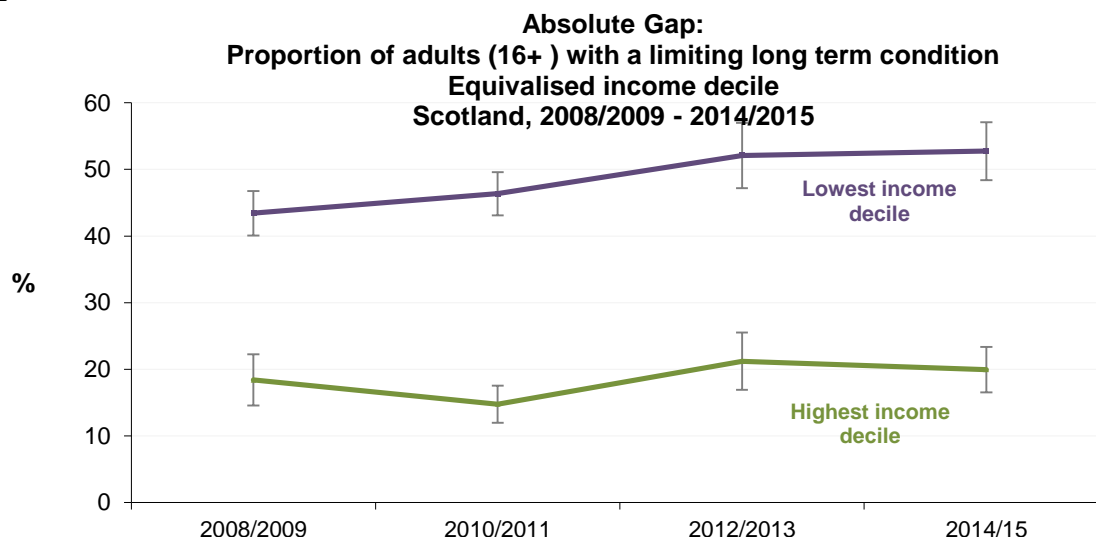
Absolute Gap:
Proportion of adults (16+) with a limiting long term condition
Equivalised income decile
Scotland, 2008/2009 - 2014/2015

Table 15.1: trends in limiting long-term conditions, 2008/2009 to 2014/2015

Year	% reporting limiting long-term condition	Lower 95% confidence limit	Upper 95% confidence limit
2008/2009	25.6	24.7	26.6
2010/2011	28.1	27.1	29.0
2012/2013	31.6	30.2	33.0
2014/2015	31.7	30.5	33.0

Annex 1: Technical Notes

Measurement of Inequalities

Different measures can give information about different aspects of inequalities. Some measures concentrate on the extremes of deprivation, whilst others include inequalities across the scale, taking into account the whole population. Absolute and relative measures can give quite different interpretations of inequalities. In addition to this, measures based on rates alone will not give insight into the scale of the problem.
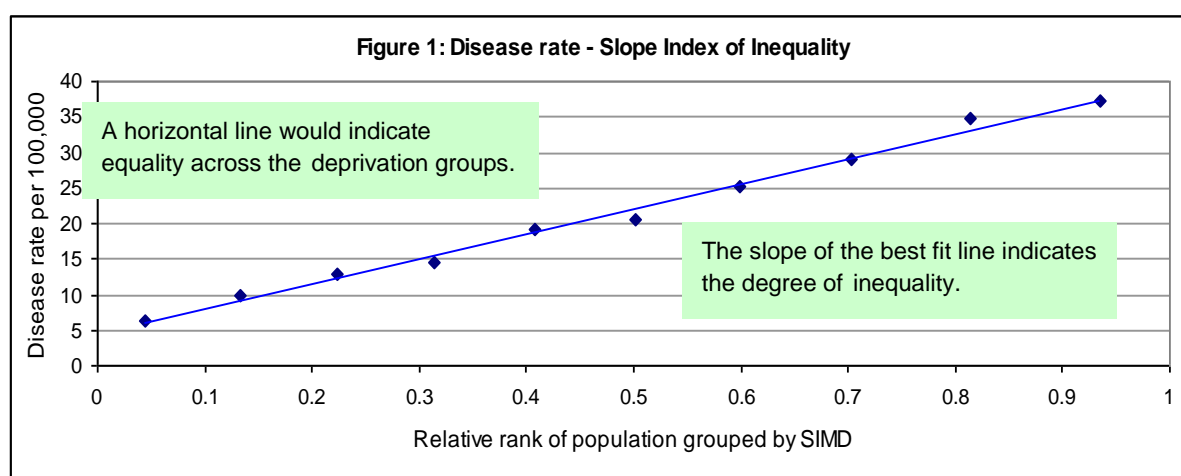
Information about different measures of inequality and their calculation was based on work done by the Scottish Public Health Observatory, available at: http://www.scotpho.org.uk/home/Publications/scotphoreports/pub_measuringinequalities.asp

The approach recommended by the expert group and adopted in this report uses a combination of measures, with the aim of giving a fuller understanding of the inequalities concerned.

Relative Index of Inequalities (RII): How steep is the inequalities gradient?

The RII describes the gradient of health observed across the deprivation scale, relative to the mean health of the whole population.

The RII is the slope index of inequality (SII) divided by the population mean rate. The SII is defined as the slope of the "best fit" regression line showing the relationship between the health status of a particular group and that group's relative rank on the deprivation scale. An equal rate across the deprivation categories would give a horizontal line with a slope of zero (SII=0), indicating no inequalities. The larger the absolute value of SII, the greater the inequalities observed (see Figure 1).

Figure 1: Disease rate - Slope Index of Inequality

A horizontal line would indicate equality across the deprivation groups.

The slope of the best fit line indicates the degree of inequality.

The SII and RII have the advantage that they are based on data about the whole population, rather than just the extremes, and so take into account inequalities across the scale. They do, however, require a reasonably linear relationship

between the health indicator and deprivation (or income). Another disadvantage is that the SII and RII are relatively difficult to interpret for a non-statistical audience.

The technical expert group concluded in 2012 and re-iterated in 2015 that, while there was evidence of non-linearity in some years for some indicators, linear methodology should be retained due to the complexity of non-linear methods, and the need of consistent reporting and general understanding.

Absolute range: How big is the gap?

This measure describes the absolute difference between the extremes of deprivation.

This measure has the advantage that it is intuitive and straightforward to explain. It has the disadvantage that, because it focuses only on the extremes of deprivation, it does not take account of patterns of inequalities observed across the intermediate groups.

Scale: How big is the problem?

The aim of this measure is to give insight into the underlying scale of the problem and to put it in context, for example by presenting numbers involved and past trends at Scotland level.

Income-Employment Index

The Short Life Technical Advisory Group also addressed the precise way in which deprivation should be defined for this work. The group agreed that the ideal would be to use individually linked records of health and socio-economic indicators, but acknowledged that these are not yet available. The preferred interim approach was to use the latest available versions of the Scottish Index of Multiple Deprivation income and employment domains. The reasoning behind this was that income / poverty / employment are felt to be the best indicators of deprivation for health inequalities analysis and because the possibility of being able to update these domains on a regular basis.

In order to combine the SIMD income and employment domains, each domain was exponentially transformed to reduce averaging effects. Exponential transformation gives greater weighting to the most deprived ranking, so combining a datazone ranked most deprived with a datazone ranked least deprived would give a combined ranking skewed towards the deprived end of the scale. This is the method used to create the SIMD.

The income and employment domains have been given equal weighting when combined in the income-employment Index.

In line with the recommendations of the Short Life Technical Advisory Group, the income-employment Index deciles are population based. Datazone based deciles are produced by ranking the datazones in Scotland according to their deprivation score and then dividing them into deciles based on number of datazones. Population-basing the deciles uses the same approach but also takes into account

the population sizes involved. The datazones are ranked according to their deprivation score alongside a cumulative total of datazone populations. The cut-off for decile 1 is the point at which 10% of the population has been included, rounded to the nearest whole datazone. Population-basing ensures the deciles contain equally sized populations, which is the best proxy to individual level indicators of deprivation available when using an area-based measure. Equally sized populations in the deciles are considered to be important for the types of inequalities analyses presented in this report.

European age-standardised rates

Rates are age-standardised in order to show patterns over time on a consistent basis, taking account of changes in the age distribution of the Scottish population, therefore more clearly showing any underlying trend. Similar, age-standardisation allows comparisons of rates for different countries, by taking account of differences in the age distributions in the populations of each country.

The 2013 European Standard Population (ESP) has been used to calculate European age-standardised rates included in this publication.

Equivalised household income

Equivalised household income is a measure of household income that takes account of the number of people in the household.

The method used in this report to derive deciles for the self-assessed health and limiting long-term conditions indicators is as below. It relates to households participating in the Scottish Health Survey and utilises the widely used McClements scoring system.[4]

1. A score was allocated to each household member, and these were added together to produce an overall household McClements score. Household members were given scores as follows:

First adult	0.61
Spouse/partner of first adult	0.39
Other second adult	0.46

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[4] McClements, D. (1977). Equivalence scales for children. Journal of Public Economics. 8: 191-210.

Third adult	0.42
Subsequent adults	0.36
Dependant aged 0-1	0.09
Dependant aged 2-4	0.18
Dependant aged 5-7	0.21
Dependant aged 8-10	0.23
Dependant aged 11-12	0.25
Dependant aged 13-15	0.27
Dependant aged 16+	0.36

2. The equivalised income was derived as the annual household income (estimated by first adult) divided by the McClements score.

3. This equivalised annual household income was attributed to all members of the household, including children.

4. Households were ranked by equivalised income, and deciles were identified. Because income was obtained in banded form, there were clumps of households with the same income spanning the quintiles. It was decided not to split clumps but to define the quintiles as 'households with equivalised income up to decile 1' and so on.

5. All individuals in each household were allocated to the equivalised household income decile to which their household had been allocated.

Annex 2: Data sources and quality

Data quality

Except where the source data is held by Scottish Government (i.e. the mental wellbeing indicator), aggregate data is provided by National Records of Scotland for the all-cause mortality and alcohol mortality indicators, and by ISD Scotland for all other indicators in this report. Scottish Government statisticians carry out quality assurance checks on the aggregate data, comparing it with past trends and against other published data, such as national level data published by NRS or ISD. For the mental wellbeing indicator, Scottish Government statisticians quality assure the aggregate data in the same way but take the additional step of double checking the programming methods used to derive the figures within the responsible team.

ISD Scotland and NRS are responsible for the quality assurance of their own datasets. Detailed information on the quality control of the relevant ISD datasets is available online[5]. National Records of Scotland have published detailed information on the quality of data on deaths[6]. Analysts at both ISD and NRS are provided with income-employment decile-datazone lookups and population estimates before a request for aggregate data is submitted.

Revisions and timeliness of report

Our general approach to revisions and release schedules is described at the following web address: http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/TrendHealthOutcome/Results

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[5] http://www.isdscotland.org/Products-and-Services/Hospital-Records-Data-Monitoring/
http://www.isdscotland.org/Health-Topics/Cancer/Scottish-Cancer-Registry/Quality-Assurance/

[6] http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/deaths-background-information/quality-of-nrs-data-on-deaths

Pre-release access

In accordance with the Pre-release Access to Official Statistics (Scotland) Order 2008, pre-release access to these statistics was provided to Scottish Government policy and communications officials 5 working days before release for the purposes of briefing ministers. NHS Health Scotland colleagues were also provided pre-release access from 5 working days before release for the purposes of making a statement or issuing a press release at the time of, or shortly after, publication.

Indicators

Premature Mortality (from all causes, aged under 75 years)
Source: National Records of Scotland.
Definition: European age-standardised rates of deaths from any cause amongst those aged under 75 years.

Mental Wellbeing (adults aged 16 years and over)
Source: Scottish Health Survey (2008-2015).
Definition: Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). This has been developed as a tool for measuring positive mental wellbeing at a population level. The scale comprises fourteen separate statements describing feelings related to mental wellbeing; respondents are asked to indicate how often they have felt such feelings over the last two weeks.

Results are presented as average WEMWBS score for the population concerned, and are age-standardised using the age distribution of the Scotland population each year. WEMWBS scores for individuals can range from 14 (for the lowest possible score for each of the fourteen statements) to 70 (for the maximum possible score for each of the fourteen statements).

An additional indicator based on the proportion of adults with 'below' average is also included. This takes a 'below average' WEMWBS score to be at least one standard deviation below the population mean, which equates to scores of 41 or lower in all years.

In order to improve the precision of estimates of mean and below average WEMWBS scores, data has been presented for two year combined periods in this report (2008/2009 to 2014/2015), together with confidence limits around each estimate.

Coronary Heart Disease - first ever hospital admission for heart attack aged under 75 years

Source: NHS Information Services Division (ISD); SMR1/01 records (all inpatient and daycase discharges).
Definition: European age-standardised rates of first ever hospital admission for acute myocardial infarction (heart attack) amongst those aged under 75 years. The following World Health Organisation International Classification of Disease coding was used: ICD10 'I21-I22'; ICD9 '410'.

Coronary Heart Disease - deaths aged 45-74 years

Source: NHS Information Services Division (ISD); using deaths data from National Records of Scotland.
Definition: European age-standardised rates death from coronary heart disease amongst those aged 45-74 years. The following World Health Organisation International Classification of Disease coding was used: ICD10 'I20-I25'; ICD9 '410-

414'. Because of the dynamic nature of the linked database, previous years' data are sometimes updated in subsequent publications.

Cancer - incidence rate aged under 75 years

Source: NHS Information Services Division (ISD); Scottish Cancer Registry.
Definition: European age-standardised rates of new cases of cancer amongst those aged under 75 years.

All Cancers- cancer defined as all malignant neoplasms excluding non-melanoma skin cancer. The following World Health Organisation International Classification of Disease coding was used: ICD10 'C00-C96' excluding 'C44' (the Scottish Cancer Registry does not use code 'C97').
Prostate cancer (males only)- ICD-10 C61
Breast cancer (females only)- ICD-10 C50
Cancer of the trachea, bronchus and lung- ICD-10 C33-C34
Colorectal cancer- ICD-10 C18-C20

Cancer - deaths aged 45-74 years

Source: NHS Information Services Division (ISD); Scottish Cancer Registry.
Definition: European age-standardised rates of deaths from cancer amongst those aged under 45-74 years.
All cancers- cancer defined as all malignant neoplasms excluding non-melanoma skin cancer. The following World Health Organisation International Classification of Disease coding was used: ICD10 (2000 onwards) 'C00-C97' excluding 'C44'.
Prostate cancer (males only) - ICD-10 C61
Breast cancer (females only) - ICD-10 C50
Cancer of the trachea, bronchus and lung- ICD-10 C33-C34
Colorectal cancer- ICD-10 C18-C20

Alcohol - first hospital admission aged under 75 years

Source: NHS Information Services Division (ISD).
Definition: European age-standardised rates of first hospital admission for alcohol related conditions amongst those aged under 75 years.   These rates include hospitals discharges where alcohol-related problems are recorded as either primary or secondary reasons for admission to hospital and will cover first admission in the last ten years. These figures exclude private hospitals, mental illness hospitals, psychiatric units and maternity hospitals and include Scottish residents only. Caution is necessary when interpreting these figures. The recording of alcohol misuse may vary from hospital to hospital. Where alcohol misuse is suspected but unconfirmed it may not be recorded by the hospital. The following revised World Health Organisation International Classification of Disease coding was used: ICD10: F10, K70, X45, X65, Y15, Y90, Y91, E244, E512, G312, G621, G721, I426,

K292, K860, O354, P043, Q860, T510, T511, T519, Y573, R780, Z502, Z714, Z721.

Alcohol - deaths aged 45-74 years

Source: National Records of Scotland.
Definition: European age-standardised rates of death from alcohol related conditions amongst those aged 45-74 years. The definition of alcohol related deaths includes deaths where there was any mention of alcohol related conditions on the death certificate, rather than just as the main cause of death. The following World Health Organisation International Classification of Disease coding was used: ICD10 F10, G31.2, G62.1, I42.6, K29.2, K70, K73, K74.0, K74.1, K74.2, K74.6, K86.0, X45, X65, Y15; ICD9 291, 303, 305.0, 425.5, 571.0, 571.1, 571.2, 571.3, 571.4, 571.5, 571.8, 571.9, E860.

All-cause mortality aged 15-44 years

Source: National Records of Scotland.
Definition: European age-standardised rates of deaths from any cause amongst those aged 15-44 years. Specific breakdowns for deaths from assault, drug related deaths and suicide are also provided, as the major causes of death for which there are large inequalities amongst young people. There may be some double counting in these breakdowns. The following World Health Organisation International Classification of Disease coding was used: Assault ICD10 'X85-Y09', 'Y87.1' ICD9 'E960-969'; Drug-related ICD10 'F11-16', 'F19', 'X40-44', 'X60-64', 'X85', 'Y10-Y14'; Suicide (intentional self-harm + undetermined intent) ICD10 'X60-84', 'Y87.0' ICD9 'E950-959', 'E980-989'.

Low Birthweight

Source: NHS Information Services Division (ISD); SMR02 maternity dataset.
Definition: The figures are presented as a percentage of all live singleton births (not including home births or births in non-NHS hospitals). Low birthweight is defined as <2,500g - the standard World Health Organisation definition.

Healthy Birthweight

Source: NHS Information Services Division (ISD); SMR02 maternity dataset.
Definition: A baby is considered to be of healthy birthweight (a weight appropriate for its gestational age) when it lies between the 5th and 95th centile for weight at its gestational age. Gestational age is a way of expressing the age or development of a baby. It is typically based on an antenatal ultrasound scan. However, it may also be estimated from the number of weeks since the mother's last normal menstrual period.

Note: In previous publications, data on appropriate birthweight for gestational age were produced using standard tables derived from Scottish data on all births from

the years 1998-2003 by Sandra Bonnellie (Napier University) and Jim Chalmers (ISD).

Details of the way in which the standards were derived are available here: http://www.biomedcentral.com/1471-2393/8/5.

ISD recently updated their methodology and data on appropriate birthweight for gestational age are now produced using tables based on the UK-WHO child growth standards developed by the Royal College of Paediatrics and Child Health, see: http://www.rcpch.ac.uk/child-health/research-projects/uk-who-growth-charts

Figures presented in this publication are calculated using the new methodology.

Self-assessed health (adults aged 16 years and over)
Source: Scottish Health Survey (2008-2015).
Definition: The indicator expresses the percentage of adults responding either 'bad' or 'very bad' to the following question from the Scottish Health Survey:

How is your health in general? Would you say it was….
1. … very good 2. good 3. fair 4. bad, or 5. very bad

In order to improve the precision of estimates, data has been presented for two year combined periods in this report (2008/2009 to 2014/2015), together with confidence limits around each estimate.

Limiting long-term conditions (adults aged 16 years and over)
Source: Scottish Health Survey (2008-2015).
Definition: The indicator expresses the percentage of adults responding 'yes' to the first question below and then either 'yes, a lot' or 'yes, a little' to the second (overleaf):

Do you have a physical or mental condition or illness lasting, or expected to last 12 months or more?
1. Yes 2. No

Does *(condition)* limit your activities in any way?

1. Yes, a lot
2. Yes, a little
3. Not at all

In order to improve the precision of estimates, data has been presented for two year combined periods in this report (2008/2009 to 2014/2015), together with confidence limits around each estimate.

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