

INFORMATION  
ANALYSIS  
DIRECTORATE



# Health Inequalities

NI Health & Social Care Inequalities  
Monitoring System – Regional 2014



Department of  
**Health, Social Services  
and Public Safety**

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Published November 2014

# Health Inequalities

NI Health & Social Care Inequalities Monitoring System - Regional 2014

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Statistics and research for the **Department of Health, Social Services and Public Safety** is provided by **Information Analysis Directorate (IAD)**. It comprises four statistical sections: Hospital Information, Community Information, Public Health Information & Research and Project Support Analysis.

IAD is responsible for compiling, processing, analysing, interpreting and disseminating a wide range of statistics covering health and social care.

The statisticians within IAD are out-posted from the Northern Ireland Statistics & Research Agency (NISRA) and our statistics are produced in accordance with the principles and protocols set out in the Code of Practice for Official Statistics.

### **About Public Health Information and Research Branch**

The role of Public Health Information and Research Branch (PHIRB) is to support the public health survey function and to provide support on public health issues within the Department. The head of the branch is the Principal Statistician, Mr. Bill Stewart.

In support of the public health survey function, PHIRB is involved in the commissioning, managing and publishing of results from departmental funded surveys, such as the Health Survey Northern Ireland, All Ireland Drug Prevalence Survey, Young Persons Behaviour & Attitudes Survey, and the Adult Drinking Patterns Survey.

PHIRB also has responsibility for the management of a programme of patient experience surveys across the Health and Social Care sector.

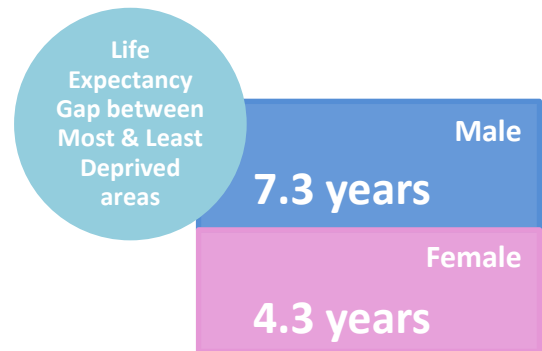
PHIRB provides support to a range of key DHSSPS strategies including Making Life Better, a 10 year cross-departmental public health strategic framework as well as a range of other departmental strategies such as those dealing with suicide, sexual health, breastfeeding, tobacco control and obesity prevention. It also has a key role in supporting the Alcohol and Drug New Strategic Direction 2011-2016, by maintaining and developing key departmental databases such as, the Drug Misuse Database, Impact Measurement Tool and the Census of Drug & Alcohol Treatment Services, which are all used to monitor drug misuse and treatments across Northern Ireland.

The branch also houses the NI Health and Social Care Inequalities Monitoring System which covers a range of different health inequality/equality based projects conducted for both the region as well as for more localised area levels.

## KEY FINDINGS

Health outcomes are generally worse in the most deprived areas in Northern Ireland when compared both with those witnessed in the region generally and in the least deprived areas. Large differences (known as health inequality gaps) continue to exist for a number of different health measures.

- Males in the 20% most deprived areas could expect, on average, to live 4.3 fewer years than the NI average and 7.3 fewer years than those in the 20% least deprived areas.
- Female life expectancy in the most deprived areas was 2.6 years less than the regional average and 4.3 years less than that in the least deprived areas.
- Those living in the least deprived areas could expect to live in good health for thirteen years longer than those in the most deprived areas.
- The overall death rate for males as measured by the All Age All Cause Mortality (AAACM) rate was a fifth higher in the most deprived areas (1,567 deaths per 100,000 population) than the NI average (1,304 deaths per 100,000 population), and 44% higher than in the least deprived areas (1,090 deaths per 100,000 population).
- The overall death rate for females (AAACM) in the most deprived areas (1,093 deaths per 100,000 population) was 17% higher than regionally (935 deaths per 100,000 population), and a third higher than in the least deprived areas (829 deaths per 100,000 population).
- The suicide rate in the most deprived areas (30.7 deaths per 100,000 population) was almost double the regional average (16.2 deaths per 100,000 population), and three times that in the least deprived areas (10.1 deaths per 100,000 population).



### Largest Inequality Gaps

- Std. Admission Rate: Alcohol
- Std. Admission Rate: Self-harm
- Teenage Birth Rate
- Std. Death Rate: Drugs
- Std. Death Rate: Alcohol
- Std. Admission Rate: Drugs

### Decreased Inequality Gaps

- Std. Death Rate: Alcohol
- Infant Mortality Rate
- Primary 1 Obesity
- Crude Suicide Rate
- Std. Death Rate: Drugs

### Increased Inequality Gaps

- Std. Admission Rate: Day Case
- Std. Admission Rate: Elective
- Std. Admission Rate: All
- Std. Death Rate: Smoking
- Std. Death Rate: Drugs
- Std. Death Rate: Male All Age All Cause
- Std. Death Rate: Respiratory (U75)

## Largest health inequality gaps

- The standardised **admission rate for alcohol** related conditions in the most deprived areas (1,528 admissions per 100,000 population) was more than four times higher than that in the least deprived areas (291 admissions per 100,000 population).
- The **drug and alcohol related death** rates in the most deprived areas were both around three times higher than those in the least deprived areas.
- In the most deprived areas (500 admissions per 100,000 population), the standardised **self-harm admission** rate was over three times higher than that in the least deprived areas (114 admissions per 100,000 population).
- There were more than four times as many **teenage births** per 1,000 population in the most deprived areas compared with the least deprived areas.
- Other large inequality gaps were observed in the **admission rate for drugs** related conditions, **smoking during pregnancy**, **death rate (for under 75 years) from respiratory diseases**, and **suicide**.

## Decreases in inequality gaps

- The most-least deprived inequality gap for the standardised **death rate due to alcohol** decreased, from 411% in 2004-08 to 307% in 2008-12. This was due both to a decrease in the rate in the most deprived areas and an increase in the least deprived areas.
- With the **infant mortality** rate continuing to decrease both across the region and in the most deprived areas, there was almost no inequality gap observed.
- The **Primary 1 obesity** rate inequality gap narrowed by a third between 2008/09 and 2012/13 as a result of decreases in rates both regionally and in the most deprived areas, in addition to an increase in the rate within the least deprived areas.
- The inequality gap in the crude **suicide** rate decreased from 238% to 204% however this was due to a higher increase in suicide rates within the least deprived areas than in the most deprived areas.
- The most-least deprived inequality gap for the standardised **death rate due to drugs** decreased, from 376% in 2004-08 to 295% in 2008-12.

## Increases in inequality gaps

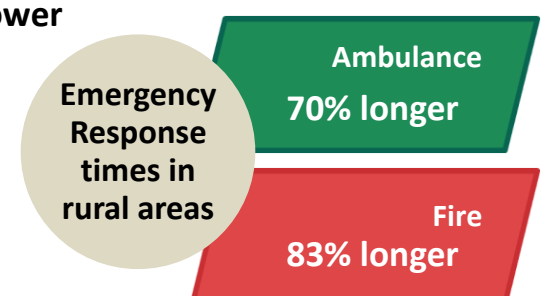
- The most-least deprived inequality gap for the overall standardised **admission** rate increased by a quarter over the period, from 27% to 33%.
- The standardised **day case admission** rate inequality gap increased by 50% over the period, from 14% to 21%. The inequality gap for **elective admission** rates also increased over the period by a quarter, from 20% to 25%.
- The inequality gap for standardised death rate due to **smoking** increased, from 110% to 127%.
- The inequality gap in the male **AAACM** increased from 37% to 44% however this was due to a higher decrease in mortality rates within the least deprived areas than in the most deprived areas.
- The standardised **death rate for respiratory disease** in under 75s decreased in the least deprived areas while remaining fairly constant in the most derived areas, resulting in the inequality gap widening by almost a fifth.

## Health outcomes are generally **better in rural** areas when compared with those in the region generally

- Males and females living in rural areas could **expect to live** 1.5 and 1.3 years longer respectively, compared with the regional average.
- **Lung cancer incidence and death** rates in rural areas are both around a quarter lower than regionally.
- In rural areas, the standardised **death rate attributable to drugs** was under half that experienced regionally. Similar gaps were found in the drug related admission rate and both admission and death rates relating to alcohol.
- The **self harm admission** rate in rural areas was less than half that regionally.
- The **suicide** rate in rural areas was a quarter lower than the regional average.
- The **teenage birth** rate in rural areas was 40% below the regional average.

## Average **response times** to rural areas are generally lower than those to urban areas

- **Ambulance** response times in rural areas were **70% longer** than the regional average.
- **Fire** response times in rural areas were **83% longer** than the regional average.



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## 1. INTRODUCTION & METHODOLOGY

### 1.1 NI Health & Social Care Inequalities Monitoring System

The NI Health and Social Care Inequalities Monitoring System (HSCIMS), developed by the Information Analysis Directorate (IAD) within the Department of Health, Social Services and Public Safety (DHSSPS), was established in 2002. The HSCIMS comprises a basket of indicators which are monitored over time to assess area differences in mortality, morbidity, utilisation of and access to health and social care services in Northern Ireland, and has expanded over recent years to include additional work streams relating to health inequality. All HSCIMS reports can be downloaded from the DHSSPS website<sup>1</sup>.

### 1.2 Updates from the Fourth update bulletin 2012

The 2014 report has seen further expansion of the HSCIMS in terms of new indicators as well as a revision to the back series and employment of an improved methodology. Methodological changes have meant that figures for earlier years contained in this report may differ slightly from those published in previous HSCIMS reports. This may also lead to slightly different conclusions being drawn in this report than those reached previously. Further explanation of these updates is given below.

#### 1.2.1 Revised Population Estimates

In 2014, the population estimates for each year in the period from 2001 to 2011 were revised by the Northern Ireland Statistics & Research Agency (NISRA) in light of the 2011 Census.

#### 1.2.2 European Standardisation

A number of indicators in this report have been age standardised to remove the effects of differences in population structure across geographic areas and over time. This report uses the 2013 European Standard Population (ESP) for the first time which replaces the 2001 NI Census population used in previous reports. In addition to better reflecting the ageing population, the 2013 ESP allows comparisons to be made with other UK and European countries. This change to the method for the calculation of Age Standardised Rates (ASRs) has had a notable effect and means that some figures in this report may not be comparable with those contained in previous publications.

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<sup>1</sup> <http://www.dhsspsni.gov.uk/index/statistics.htm>

### 1.2.3 Standardisation Methods

Standardised rates allow the comparison of rates between populations with different age structures by relating them to a standard population. Many of the indicators included in this report have been standardised. This has been done using the direct or indirect method. In most circumstances either method could have been applied, however the majority used the direct method which allows for longitudinal comparability and is a more informative indicator in that it provides actual values (actual burden) and not just how far levels for specific populations deviate from the regional level. Further detail on the difference between the two standardisation methods is given below.

**Direct Method** – A directly standardised rate is the overall death rate that would have prevailed in the standard population if it had experienced, at each age, the death rates of the population under study. Directly standardised rates can be used to compare disease and death rates across both areas and time. They can also be used to assess the relative burden of disease in a population. However directly standardised rates based on a small number of events may not be robust.

**Indirect Method** – Indirectly standardised rates compare the actual number of events in an area with the expected number of events based on the rates observed in the reference population (adjusted for age and sex). Unlike directly standardised rates, indirectly standardised rates give no idea of the actual burden of disease.

### 1.2.4 New Indicators

There are 42 indicators included in this 2014 HSCIMS report, of which 7 have been introduced since the previous fourth update bulletin in 2012. In addition, information is presented from the Health Survey Northern Ireland (HSNI) to add contextual information to the contents of this report. It should also be noted that the previous indicator 'Standardised Mortality Ratio (SMR)', which was an indirectly standardised mortality rate, has been replaced with 'Standardised Death Rate – All Age All Cause Mortality (AAACM)'. AAACM is a directly standardised indicator which can therefore be used to compare disease and death rates across both areas and time. It can also be used to assess the relative scale of mortality in a population. In addition, the methodology for calculating the indicator 'Potential Years of Life Lost' has been updated to incorporate the use of interim life tables to calculate the number of years of life left for different groups. PYLL has also been age standardised to the 2013 ESP. All indicators are set out in Table 1 and a description of the methodology used to calculate each indicator included is in the appendix.

### 1.2.5 Further Analysis – Social Gradient

In addition to the inequality gap analysis (i.e. difference between the 20% most and least disadvantaged groups) presented in this report, an analysis of the scale of inequality across the social gradient is presented by looking at the slope index of inequality ( $S_{II}$ ). The simple gap analysis is useful in that it is easy to produce and can be easily interpreted, however it is limited in that it only reflects the difference between the highest and lowest socioeconomic or deprived groups and can be potentially affected by extreme values for each of these groups.  $S_{II}$  however reflects on the experience of the entire population and it is sensitive to the distribution of the population across all socioeconomic groups and for this reason, the measures are not directly comparable. From  $S_{II}$ , the Relative Slope of Index ( $R_{II}$ ) can be calculated allowing for inequalities to be monitored over time and to be compared and contrasted across different health indicators. This analysis was first introduced as part of the HSCIMS within the Making Life Better Key Indicators and Baselines Report published in July 2014<sup>2</sup>. Further information on this analysis is included at 1.2.12.

<sup>2</sup> <http://www.dhsspsni.gov.uk/index/statistics/health-inequalities/social-determinants-of-health.htm>



### 1.2.6 Indicator Stability / Confidence Intervals

The process of standardisation, in applying the same demographic structure across a number of years, or from one geographic area to another, introduces a degree of uncertainty around resultant estimates. As a way of quantifying this uncertainty, a 95% confidence interval is calculated. Indicators that are based on a large number of events have a smaller confidence interval while the converse is true for those based on a small number of events. Throughout this report, differences in standardised rates that are not statistically significant in any given year will not be highlighted. Similarly, unless there is a consistent observed trend which strongly suggests a narrowing or widening of an inequality gap, no reference will be made to changes in the gap.

The worked example below shows how confidence intervals can be used as a quick 'rule-of-thumb' as to whether a difference is statistically significant or not.

#### Worked Example

##### i) Male Healthy Life Expectancy 2010-12 Analysing the most deprived – NI deprivation gap

**Most Deprived Areas:** 50.6 years  
Confidence Interval: 48.4 to 52.7 years

**NI Average:** 58.6 years  
Confidence Interval: 57.8 to 59.3 years

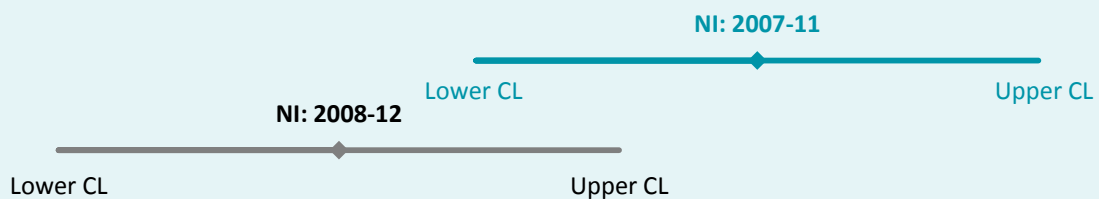


As there is no overlap between the respective confidence intervals for deprived areas and NI, then the observed difference is statistically significant and therefore considered a real change.

##### ii) Female All Age All Cause Mortality (AAACM) Analysing the change in the rate between 2007-11 and 2008-12

**2008-12 NI Average**  
935 deaths per 100,000 population  
Confidence Interval:  
926 to 943 deaths per 100,000 population

**2007-11 NI Average**  
947 deaths per 100,000 population  
Confidence Interval:  
939 to 955 deaths per 100,000 population



The respective confidence intervals in this case clearly overlap. This suggests that the observed difference is not statistically significant. At this stage, further statistical tests for statistical significance need to be carried out.

### 1.2.7 Mortality Rates

This report presents mortality figures based on the single main underlying cause of death classification for simplicity of understanding, but obviously a death can be due to a variety of different causes. This can lead to an underestimation of the impact of common conditions associated with multiple causes of death (e.g. diabetes, influenza and pneumonia).

All death figures used in this report are based on the year that the death was registered and not necessarily the year in which the death occurred. While the vast majority of deaths are registered shortly after death, there may be a delay registering some deaths. Events such as infant death or suicide are usually referred to a coroner and this legal process can take some time.

### 1.2.8 Population

Population is obviously a vital part of rate calculations. A change to the size of the population or its age distribution will impact on rates and subsequently inequality gaps. For example, overall deaths in Northern Ireland have remained between 14,000 and 15,000 for the last decade, yet mortality rates have been falling – this can be explained partially by the growing as well as ageing Northern Ireland population.

The population in Northern Ireland is both growing and ageing. Between 2000 and 2013 for example, the population grew from 1,682,944 to 1,823,634 – an increase of 140,690 persons (8%). During this time the proportion of the population aged 65 and over increased from 13.1% (221,248 persons) to 15.3% (279,134 persons).

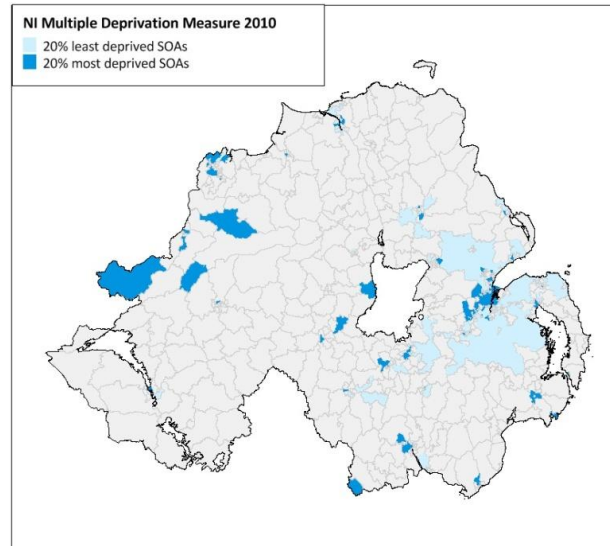
### 1.2.9 Small Area Population Estimates

Population estimates disaggregated to a relatively small geographical area level (i.e. Super Output Area (SOA) and Small Area (SA)) by age and gender are used to calculate many of the various HSCIMS indicators for deprived and rural areas. However, as population estimates produced for Northern Ireland are not available to the required level of detail, it is necessary to rework these estimates by proportioning out aggregated small area population estimates by gender and single year of age breakdowns from NISRA mid-year estimates. These reworked estimates are validated by a process of integrity checks with higher level age and geography population totals published by NISRA. Reworked estimates are calculated from unrounded population breakdown figures which may not match exactly with some population breakdowns published by NISRA which have been rounded to the nearest person.

### 1.2.10 Deprivation Classification

The deprivation classification used in this report is based on Northern Ireland Multiple Deprivation Measure (NIMDM) produced by NISRA. The 2010 NIMDM<sup>3</sup> has been applied to all datasets for all years included within this report. The 2010 NIMDM is available at small area level for the first time which is based on smaller populations and should allow for better identification of “pockets of deprivation”. However, it was decided to continue using the SOA classification within the HSCIMS to ensure continuity and comparability with the back series of data.

**Chart 1 - Most and least deprived areas in Northern Ireland**

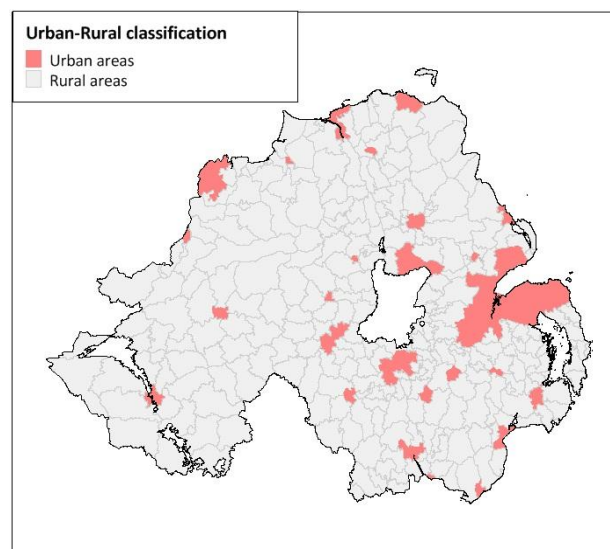


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### 1.2.11 Rural Classification

As with previous updates of HSCIMS, the definition of rural areas applied to data in this report is consistent with that outlined in the “Report of the Inter-Departmental Urban-Rural Definition Group” (NISRA 2005)<sup>4</sup>. It divides NI into 8 broad settlement bands with the following settlement bands being considered as rural areas; “intermediate settlement”, “village” and “small village, hamlet and open countryside”. These classifications were applied to the 2001 Census population and hence, if the exercise was to be repeated today, the boundaries of settlements may be drawn differently due to internal migration since 2001.

**Chart 2 – Urban – Rural Classification Northern Ireland**



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<sup>3</sup> Further information on the 2010 NIMDM: [http://www.nisra.gov.uk/deprivation/nimdm\\_2010.htm](http://www.nisra.gov.uk/deprivation/nimdm_2010.htm)

<sup>4</sup> Further information on the Urban-Rural definition: [http://www.ninis.nisra.gov.uk/mapxtreme\\_towns/Reports/ur\\_report.pdf](http://www.ninis.nisra.gov.uk/mapxtreme_towns/Reports/ur_report.pdf)

### 1.2.12 Slope Index of Inequality

The Marmot Review<sup>5</sup> demonstrated that there is a social gradient in health that runs from the top to bottom of the socioeconomic spectrum, meaning that health inequities affect everyone. There is consistent evidence throughout the world that people at a socio-economic disadvantage suffer a heavier burden of illness and have higher mortality rates than their better-off counterparts. For instance, within Northern Ireland in 2010-12, male life expectancy within the least deprived 10% of the population was over 9 years higher than that within the most deprived 10% of the population. The slope of Index of Inequality ( $S_{II}$ ) is a robust method for analysing and monitoring the socioeconomic inequalities in health over time by measuring changes in the social gradient in health. The advantage of using  $S_{II}$  over the gap analysis is that whereas the gap analysis compares two extreme values (most deprived against least deprived),  $S_{II}$  reflects on the experience of the entire population.  $S_{II}$  is also sensitive to the distribution of the population. This report aims to apply this approach where possible, to calculate the social gradient for a number of HSCIMS indicators.

The social gradient approach involves calculating the mean health status of each socioeconomic or deprived group and then ranking classes by their socioeconomic status. The  $S_{II}$  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 ( $S_{II} = 0$ ) and would indicate that there are no inequalities.

The Relative Index of Inequality ( $R_{II}$ )<sup>6</sup> is calculated by dividing  $S_{II}$  by the average outcome, with the result representing the proportionate change in the health outcome over the population by socioeconomic status.  $R_{II}$  allows inequalities to be compared and contrasted across a number of different health indicators as well as over time. The higher the value of the  $R_{II}$  the greater the difference among the groups analysed. An interpretation of results in relation to both the gap analysis and  $R_{II} / S_{II}$  is included within the Slope Index of Inequality section of the report.

### 1.2.13 Indicators

Due to random fluctuations in events over time, it is often necessary to aggregate more than one year of data for indicators in order to ensure stability. The number of years of information that are required to aggregate for each indicator is informed by both the number of events and also an assessment of its annual variability. All indicators, reference years and the year of the most recent figures are set out in Tables 1 and 2. Furthermore, a description of each indicator methodology is outlined in the Appendices on page 111.

Also presented are a number of indicators from the Health Service Northern Ireland (HSNI), such as smoke and carbon monoxide alarm prevalence. These are presented contextually, and are not included as part of the Health and Social Care Inequalities Monitoring System.

<sup>5</sup> Fair Society, Healthy Lives: The Marmot Review can be accessed at <http://www.marmotreview.org>.

<sup>6</sup> Methods in Social Epidemiology (Mackenbach and Kunst).

Table 1. HSCIMS Indicators

INDICATOR	Reference Years		Most Recent Figures
Life Expectancy	Three	Calendar	2010-2012
Healthy Life Expectancy <sup>New</sup>	Three	Calendar	2010-2012
Disability Free Life Expectancy <sup>New</sup>	Three	Calendar	2010-2012
Standardised Death Rate - All Age All Cause Mortality (AAACM) <sup>New</sup>	Five	Calendar	2008-2012
Potential Years Of Life Lost – All	Three	Calendar	2010-2012
Standardised Death Rate – Avoidable <sup>New</sup>	Five	Calendar	2008-2012
Standardised Death Rate – Preventable <sup>New</sup>	Five	Calendar	2008-2012
Standardised Death Rate – Amenable <sup>New</sup>	Five	Calendar	2008-2012
Standardised Admission Rate – All	One	Financial	2012/13
Standardised Admission Rate – Emergency	One	Financial	2012/13
Standardised Admission Rate – Elective Inpatients	One	Financial	2012/13
Standardised Admission Rate - Day Case	One	Financial	2012/13
Standardised Admission Rate - Circulatory	Three	Financial	2010/11-2012/13
Standardised Death Rate – Circulatory (U75)	Five	Calendar	2008-2012
Standardised Prescription Rate – Antihypertensive	Annual	Calendar	2012
Standardised Prescription Rate – Statins	Annual	Calendar	2012
Standardised Admission Rate – Respiratory	Three	Financial	2010/11-2012/13
Standardised Death Rate – Respiratory (U75)	Five	Calendar	2008-2012
Standardised Incidence Rate – Cancer	Seven	Calendar	2006-2012
Standardised Incidence Rate – Lung Cancer	Seven	Calendar	2006-2012
Standardised Death Rate – Cancer (U75)	Five	Calendar	2008-2012
Standardised Death Rate - Lung Cancer	Five	Calendar	2008-2012
Standardised Admission Rate – Alcohol	Three	Financial	2010/11-2012/13
Standardised Death Rate – Alcohol	Five	Calendar	2008-2012
Standardised Death Rate – Smoking	Five	Calendar	2008-2012
Standardised Admission Rate – Drugs related mental health and behavioural disorders	Three	Financial	2010/11-2012/13
Standardised Death Rate - Drugs	Five	Calendar	2008-2012
Standardised Death Rate - Drug Misuse <sup>New</sup>	Five	Calendar	2008-2012
Standardised Admission Rate - Self Harm	Five	Financial	2008/09-2012/13
Crude Suicide Rate	Three	Calendar	2010-2012
Standardised Prescription Rate - Mood & Anxiety	One	Calendar	2012
Fire Response Times	One	Financial	2012/13
Ambulance Response Times	One	Calendar	2013
Carbon Monoxide & Smoke Alarm Prevalence <sup>New</sup>	One	Financial	2012/13
Infant Mortality Rate	Five	Calendar	2008-2012
Smoking During Pregnancy	One	Calendar	2013
Teenage Birth Rate (U20)	One	Calendar	2012
Low Birth Weight	Five	Calendar	2009-2013
Breastfeeding on Discharge	One	Calendar	2013
Childhood Obesity – Primary 1	One	School-Year	2012/13
Childhood Obesity – Year 8 <sup>New</sup>	One	School-Year	2012/13
Standardised Dental Registration Rate	One	Calendar	2013

### 1.2.14 Format of this report

Some indicators and contextual information from other sources are provided within each section. Trends in both rates and gaps are illustrated in charts and explained in text. On occasion, reference is also made to male and female inequality gaps. Where possible, an analysis of the social gradient (slope of index) is presented within the further analysis section. These and all other HSCIMS figures in the report are available in tabular format on the DHSSPS website<sup>7</sup>.

It should be noted that inequality gaps for indicators can exist in either direction. Health outcomes generally tend to be worse in deprived areas than in the region overall while the opposite is true for rural areas. However this may not always be the case. For the purposes of this report, a positive inequality gap when comparing health outcomes in deprived areas means that the health outcomes in the most deprived areas are worse than the NI average. A positive inequality gap when comparing health outcomes in rural areas means that health outcomes in rural areas are better than the NI average.

### 1.2.15 Rounding

Some individual figures have been rounded to either zero or one decimal place independently. As a result, the sum of component items may not therefore always add to the totals shown.

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<sup>7</sup> <http://www.dhsspsni.gov.uk/index/statistics/health-inequalities.htm>

# Life Expectancy

Life Expectancy

Healthy Life Expectancy

Disability Free Life Expectancy

All Age All Cause Mortality

In **2010-12** the gap between **life expectancy** for males and females was **4.4 years**.

Least Deprived

80.7 years

Male life expectancy in NI was **77.7 years**

Life expectancy gap...

**7.3 Years**

between the **Most deprived & Least deprived** areas

**4.3 Years**

between the **Most deprived** areas & **Northern Ireland**

Most Deprived

73.5 years

Least Deprived

83.8 years

Female life expectancy in NI was **82.1 years**

Life expectancy gap...

**4.3 Years**

between the **Most deprived & Least deprived** areas

**2.6 Years**

between the **Most deprived** areas & **Northern Ireland**

Most Deprived

79.6 years

Healthy Life Expectancy

**58.6 years** for Males & **61.6 years** for Females

The gap between the **Most deprived & Least deprived** areas for both males & females was

**13 years**

Disability Free Life Expectancy

**60.2 years** for Males & **60.8 years** for Females

The gap between the **Most deprived & Least deprived** areas for both males & females was

**12 years**

## 2. Life Expectancy

*Life expectancy at birth is the average number of years a person can expect to live should current mortality patterns stay constant. Life expectancy is not only a good indicator of the health status of a population, but also of the extent of health inequalities as typically there are very distinct differences in life expectancy between areas of high and low deprivation. Life expectancy is a key indicator of performance for the government in improving health and wellbeing and addressing inequalities. Healthy life expectancy (HLE) is the average number of years a person can expect to live in good health and disability free life expectancy (DFLE) is the average number of years a person can expect to live without a limiting long-standing illness. All Age All Cause Mortality (AAACM) is the age standardised death rate for all causes of death. Life expectancy, HLE, DFLE and AAACM are all informative measures of the general health status of the population and can show notable differences between different socioeconomic groups.*

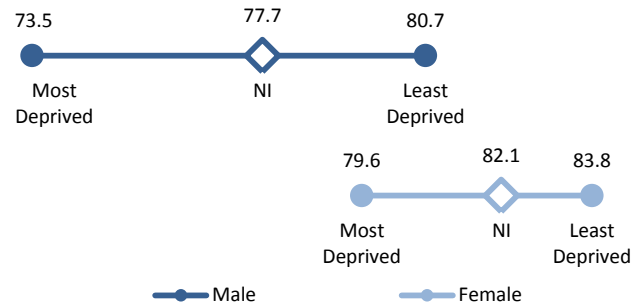


## 2.1 Life Expectancy

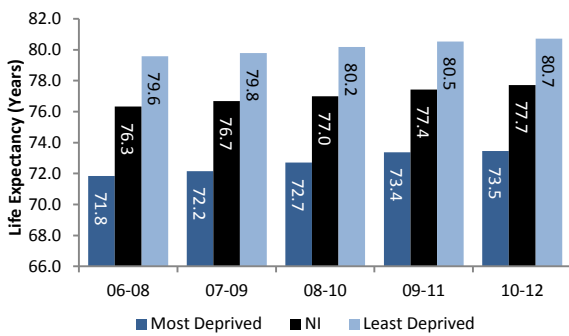
### Life Expectancy by Deprivation, 2010-12

In 2010-12, the gap between life expectancy for males (77.7 years) and females (82.1 years) was 4.4 years.

Females in the least deprived areas (83.8 years) could expect, on average, to live 10.3 years longer than their male counterparts living in the most deprived areas (73.5 years).



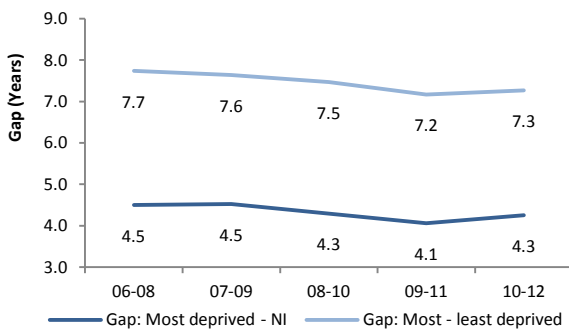
### Male Life Expectancy: Deprivation Time Series



Male life expectancy in Northern Ireland increased by 1.4 years, from 76.3 years in 2006-08 to 77.7 years in 2010-12.

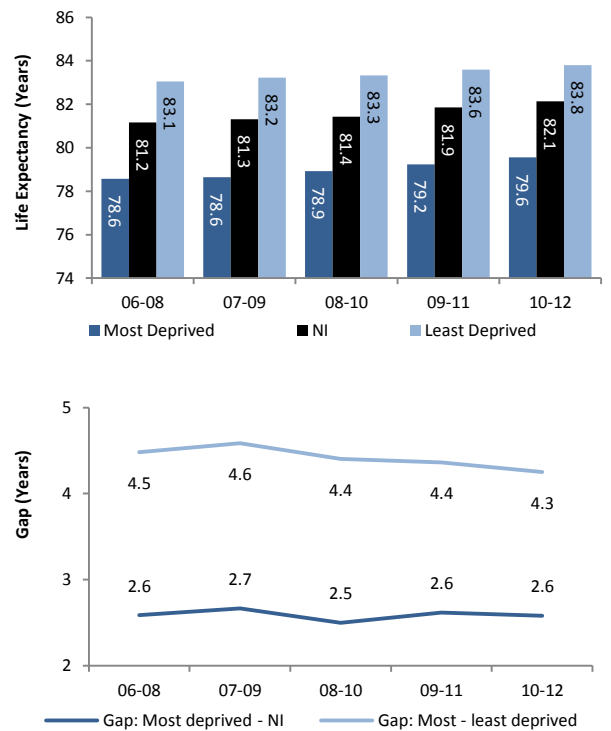
Similarly, life expectancy increased by 1.6 years in the most deprived areas (from 71.8 to 73.5 years) causing the life expectancy gap between NI and the least deprived areas to remain broadly similar at 4.3 years in 2010-12.

The gap between the most and the least deprived areas was 7.3 years in 2010-12, also remaining similar over the period.

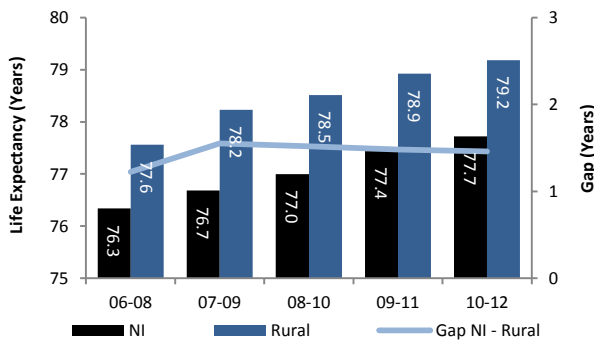


### Female Life Expectancy: Deprivation Time Series

Female life expectancy in Northern Ireland increased by 0.9 years, from 81.2 years in 2006-08 to 82.1 years in 2010-12. This rise was similar to that experienced in the most deprived and least deprived areas, causing the life expectancy gaps between the most deprived areas and NI (2.6 years in 2010-12), and between the most and least deprived areas (4.3 years in 2010-12), to remain broadly similar.



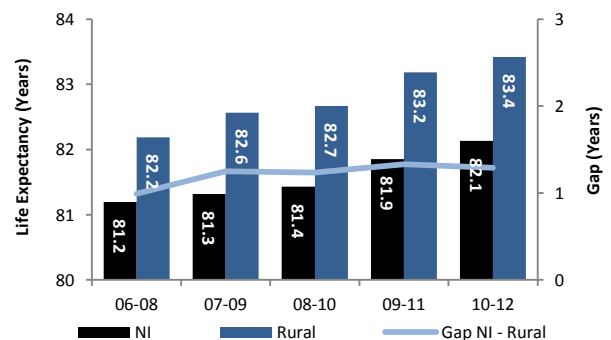
### Male Life Expectancy: Rurality Time Series



Male life expectancy in rural areas saw a similar increase to that seen regionally, increasing from 77.6 years in 2006-08 to 79.2 years in 2010-12. As a consequence, the male rural life expectancy gap remained similar to previous years and stood at 1.5 years in 2010-12.

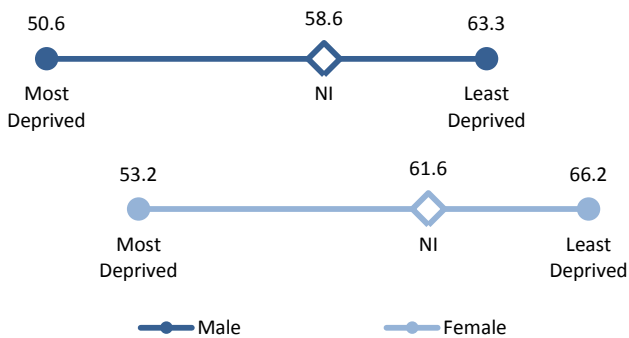
### Female Life Expectancy: Rurality Time Series

Female life expectancy in rural areas increased from 82.2 years in 2006-08 to 83.4 years in 2010-12. Female life expectancy in NI as a whole also increased over the period by 0.9 years to reach 82.1 years in 2010-12. The gap increased by a third over the period, and was 1.3 years in 2010-12.



## 2.2 Healthy Life Expectancy (HLE)

### HLE by Deprivation, 2010-12<sup>8</sup>



In 2010-12, male healthy life expectancy in NI was 58.6 years, while females could expect to remain healthy for 61.6 years. This is equivalent to around three-quarters of each gender’s respective life expectancy.

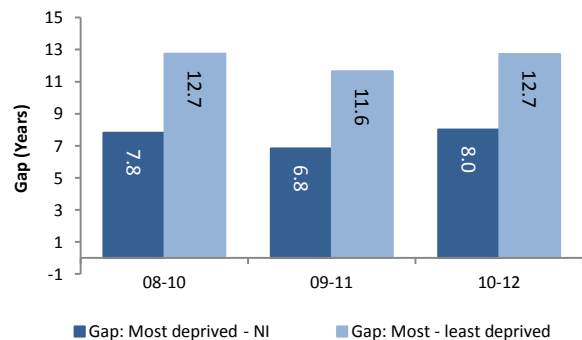
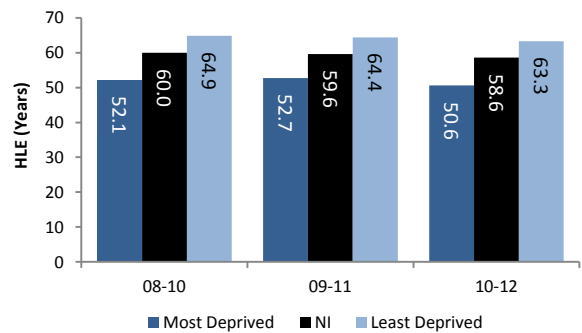
In the most deprived areas, both males and females can expect to live in good health for approximately 13 years less than their counterparts in the least deprived areas.

### Male HLE: Deprivation Time Series

Due to the reason outlined below<sup>8</sup>, it is not appropriate to compare HLE in areas across years. However, as any source issues are consistent within each year, it is possible to compare deprivation gaps over time.

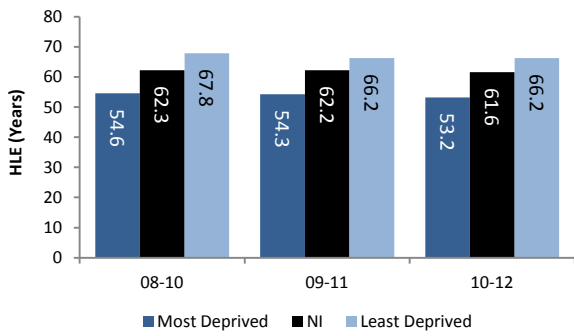
The most-least deprived gap in male healthy life expectancy remained broadly similar over the period and stood at 12.7 years in 2010-12.

The deprivation gaps between NI and the most deprived areas and between the most and least deprived areas remained similar over the period.



<sup>8</sup> The data used to calculate this indicator has changed source in recent years, which has caused a slight discontinuity in the time series. For more information, see appendix 2.2 on page 114.

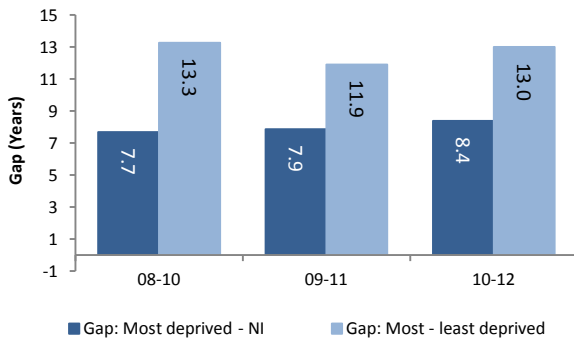
### Female HLE: Deprivation Time Series



Females in Northern Ireland could expect to live in good health until the age of 61.6 years in 2010-12.

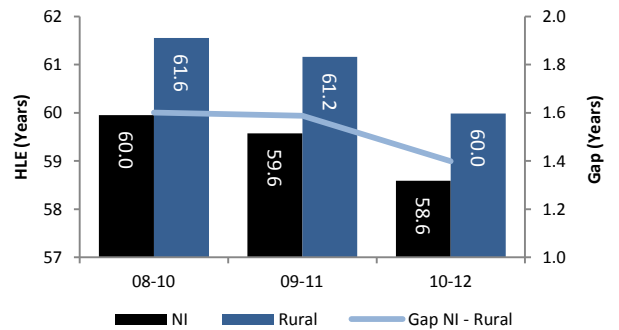
The most-least deprived gap in 2010-12 (13.0 years) was broadly similar to that in 2008-10 (13.3 years). However, the gap between the most deprived areas and NI overall has widened slightly over the period, from 7.7 years in 2008-12 to 8.4 years in 2010-12.

As with male HLE, the decrease in female HLE over the period was due, to some extent, to the change in data source, as outlined previously.

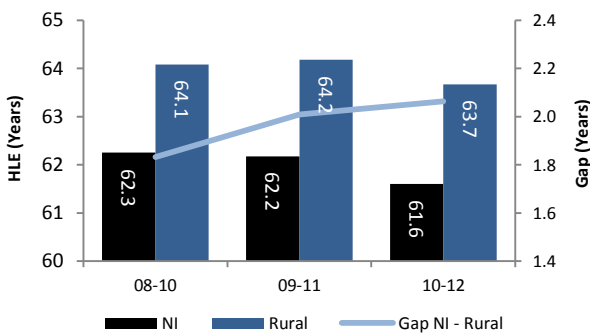


### Male HLE: Rurality Time Series

Males in rural areas can consistently expect to live in good health for around 1.5 years longer than the regional average.



### Female HLE: Rurality Time Series



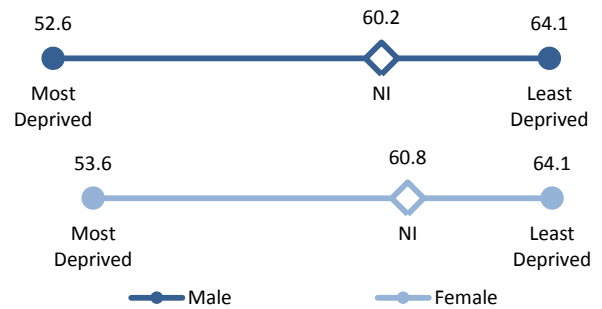
Females in rural areas can consistently expect to live in good health for around 2 years longer than the regional average.

## 2.3 Disability Free Life Expectancy (DFLE)

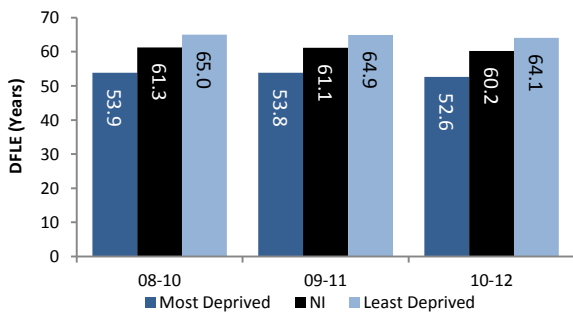
### DFLE by Deprivation, 2010-12<sup>9</sup>

In 2010-12, male disability free life expectancy in Northern Ireland was 60.2 years. This compared with 60.8 years for females. This is equivalent to around 78% of total life expectancy for males and 74% for females.

In the most deprived areas, males can expect to live without a disability for 11.4 years less than their counterparts in the least deprived areas. The gap for females was 10.6 years.



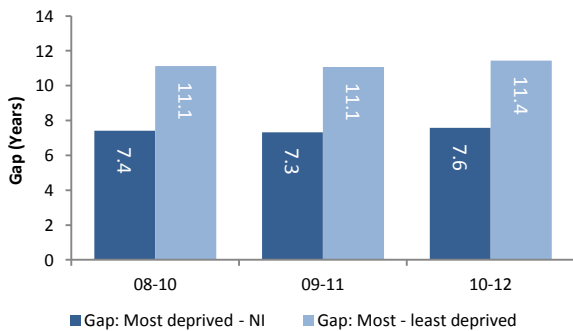
### Male DFLE: Deprivation Time Series



Due to the reason outlined below<sup>9</sup>, it is not appropriate to compare DFLE in areas across years. However, as any source related bias will be consistent within years, it is possible to compare within years.

The most-least deprived gap in male DFLE remained broadly similar over the period and stood at 11.4 years in 2010-12.

The deprivation gap between the most deprived areas and the region also remained similar, and was 11.4 years in 2010-12.



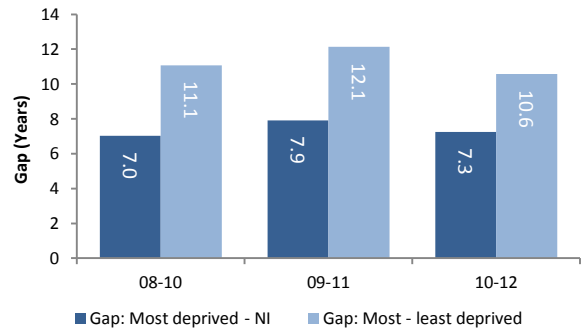
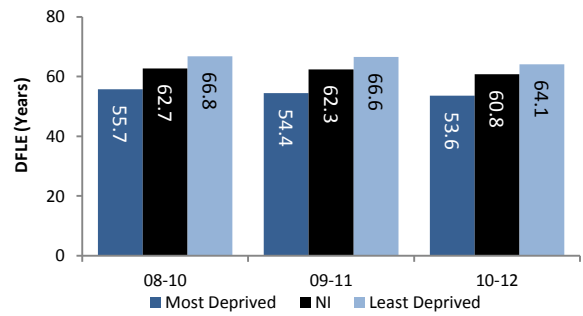
<sup>9</sup> The data source used to calculate this indicator has changed source in recent years, which has caused a slight discontinuity in the time series. For more information, see appendix 2.3 on page 114.

### Female DFLE: Deprivation Time Series

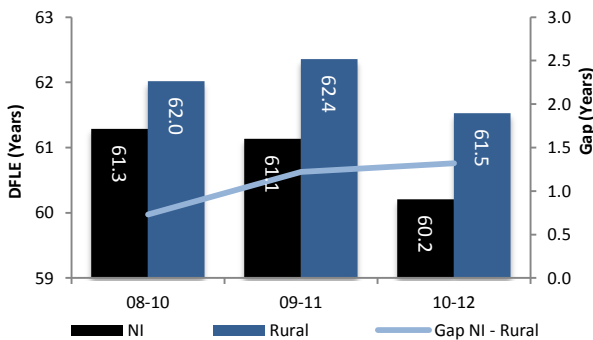
Females in Northern Ireland can expect on average to live without a chronic illness from birth until the age of 60.8 years in 2010-12.

The deprivation gap between NI and the most deprived areas was similar in 2010-12 (7.3 years) to that in 2008-10 (7.0 years).

The gap between the most and least deprived areas remained similar across the period, 11.1 years in 2008-10 and 10.6 years in 2010-12.



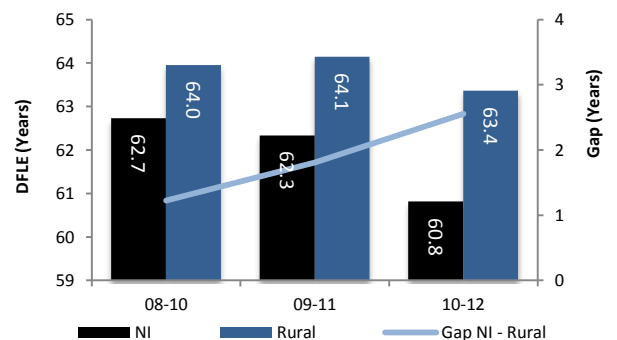
### Male DFLE: Rurality Time Series



In 2010-12, males in Northern Ireland can expect on average to live without a disability for 60.2 years, more than a year less than those in rural areas (61.5 years). The gap has almost doubled since 2008-10 (0.7 years).

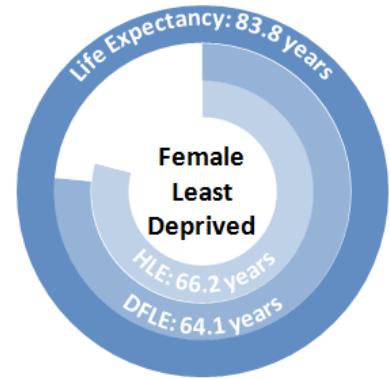
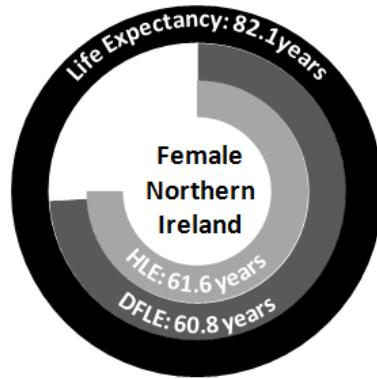
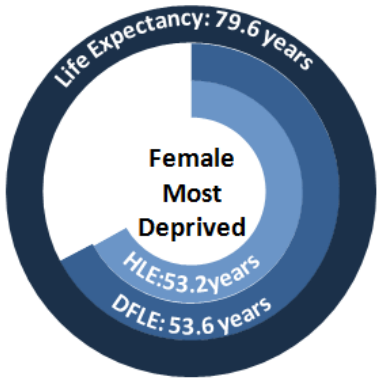
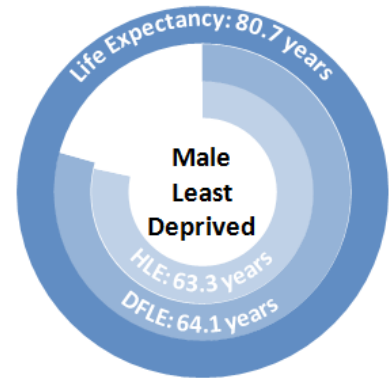
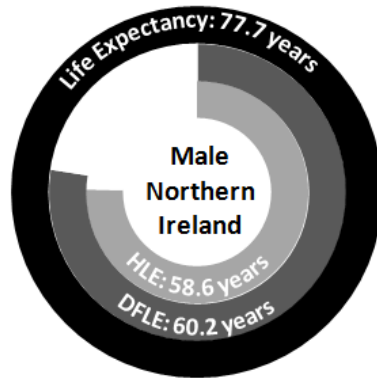
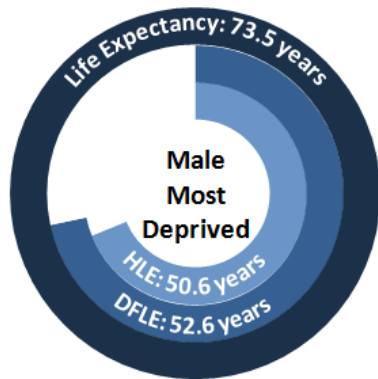
### Female DFLE: Rurality Time Series

Female disability free life expectancy in 2010-12 was 63.4 years in rural areas, 2.6 years higher than the regional average (60.8 years). The gap in 2010-12 was double that in 2008-10.



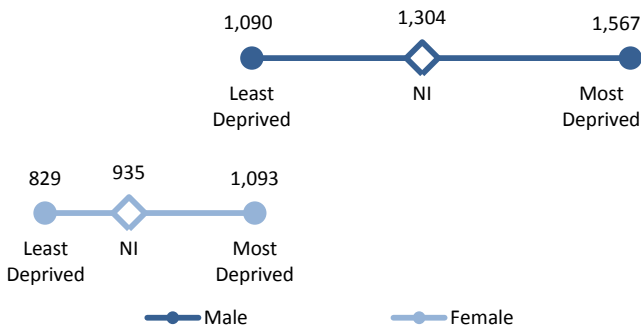
**Life Expectancy Breakdown**

Out of the six groups below, females in the most deprived areas can expect to spend the largest proportion of their lives in poor health (33%) and suffering from a disability (33%). Females in the least deprived areas can expect to spend the smallest proportion suffering from poor health (21%), while males in the least deprived areas can expect to spend the smallest proportion of their lives with a disability (21%).



## 2.4 Standardised Death Rate - All Age All Cause Mortality (AAACM)

### SDR - AAACM by Deprivation, 2008-12



In 2008-2012, males had a higher AAACM (1,304 deaths per 100,000 population) than females (935 deaths per 100,000 population).

The death rate amongst males living in the most deprived areas (1,567 deaths per 100,000 population) is almost double that for females living in the least deprived areas (829 deaths per 100,000 population).

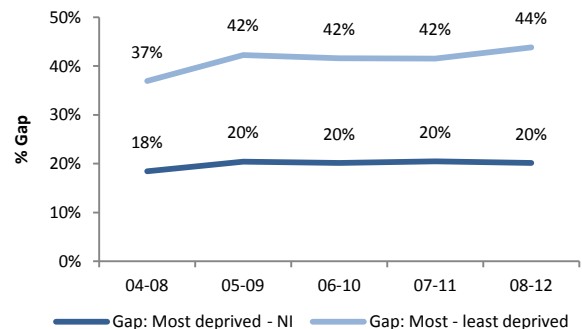
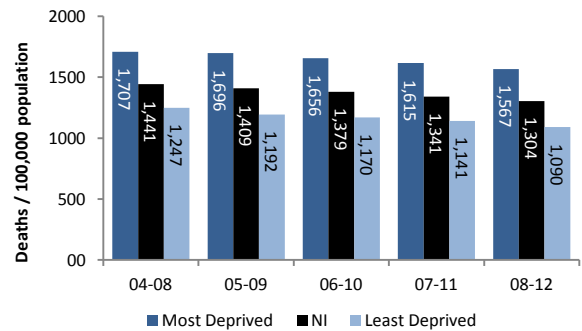
Males in the least deprived areas (1,090 deaths per 100,000 population) had a similar AAACM to females in the most deprived areas (1,093 deaths per 100,000 population).

### Male SDR - AAACM: Deprivation Time Series

Male AAACM in Northern Ireland decreased by 11% from 1,441 deaths per 100,000 population in 2004-08 to 1,304 deaths per 100,000 population in 2008-12.

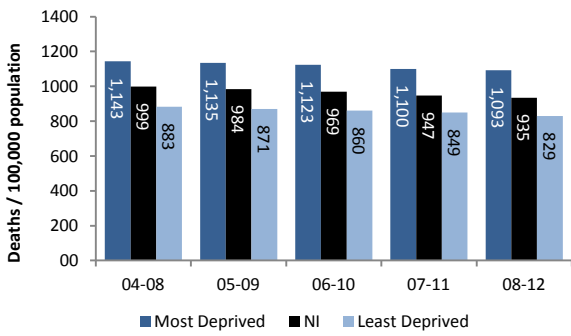
AAACM in the most deprived areas decreased at a slower rate (8%) than in the least deprived areas (13%), resulting in a widening of the deprivation gap between the most and least deprived areas from 37% to 44%.

AAACM in the most deprived areas remained around a fifth higher than the region in general across the period.



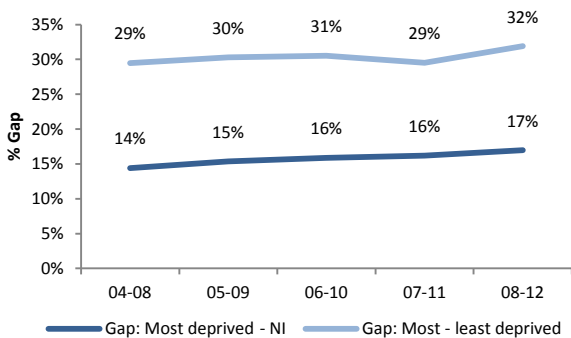


### Female SDR - AAACM: Deprivation Time Series



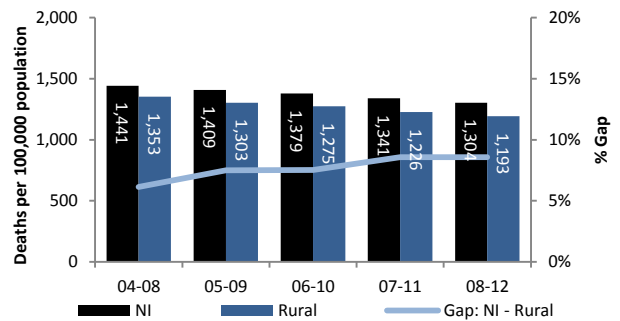
Between 2004-08 and 2008-12, female mortality fell by 6%, from 999 to 935 deaths per 100,000 population. A similar decrease was experienced in the least deprived areas, while the female mortality rate in the most deprived areas reduced by 4% to stand at 1,093 deaths per 100,000 population.

As a result, the deprivation gap between the most deprived areas and the regional average widened slightly, from 14% in 2004-08 to 17% in 2008-12. The gap between most and least deprived areas also increased slightly from 29% to 32%.

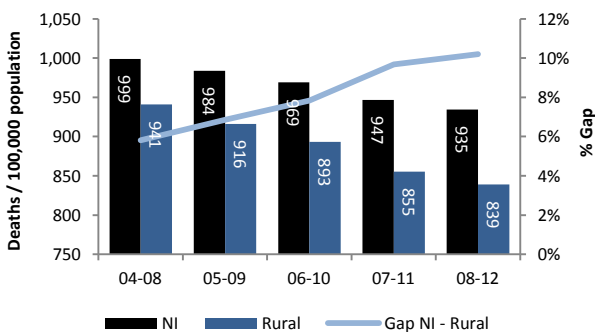


### Male SDR - AAACM: Rurality Time Series

AAACM in rural areas reduced by a tenth from 2004-08 and stood at 1,193 deaths per 100,000 population in 2008-12. Although this was a greater decrease than experienced in the region, the overall inequality gap remained fairly small and stood at 9% in 2008-12.



### Female SDR - AAACM: Rurality Time Series



Mortality in rural areas reduced from 941 deaths per 100,000 population in 2004-08 to 839 deaths per 100,000 population in 2008-12. As with males, the inequality gap between rural areas and NI was relatively small (10% in 2008-12).



# Premature & Preventable Mortality

Potential Years of Life  
Lost - All

Standardised Death Rate  
- Amenable

Standardised Death Rate  
- Preventable

Standardised Death Rate  
- Avoidable

## Potential Years of Life Lost

Per 100  
population

### Most Deprived



### Northern Ireland



### Least Deprived



### Standardised Death Rate Amenable

Most Deprived 221

NI 143

Least Deprived 100

Deaths per 100,000  
population

### Standardised Death Rate Avoidable

Most Deprived 429

267 NI

Least Deprived 180

### Standardised Death Rate Preventable

254 Most Deprived

149 NI

94 Least Deprived

### 3. Premature Deaths

*Many key government health strategies (e.g. “A Fitter Future for All”, “Making Life Better”, “Tobacco Control Strategy”, “Suicide Prevention Strategy” etc) state an explicit ambition to reduce premature or preventable deaths. It is important to measure levels of premature mortality as they are good indicators of the effectiveness of public health interventions as well as the quality of healthcare provided. This chapter measures change in premature and avoidable mortality across a number of indicators over time.*

*Potential Years of Life Lost is an estimated measure of the number of years lost when a person dies prematurely from any cause. As preventing premature deaths is a major public health goal, reducing PYLL remains a high priority.*

*Avoidable mortality is as an indicator to help to assess the quality and performance of healthcare and public health policies. The basic concept of avoidable mortality is that deaths caused by certain conditions, for which effective public health and medical interventions are available, should be rare and ideally, should not occur. Avoidable deaths are all those defined as preventable, amenable, or both.*

*A death is preventable if, in the light of understanding of the determinants of health at the time of death, all or most deaths from that cause could be avoided by public health interventions in the broadest sense.*

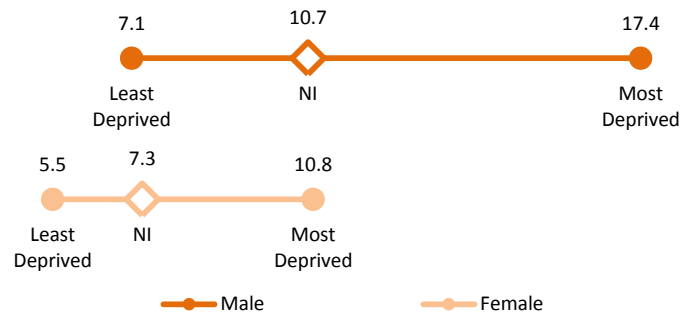
*A death is amenable if, in the light of medical knowledge and technology at the time of death, all or most deaths from that cause could be avoided through good quality healthcare.*

### 3.1 Potential Years of Life Lost (PYLL) – All Cause

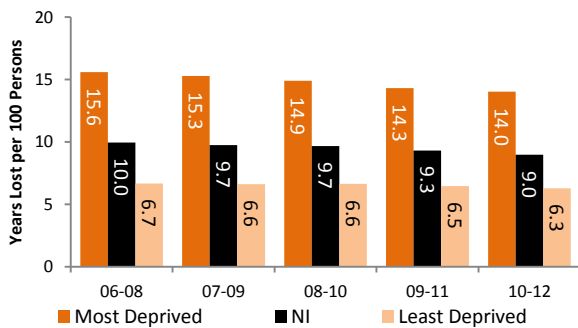
#### PYLL by Gender & Deprivation – 2010-12

In 2010-12, there were 10.7 years of life lost per 100 population due to premature male deaths, while females lost 7.3 years per 100 population.

Males in the most deprived areas lost 17.4 years per 100 population, over three times that lost by females in the least deprived areas (5.5 years per 100 population).



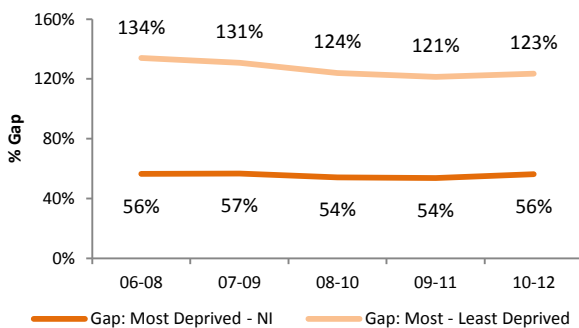
#### PYLL: Deprivation Time Series



PYLL in Northern Ireland decreased by 10% over the period, from 10.0 years per 100 population in 2006-08 to 9.0 years per 100 population in 2010-12.

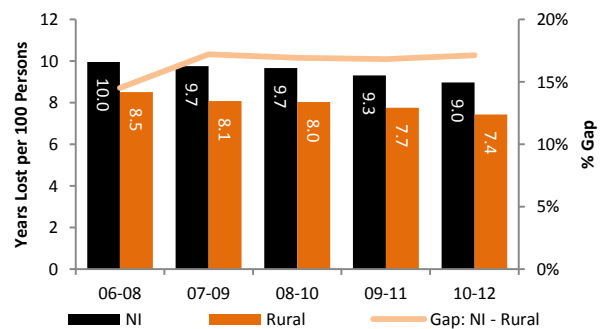
PYLL in the most deprived areas also decreased by 10%, a faster rate than in the least deprived areas (6%), resulting in a narrowing of the deprivation gap between the most and least deprived areas from 134% to 123%.

The gap between the NI average and most deprived areas remained broadly similar over the period and stood at 56% in 2010-12.



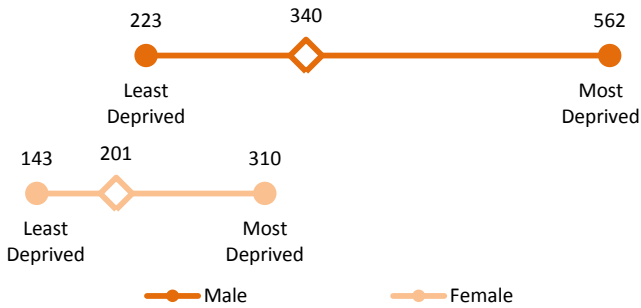
#### PYLL: Rurality Time Series

PYLL in rural areas was 7.4 years per 100 population, 17% lower than the NI average. This gap has remained similar since 2007-09.



### 3.2 Standardised Death Rate (SDR) – Avoidable<sup>10</sup>

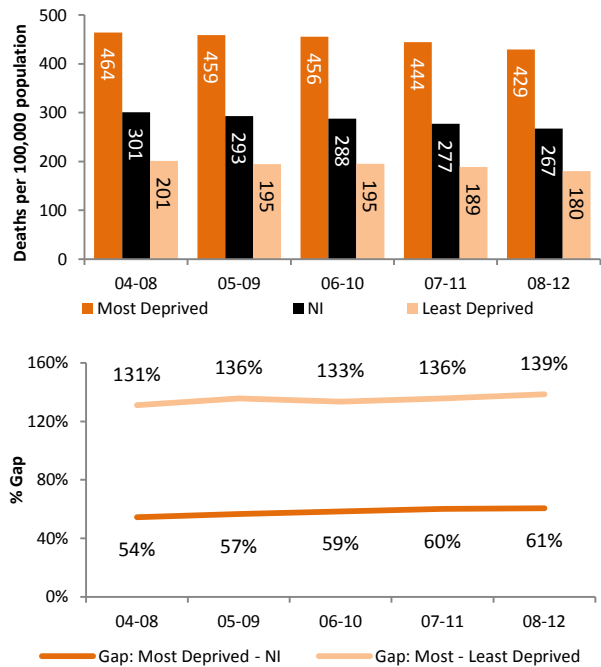
#### SDR – Avoidable by Gender & Deprivation, 2008-12



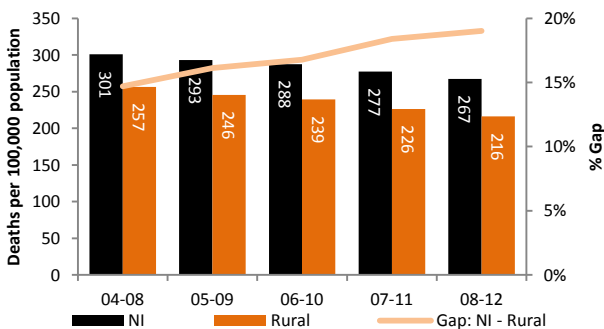
In 2010-12, the male avoidable death rate (340 deaths per 100,000 population) was 70% higher than that for females (201 deaths per 100,000 population). Males in the most deprived areas had an avoidable SDR nearly four times that of females in the least deprived areas.

#### SDR – Avoidable: Deprivation Time Series

Between 2004-08 and 2008-12, avoidable mortality fell by 11%, from 301 to 267 avoidable deaths per 100,000 population. During this period there was a 10% drop in the rate in the least deprived areas and an 8% drop in the most deprived areas, resulting in the inequality gap between the most deprived areas and NI, and between the most and least deprived areas increasing slightly.



#### SDR - Avoidable: Rurality Time Series



Avoidable mortality in rural areas dropped by 16% over the period, compared with a decrease of 11% regionally. This resulted in a widening of the rurality gap from 15% to 19%.

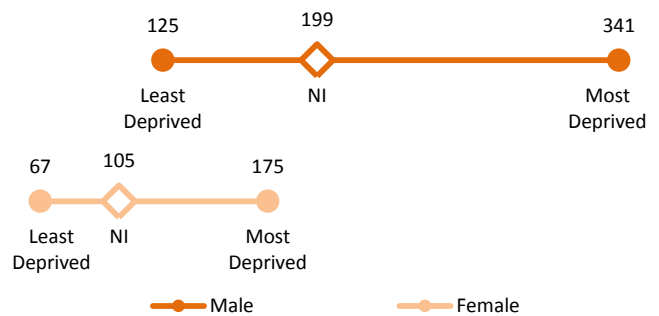
<sup>10</sup> A complete list of causes can be found in Table A2: Amenable, Preventable & Avoidable Causes on page 115.

### 3.3 Standardised Death Rate (SDR) – Preventable

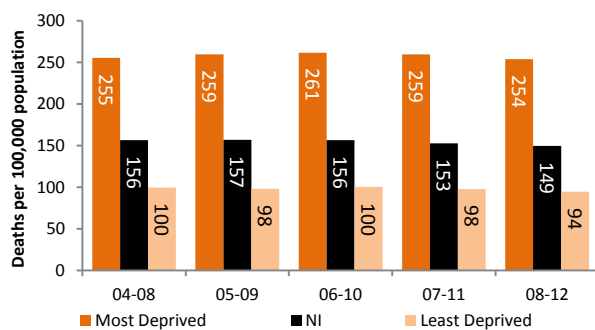
#### SDR – Preventable by Gender & Deprivation, 2008-12

In 2010-12, the male preventable death rate (199 deaths per 100,000 population) was almost double that for females (105 deaths per 100,000 population).

Males in the most deprived areas had a preventable SDR of 341 deaths per 100,000 population, over five times higher than females in the least deprived areas (67 deaths per 100,000 population).

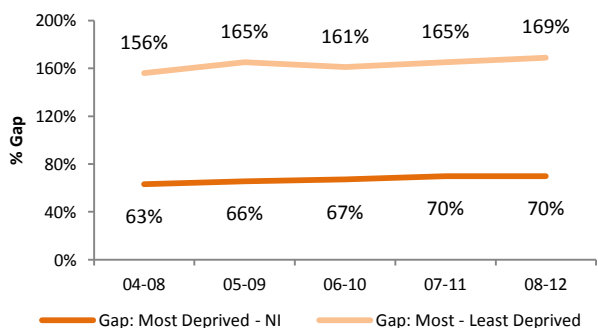


#### SDR – Preventable: Deprivation Time Series



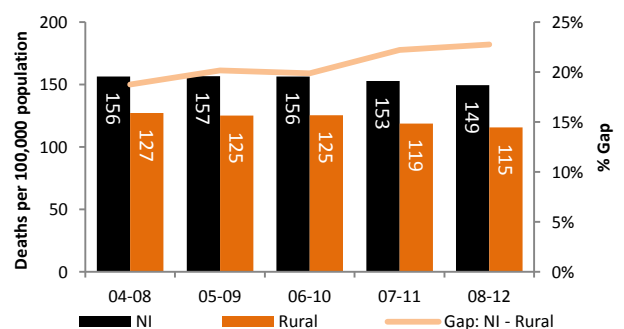
Preventable mortality fell slightly from 2004-08 and stood at 149 deaths per 100,000 population in 2008-12.

In 2008-2012, preventable mortality in the most deprived areas was 254 deaths per 100,000 population, almost three times that in the least deprived areas (94 deaths per 100,000 population) and 70% higher than the regional average.



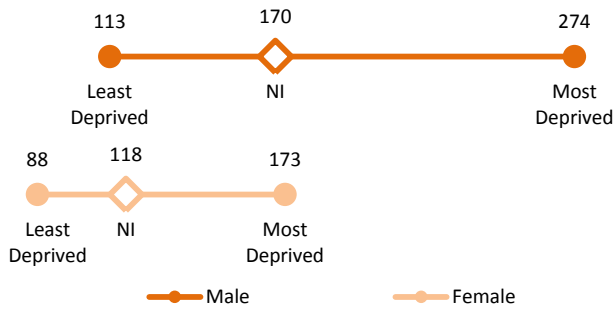
#### SDR - Preventable: Rurality Time Series

Preventable mortality in rural areas dropped by 9% between 2004-08 and 2008-12, compared with a decrease of 4% regionally. This resulted in a widening of the gap from 19% to 23%.



### 3.4 Standardised Death Rate (SDR) – Amenable

#### SDR – Amenable by Gender & Deprivation, 2008-12



In 2010-12, the male amenable death rate (170 deaths per 100,000 population) was almost 50% higher than that for females (118 deaths per 100,000 population).

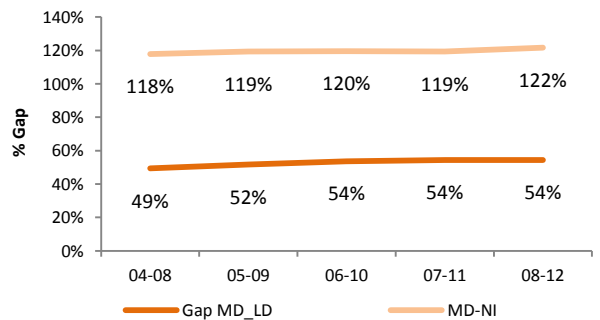
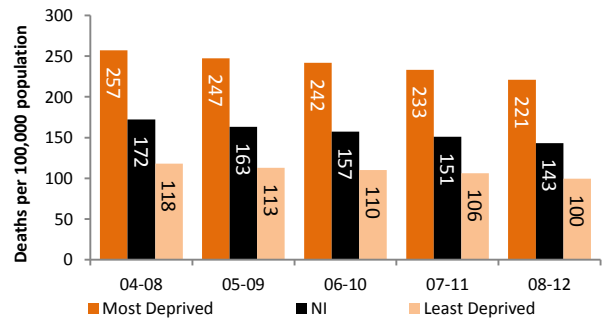
Males in the most deprived areas had an amenable SDR over three times that of females in the least deprived areas.

#### SDR – Amenable: Deprivation Time Series

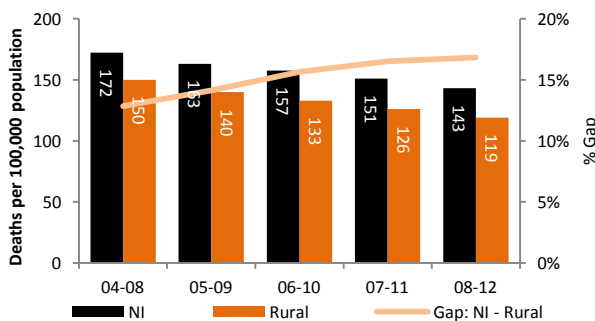
Since 2004-08, the standardised death rate for amenable causes decreased by almost a fifth, to stand at 143 deaths per 100,000 population in 2008-12.

There were similar decreases in the most (14%) and least deprived areas (16%) over the period which meant that the gap remained fairly constant and stood at 122% in 2008-12.

Similarly, the inequality gap between NI and the most deprived areas increased slightly to 54% in 2008-12.



#### SDR - Amenable: Rurality Time Series



Amenable mortality in rural areas reduced from 150 deaths per 100,000 population in 2004-08 to 119 deaths per 100,000 population in 2008-12. The gap between rural areas and NI increased from 13% to 17%.



# Hospital Admissions

Standardised Admission Rate (SAR) - All

Standardised Admission Rate (SAR) – Emergency

Standardised Admission Rate (SAR) - Elective

Standardised Admission Rate (SAR) – Day Cases

## All Admissions

Most Deprived



Nine admissions  
for every  
twenty people

Northern Ireland



Seven admissions  
for every  
twenty people

Least Deprived



Six admissions  
for every  
twenty people

SAR Emergency

Most deprived

**74%**

Higher than  
least deprived

Most deprived

**31%**

Higher than  
Northern Ireland

Elective Inpatients

Most deprived

**25%**

Higher than  
least deprived

Most deprived

**12%**

Higher than  
Northern Ireland

SAR Day Cases

Most deprived

**21%**

Higher than  
least deprived

Most deprived

**12%**

Higher than  
Northern Ireland

Per 100,000 population

## 4. Hospital Admissions

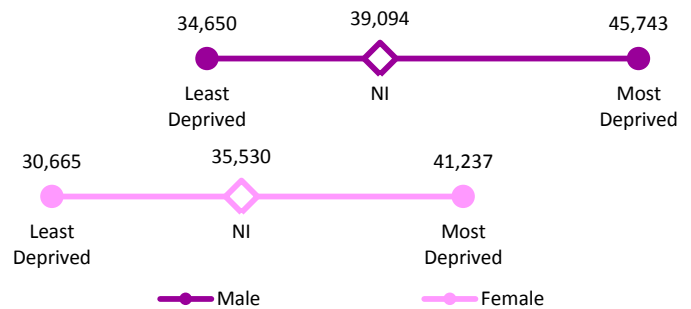
*There is evidence in the UK that admission rates are significantly correlated with measures of social deprivation (Majeed et al 2000). Evidence within the UK, Europe and North America also suggests that people from lower socio-economic groups are at higher risk of avoidable emergency admissions. Socio-demographic variables explain almost half of the variation in emergency admissions between GP practice populations, with deprivation more strongly linked to emergency than to elective admission (Reid et al 1999; Duffy et al 2002). Emergency admission rates among the most deprived GP practice populations can be up to twice those among those serving the least deprived practice populations (Blatchford et al 1999; Purdy et al 2010). Age standardised hospital admission rates, particularly emergency admissions, are therefore important measures of the effectiveness of preventative strategies and key indicators of health inequality between the most and least deprived areas of Northern Ireland.*

## 4.1 Standardised Admission Rate (SAR) - All

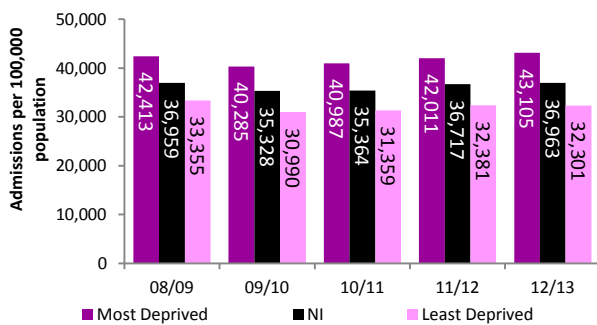
### SAR – All by Gender & Deprivation, 2012/13

The male admission rate in NI (39,094 admissions per 100,000 population) was 10% higher than that for females (35,530 admissions per 100,000 population).

The highest admission rate was found among males in the most deprived areas (45,743 admissions per 100,000 population) which was one and a half times that for females in the least deprived areas (30,665 admissions per 100,000 population).

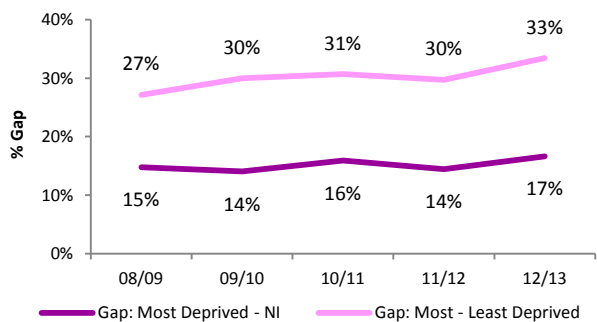


### SAR – All: Deprivation Time Series



Between 2008/09 and 2012/13, the standardised admission rate in NI and its most deprived areas both remained fairly constant, standing at 36,963 admissions per 100,000 population and 43,105 admissions per 100,000 population in 2012/13 respectively.

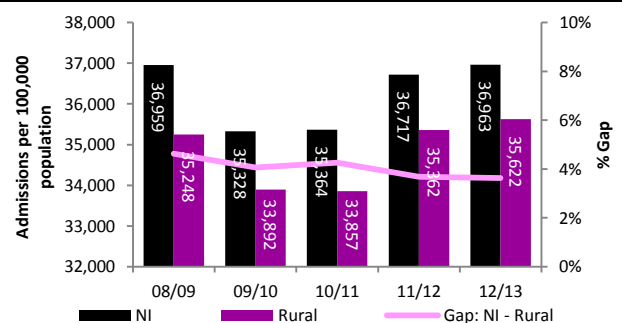
There was therefore little change in the gap between the most deprived areas and NI, which stood at 17% in 2012/13.



The least deprived areas saw a slight drop of 3% in admissions over the period, from 33,355 to 32,301 admissions per 100,000 population. This led to a widening of the most-least deprived inequality gap, with the rate in the most deprived areas a third higher than that in the least deprived areas in 2012/13.

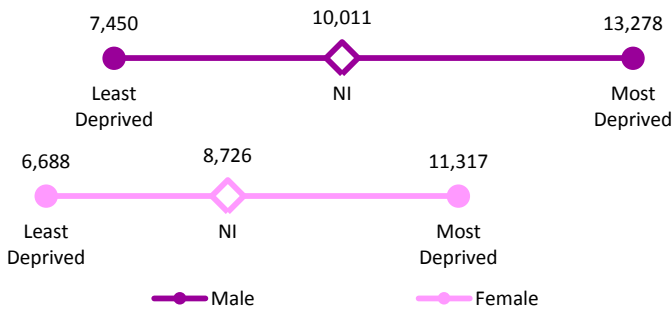
### SAR – All: Rurality Time Series

The admission rate in rural areas remained broadly similar across the period, and was 35,622 admissions per 100,000 population in 2012/13. The NI-rural inequality gap remaining small, between 3% and 5% throughout the period.



## 4.2 Standardised Admission Rate (SAR) - Emergency

### SAR – Emergency by Gender & Deprivation, 2012/13



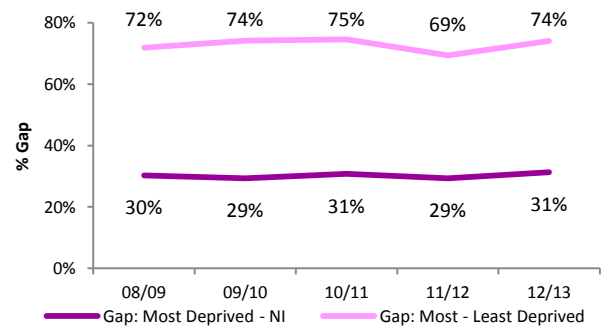
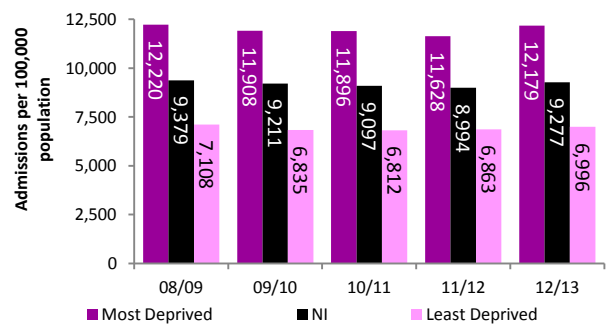
In 2012/13, the male emergency admission rate was 10,011 per 100,000 population, 15% higher than for females (8,726 per 100,000 population).

The male admission rate in the most deprived areas was 13,278 per 100,000 population, a third higher than the regional average and double that for females in the least deprived areas (6,688 admissions per 100,000 population).

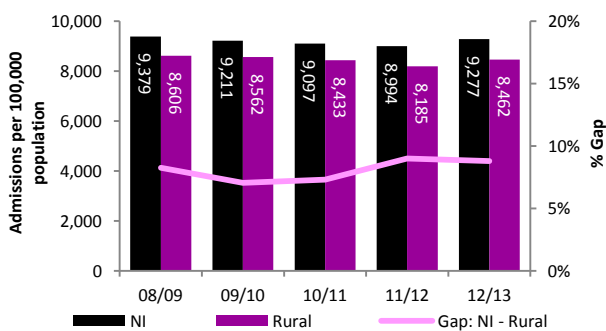
### SAR – Emergency: Deprivation Time Series

Between 2008/09 and 2012/13, the standardised emergency admission rate remained broadly similar, and stood at 9,277 admissions per 100,000 population in 2012/13.

The most and least deprived areas also saw little variation over the period. In 2012/13, the emergency admission rate in the most deprived areas was 12,179 per 100,000 population, 31% higher than the regional rate and 74% higher than that in the least deprived areas (6,996 admissions per 100,000 population).



### SAR – Emergency: Rurality Time Series



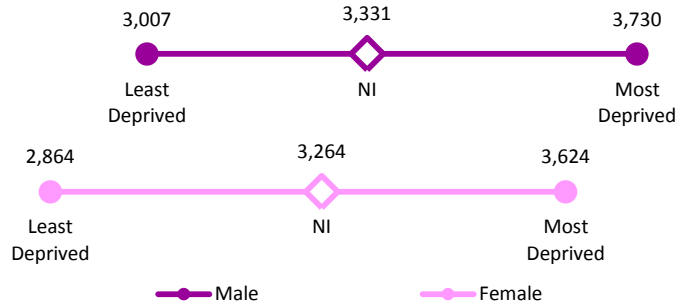
Emergency admissions in rural areas remained similar over the period, and stood at 8,462 admissions per 100,000 population in 2012/13. The admission rate in 2012/13 was 9% lower in rural areas than regionally, a similar gap to that experienced in previous years.

### 4.3 Standardised Admission Rate (SAR) - Elective Inpatients<sup>11</sup>

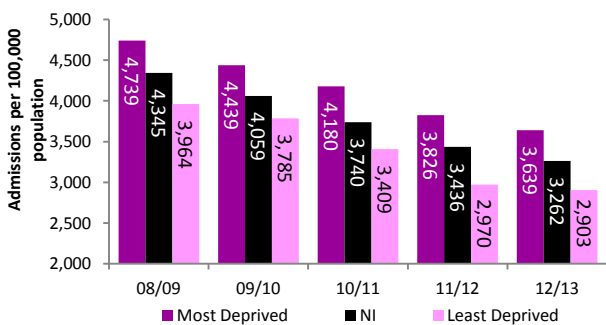
#### SAR – Elective by Gender & Deprivation, 2012/13

The male standardised elective admission rate in 2012/13 (3,331 admissions per 100,000 population) was similar to that for females (3,264 admissions per 100,000 population).

The largest inequality gap was experienced with males in the most deprived areas (3,730 admissions per 100,000 population) which was a third higher than for females in the least deprived areas (2,864 admissions per 100,000 population).



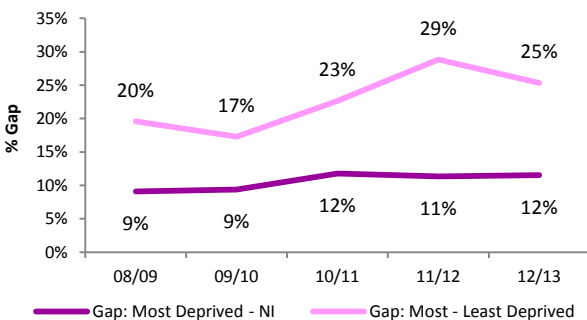
#### SAR – Elective: Deprivation Time Series



Elective admissions have reduced by a quarter from 4,345 admissions per 100,000 population in 2008/09 to 3,262 admissions per 100,000 population in 2012/13.

The relative drop in admission rate in the most deprived areas was slightly smaller than regionally, with the 2012/13 rate 23% below that in 2008/09. This led to a small increase in the most deprived – NI inequality gap, from 9% to 12%.

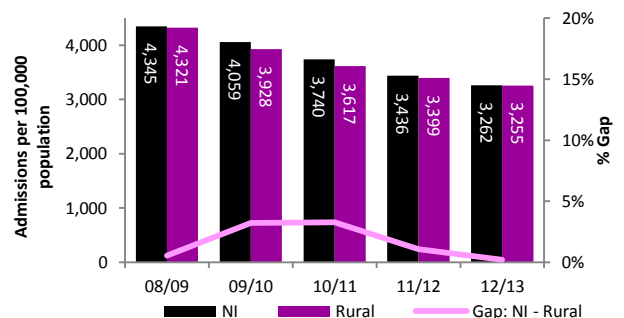
In comparison, the elective admission rate in the least deprived areas fell by 27%. This led to a widening of the most-least deprived inequality gap, from 20% in 2008/09 to 25% in 2012/13.



#### SAR – Elective: Rurality Time Series

Both the NI and rural elective admission rates decreased by a quarter between 2008/09 and 2012/13.

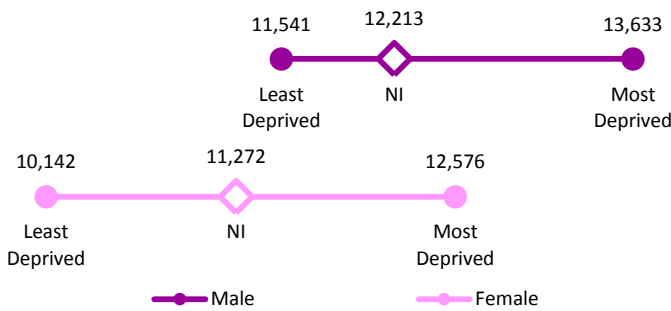
There was virtually no difference in the elective admission rates in NI and rural areas over the period.



<sup>11</sup> Excludes Day Cases

## 4.4 Standardised Admission Rate (SAR) - Day Case

### SAR – Day Case by Gender & Deprivation, 2012/13



In 2012/13, the standardised admission rate of day cases amongst males was 12,213 admissions per 100,000 population, 8% higher than that for females (11,272 admissions per 100,000 population).

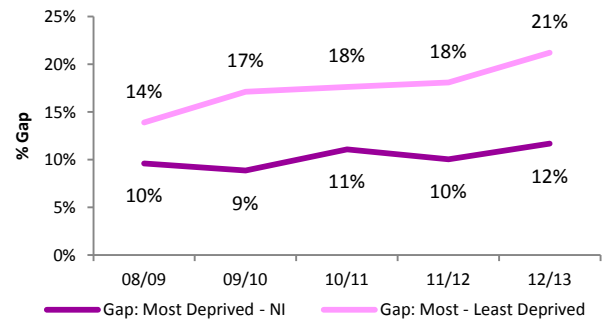
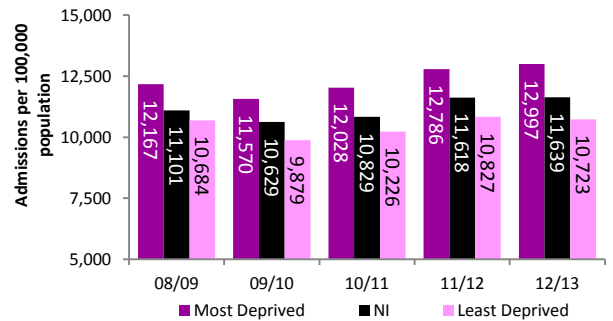
Males in the most deprived areas (13,633 admissions per 100,000 population) had an admission rate a third higher than females in the least deprived areas (10,142 admissions per 100,000 population.)

### SAR – Day Case: Deprivation Time Series

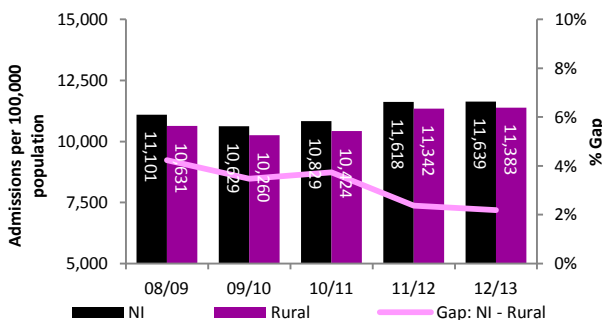
The day case admission rate rose by 5% from 11,101 admissions per 100,000 population in 2008/09 to 11,639 admissions per 100,000 population in 2012/13.

The admission rate in the most deprived areas rose by 7%, to stand at 12,997 admissions per 100,000 population in 2012/13 12% higher than the regional average.

Conversely, the day case admission rate in the least deprived areas remained broadly similar across the period, with a rate of 10,723 admissions per 100,000 population in 2012/13. The most-least deprived inequality gap widened from 14% to over one-fifth higher in 2012/13.



### SAR – Day Case: Rurality Time Series



The day case admission rate in rural areas was 11,383 admissions per 100,000 population in 2012/13, 7% lower than that in 2008/09.

The gap between NI and rural areas remained small across the period, and stood at 2% in 2009/10.

# Circulatory Disease

Standardised Admission Rate - Circulatory (All)

Standardised Death Rate - Circulatory (U75)

Standardised Prescription Rate - Antihypertensive

Standardised Prescription Rate - Statins

## Standardised Death Rate (U75) (Deaths per 100,000 population)

150 Most Deprived

93 NI

61 Least Deprived

61% higher

146% higher

## Standardised Admission Rate

Most Deprived

NI

Least Deprived

All Ages

2,570

2,335

2,022

Admissions per 100,000 population

<75 Years

1,990

1,685

1,417

## Standardised Prescription Rate (per 1,000 persons)

Most Deprived

Northern Ireland

Least Deprived

196

170

150

Statins

255

224

205

Antihypertensive

## 5. Circulatory Disease

*Circulatory disease is a major health burden and is largely preventable. It relates to problems of the heart and the circulation of blood in central and peripheral vessels and includes cerebrovascular disease (stroke), coronary heart disease (CHD) and other cardiovascular diseases. Despite recent improvements, circulatory disease remains one of the main causes of disability and death in Northern Ireland, being attributable to one in four deaths of which a quarter occur in those under 75 years of age. This can be partly attributed to lifestyle, with the risk of circulatory disease increasing with lack of physical exercise, poor diet, smoking and alcohol consumption. Deaths and hospital admission rates which are key indicators of improvement performance are detailed along with standardised prescription rates for antihypertensive drugs and statins which are used to lower cholesterol. As death rates are presented for those under 75 years of age, standardised admission rates for the same age group have been included in the appendices for comparison<sup>12</sup>.*

<sup>12</sup> See appendix

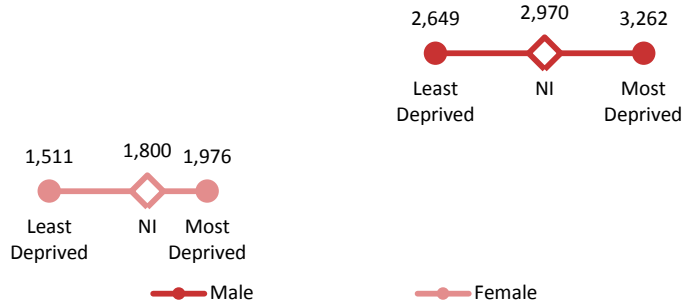
5.5 Standardised Admission Rate (SAR) – Circulatory (U75) on page 121



## 5.1 Standardised Admission Rate (SAR) - Circulatory

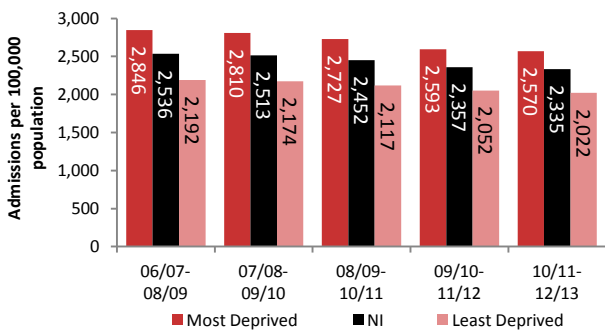
### SAR - Circulatory by Gender & Deprivation, 2010/11-2012/13

In 2010/11-2012/13, the admission rate for males due to circulatory diseases (2,970 admissions per 100,000 population) was two-thirds higher than for females (1,800 admissions per 100,000 population). The rate was notably high among males in the most deprived areas (3,262 admissions per 100,000 population) which was more than double that of their female counterparts in the least deprived areas (1,511 admissions per 100,000 population).



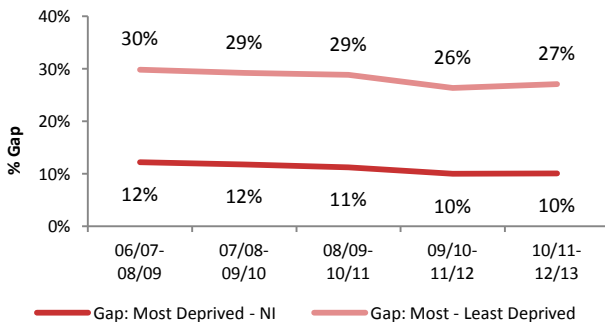
The circulatory admission rate for the most deprived females (1,976 admissions per 100,000 population) was a quarter lower than the rate for males in the least deprived areas (2,649 admissions per 100,000 population).

### SAR - Circulatory: Deprivation Time Series



The standardised admission rate for circulatory disease decreased by 8%, from 2,536 admissions per 100,000 population in 2006/07-08/09 to 2,335 admissions per 100,000 population in 2010/11-2012/13.

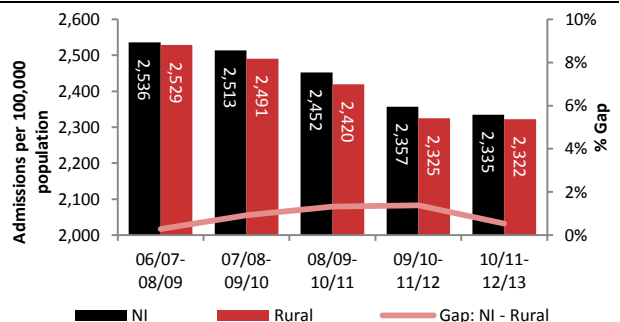
With a similar decrease in the least deprived areas (8%) and a decrease of 10% in the most deprived areas, the most deprived-NI gap narrowed slightly over the period from 12% to 10% in 2010/11-2012/13 while the most-least deprived gap fell from 30% to 27%.



### SAR - Circulatory: Rurality Time Series

Admissions due to circulatory diseases in rural areas dropped by 8% between 2006/07-08/09 and 2010/11-2012/13, a similar decrease to the regional average (8%).

There was little difference between rates in NI and rural areas across the period.

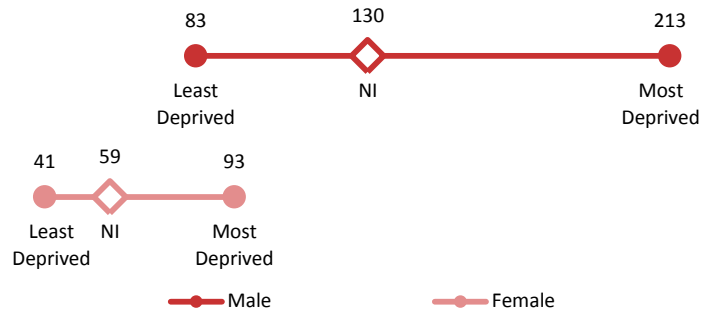


## 5.2 Standardised Death Rate (SDR) – Circulatory (U75)

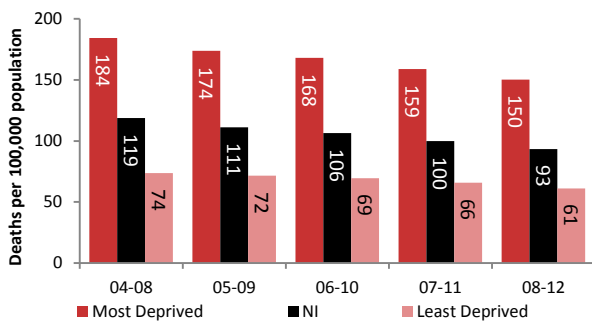
### SDR – Circulatory (U75) by Gender & Deprivation, 2008-12

In 2008-12, the male circulatory death rate (130 deaths per 100,000 population) was more than double that for females (59 deaths per 100,000 population).

The death rate for males in the most deprived areas was 213 deaths per 100,000 population, over five times that for females in the least deprived areas (41 deaths per 100,000 population).



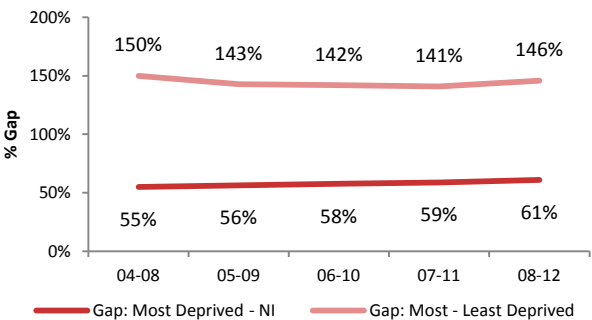
### SDR – Circulatory (U75): Deprivation Time Series



SDR circulatory for those aged under 75 dropped by a fifth, from 119 deaths per 100,000 population in 2004-08 to 93 deaths per 100,000 population in 2008-12.

Over the same period, the circulatory death rate in the most deprived areas dropped by 18%, similar to the decrease of 17% experienced in the least deprived areas.

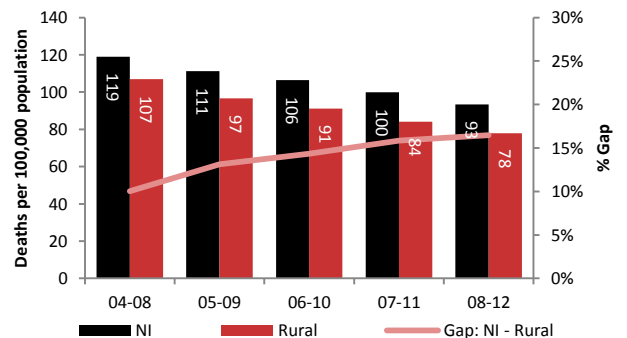
This resulted in little change in the most-least deprived gap, which stood at 146% in 2008-12, while the gap between the most deprived areas and NI widened slightly to stand at 61% in 2008-12.



### SDR – Circulatory (U75): Rurality Time Series

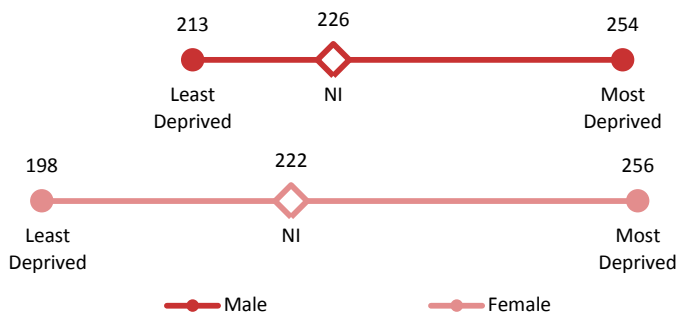
Circulatory death rates in rural areas dropped by over a quarter during the period, from 107 deaths per 100,000 population in 2004-08 to 78 deaths per 100,000 population in 2008-12.

As this was a sharper decrease than that seen regionally, the gap between the NI average and rural areas widened from 10% in 2004-08 to 16% in 2008-12.



## 5.4 Standardised Prescription Rate (SPR) – Antihypertensive<sup>13</sup>

### SPR - Antihypertensive by Gender & Deprivation, 2012



In 2012, males and females had similar antihypertensive prescription rates, at 226 and 222 persons prescribed per 1,000 population respectively.

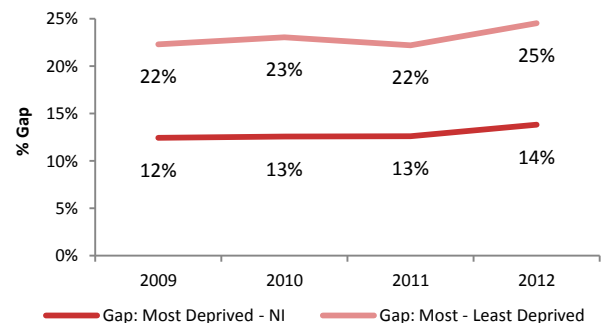
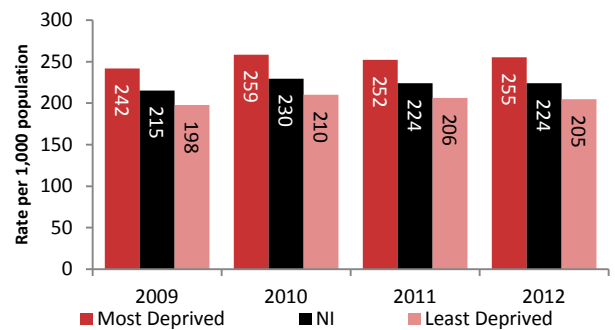
Prescription rates for males and females were broadly similar across all areas, except in the least deprived areas, where males had a 7% higher prescription rate than females.

### SPR - Antihypertensive: Deprivation Time Series

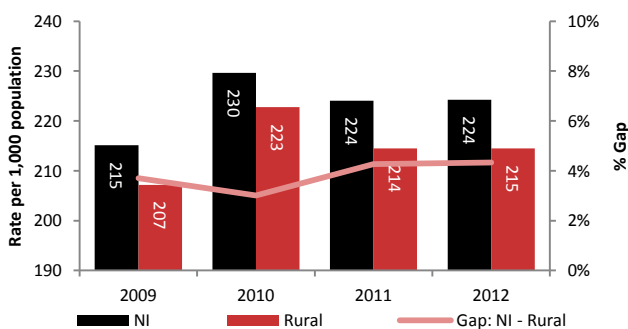
The antihypertensive prescription rate in NI increased slightly, from 215 persons prescribed per 1,000 population in 2009 to 224 persons prescribed per 1,000 population in 2012.

In the most deprived areas, the prescription rate was 255 persons prescribed per 1,000 population, 6% higher than that in 2009. This led to a slight widening of the inequality gap between the most deprived areas and NI, from 12% in 2009 to 14% in 2012.

The prescription rate in the least deprived areas increased by 4% to stand at 205 persons prescribed per 1,000 population in 2012. This is a quarter higher than in the most deprived areas, a slightly wider gap than in 2009 (22%).



### SPR - Antihypertensive: Rurality Time Series



The antihypertensive prescription rate in rural areas was slightly higher than the regional rate and stood at 215 persons prescribed per 1,000 population.

The gap between NI and rural prescription rates remained consistent throughout the period and stood at 4% in 2012.

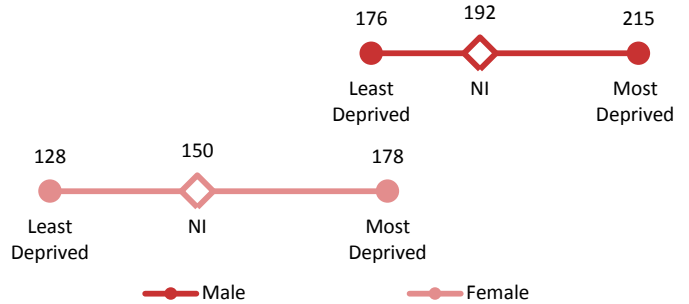
<sup>13</sup> Refers to the number of persons who have been prescribed antihypertensive medication, as opposed to the number of prescriptions.

## 5.5 Standardised Prescription Rate (SPR) - Statins

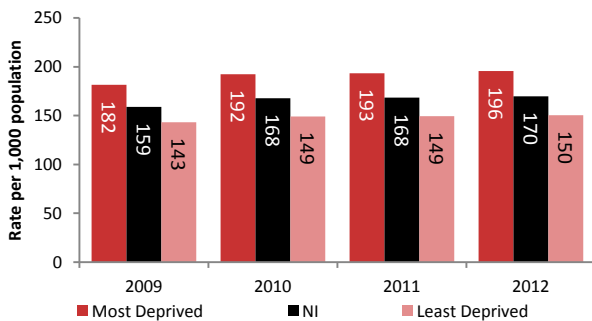
### SPR – Statins by Gender & Deprivation, 2012

The regional average prescription rate for statins in 2012 was 28% higher for males (192 persons prescribed per 1,000 population) than for females (150 persons prescribed per 1,000 population).

Males in the least deprived areas had a similar prescription rate to females in the most deprived areas, while males in the most deprived areas had a prescription rate two-thirds higher than females in the least deprived areas.

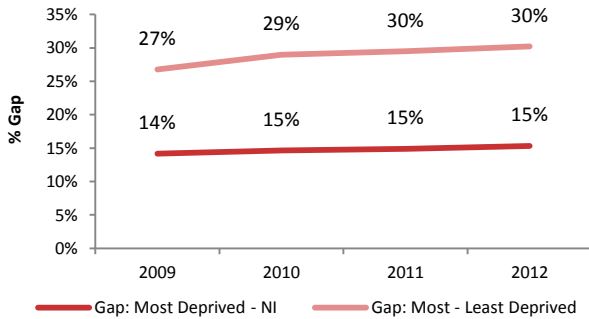


### SPR – Statins: Deprivation Time Series



Between 2009 and 2012, the standardised prescription rate for statins increased by 7%, from 159 to 170 per 1,000 population.

The prescription rate in the most deprived areas increased by 8% to stand at 196 persons prescribed per 1,000 population in 2012. With a similar increase regionally, the most deprived-NI inequality gap remained similar across the period, and stood at 15% in 2012.

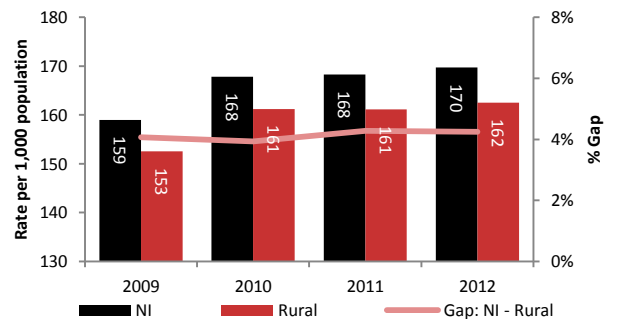


The least deprived areas saw a smaller increase of 5% between 2009 (143 persons prescribed per 1,000 population) and 2012 (150 persons prescribed per 1,000 population), leading to a widening of the most-least deprived inequality gap from 27% to 30% in 2012.

### SPR – Statins: Rurality Time Series

Statin prescription rates in rural areas increased by 7% between 2009 (153 persons prescribed per 1,000 population) and 2012 (162 persons prescribed per 1,000 population).

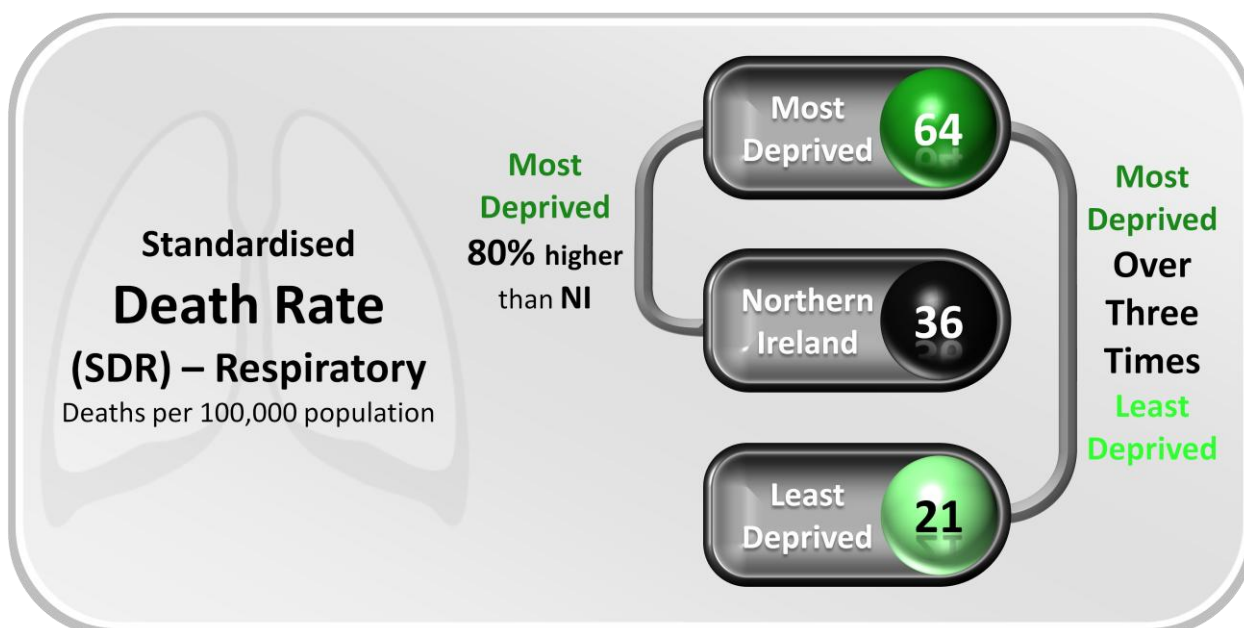
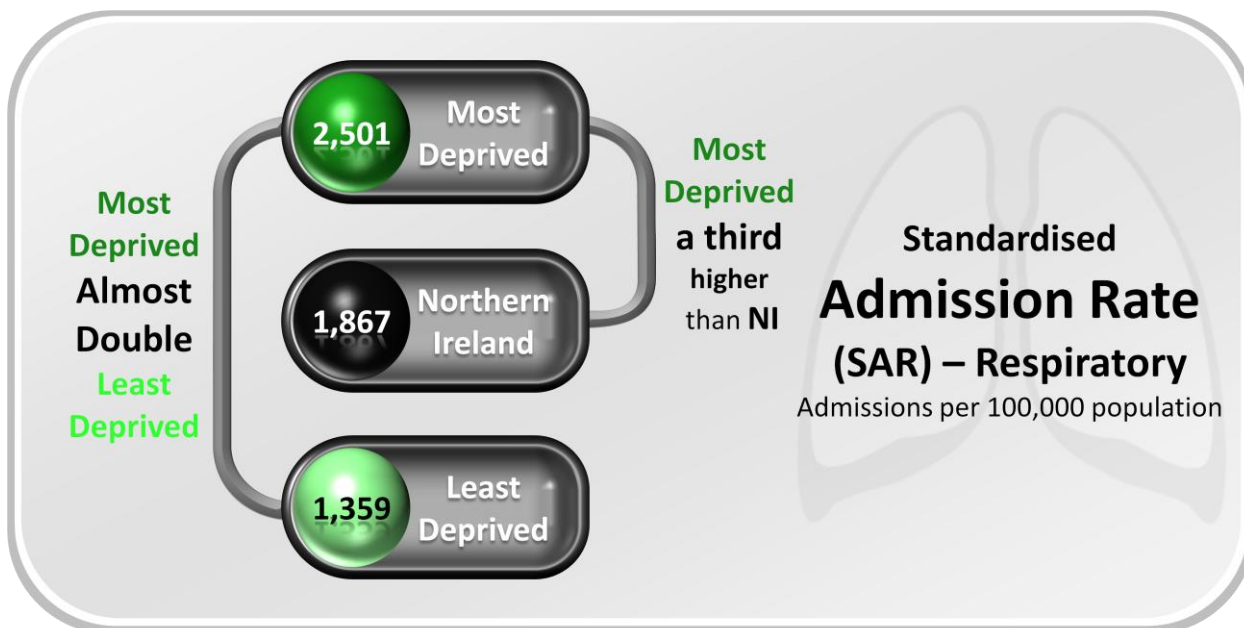
As this was a similar increase to that experienced regionally, the gap between NI and rural areas remained similar across the period.



# Respiratory Disease

Standardised Admission Rate (All) - Respiratory

Standardised Death Rate (U75) - Respiratory

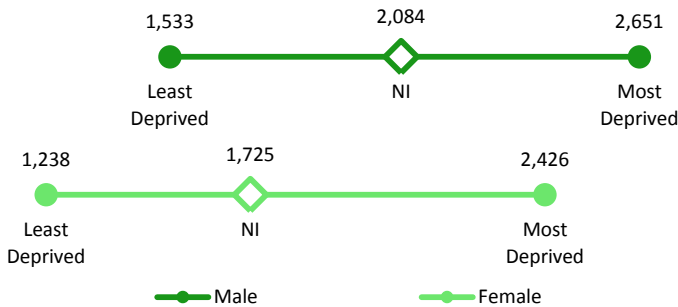


## 6. Respiratory Disease

*Respiratory disease is one of the main causes of death in Northern Ireland and includes pneumonia, chronic lower respiratory disease, chronic obstructive pulmonary disorder (COPD), asthma, influenza and other respiratory diseases. GP registers indicate that almost 2% of the population have COPD, while a further 6% have asthma. Of all deaths in Northern Ireland, 14% are attributable to respiratory disease, of which a fifth occur under 75 years of age. Air quality, improvements in lifestyle behaviours, smoking status and improved working environments can all be addressed to reduce the prevalence of respiratory diseases.*

## 6.1 Standardised Admission Rate (SAR) –Respiratory

### SAR - Respiratory by Gender & Deprivation, 2010/11-2012/13



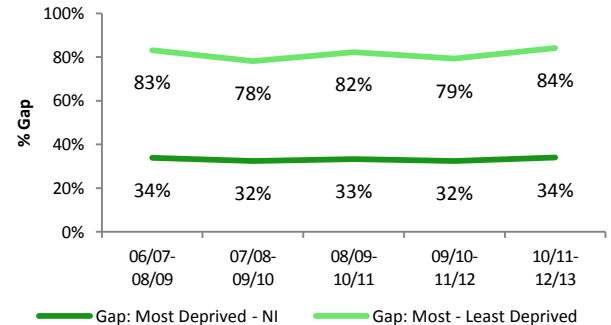
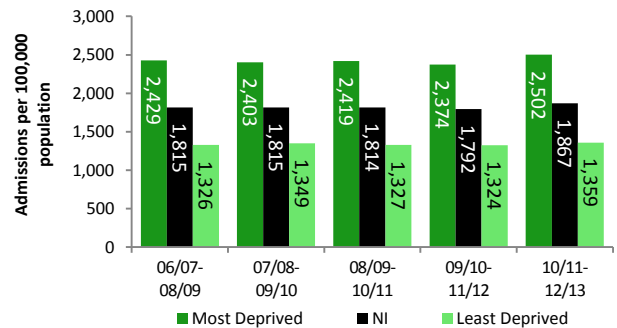
In 2010/11-2012/13, the standardised admission rate for respiratory diseases among males was 2,084 admissions per 100,000 population, a fifth higher than that for females (1,725 admissions per 100,000 population).

Males in the most deprived areas (2,651 admissions per 100,000 population) were more than twice as likely to be admitted than females residing in the least deprived areas (1,238 admissions per 100,000 population).

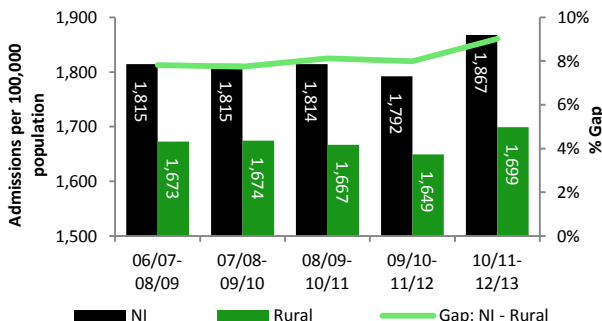
### SAR - Respiratory: Deprivation Time Series

In 2010/11-2012/13, SAR – Respiratory stood at 1,867 admissions per 100,000 population, a 3% increase from the rate in 2006/07-2008/09.

Over this period, similar increases were experienced in the most and least deprived areas, which led to both the most deprived-NI gap (34%) and the most-least deprived gap (84%) remaining similar, despite slight fluctuation across the period.



### SDR - Respiratory: Rurality Time Series

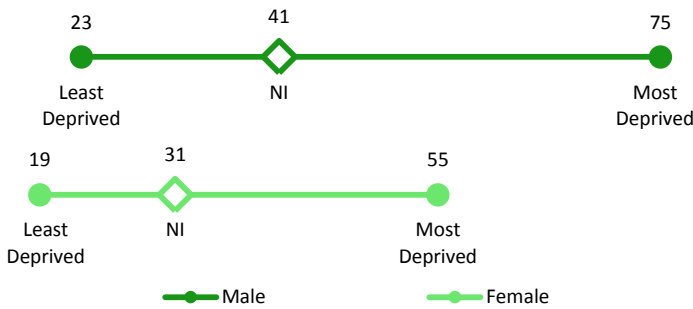


Respiratory admission rates in rural areas increased from 1,673 admissions per 100,000 population in 2006/07-08/09 to 1,699 admissions per 100,000 population in 2010/11-2012/13.

There was little change in the rural gap over the period which stood at 9% in 2010/11-2012/13.

## 6.2 Standardised Death Rate (SDR) –Respiratory (U75)

### SDR - Respiratory (U75) by Gender & Deprivation, 2008-12



In 2008-12, there were 41 deaths per 100,000 population among males under 75 years of age, a third higher than their female counterparts.

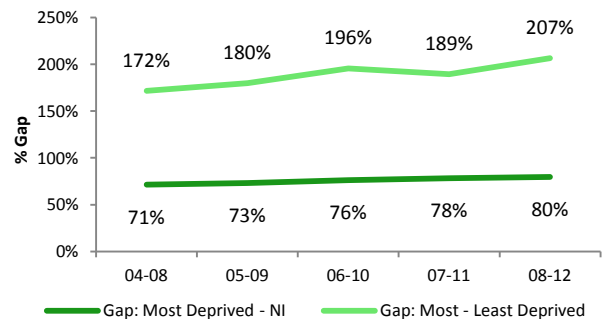
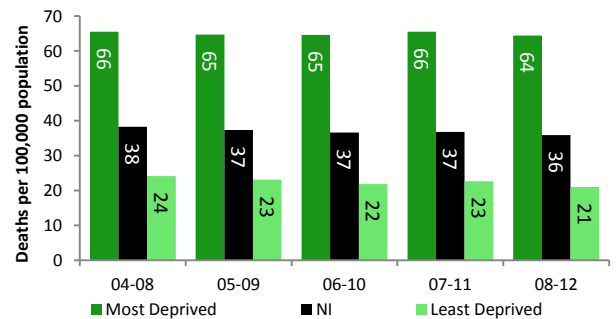
The death rate was highest for males in the most deprived areas (75 deaths per 100,000 population) which was four times that for females in the least deprived areas (19 deaths per 100,000 population).

### SDR – Respiratory (U75): Deprivation Time Series

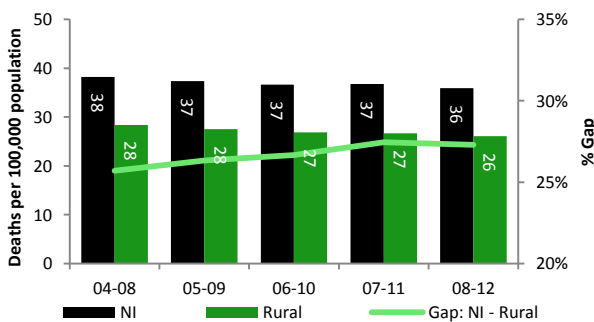
Over the period, the death rate due to respiratory disease dropped slightly to 36 deaths per 100,000 population.

The death rate in the most deprived areas remained fairly constant across the period, and stood at 64 deaths per 100,000 population in 2008-12. This led to a widening of the most deprived-NI inequality gap over the period, from 71% in 2004-08 to 80% in 2008-12.

In the least deprived areas the rate decreased by 13% to 21 deaths per 100,000 population in 2008-12, less than a third of the rate in the most deprived areas. This resulted in a widening of the inequality gap, from 172% in 2004-08 to 207% in 2008-12.



### SDR – Respiratory (U75): Rurality Time Series



The respiratory death rate in rural areas was 26 deaths per 100,000 population in 2008-12, 8% lower than in 2004-08. It remained more than a quarter lower than the regional average across the period.



# Cancer

Standardised Incidence Rate - Cancer

Standardised Incidence Rate - Lung Cancer

Standardised Death Rate - Cancer (U75)

Standardised Death Rate - Lung Cancer

Cancer Incidence Rate

5% Higher in 2006-12 than in 2002-08

Inequality Gaps

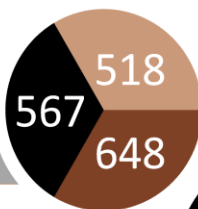
25%

Most-Least Deprived

Most Deprived-NI

14%

Cases per 100,000 population



Cancer Death Rate (U75)

5% Lower in 2006-12 than in 2002-08

Inequality Gaps

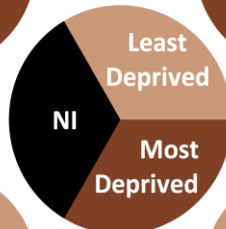
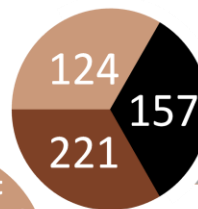
78%

Most-Least Deprived

Most Deprived-NI

41%

Deaths per 100,000 population



Lung Cancer Incidence Rate

Cases per 100,000 population

Inequality Gaps

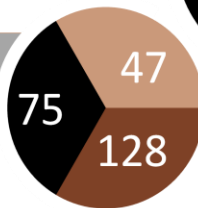
172%

Most-Least Deprived

Most Deprived-NI

71%

3% Higher in 2006-12 than in 2002-08



Lung Cancer Death Rate

Deaths per 100,000 population

Inequality Gaps

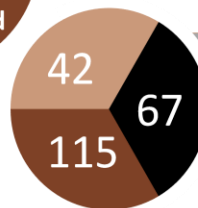
175%

Most-Least Deprived

Most Deprived-NI

73%

Constant Between 2006-12 and 2002-08



## 7. Cancer

*Cancer is one of the main causes of death in Northern Ireland, and the most common among those under 75 years of age. On average, one in four people in Northern Ireland will develop cancer by the age of 75 years. More than a quarter (28%) of all deaths in Northern Ireland are attributable to cancer, of which half occur in those aged under 75 years. One of the most common forms of cancer is lung cancer, which is responsible for more deaths than any other cancer type.*

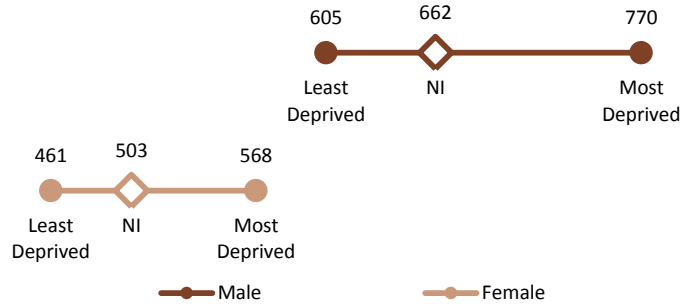
*Due to medical advances, cancer survival rates have increased markedly, with five year survival rates in NI at an all time high. Several screening processes are in place in Northern Ireland to increase early detection, which can increase the chances of full recovery from cancer.*

## 7.1 Standardised Incidence Rate - Cancer

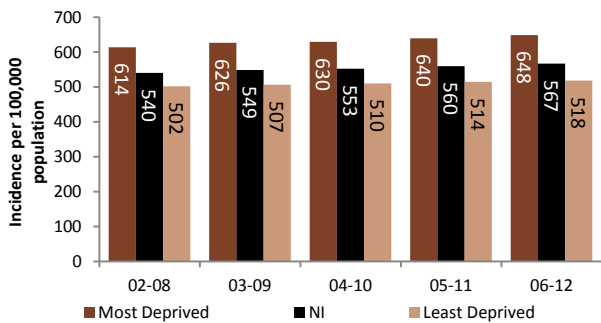
### Standardised Incidence Rate - Cancer by Gender & Deprivation, 2006-12

The cancer incidence rate among males in 2006-12 (662 per 100,000 population) was a third higher than for females (503 cases per 100,000 population).

Males in the most deprived areas (770 cases per 100,000 population) had an incidence rate two-thirds higher than females in the least deprived areas (461 cases per 100,000 population). In addition, the incidence rate for males in the least deprived areas was higher than that for females in the most deprived areas.

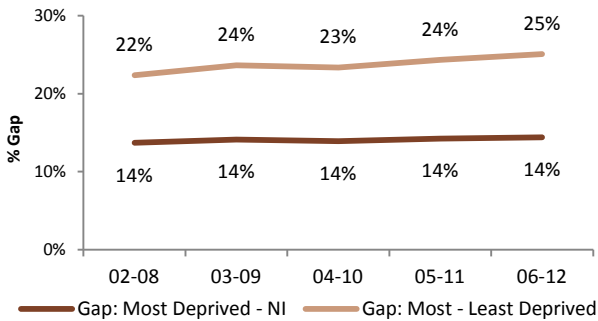


### Standardised Incidence Rate - Cancer: Deprivation Time Series



There were 567 newly diagnosed cases of cancer per 100,000 population in 2006-12, 5% higher than that in 2002-08.

The rate in the most deprived areas increased similarly over the same period, to stand at 648 cases per 100,000 population in 2006-12, with the gap between the most deprived areas and NI remaining at 14%.

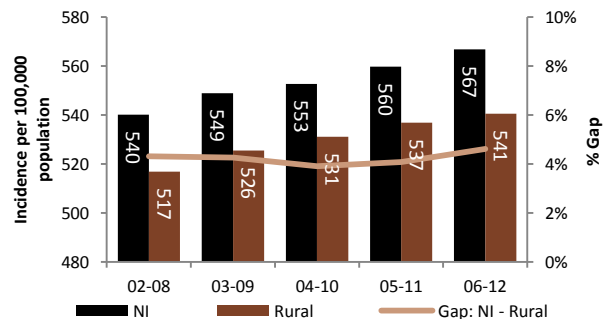


During this time, the rate in the least deprived areas increased by 3% to stand at 518 cases per 100,000 population. This led to a slight widening of the inequality gap between the most and least deprived areas, from 22% in 2002-08 to 25% in 2006-12.

### Standardised Incidence Rate - Cancer: Rurality Time Series

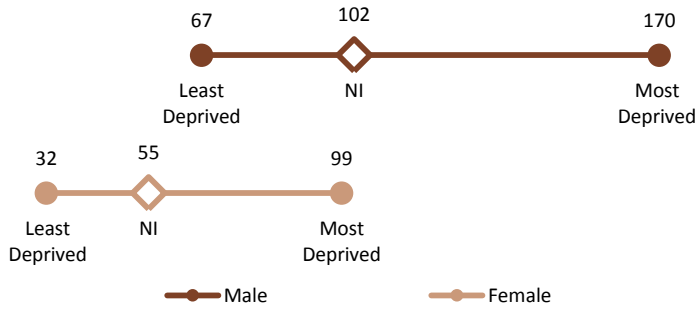
In rural areas the cancer incidence rate was 541 cases per 100,000 population in 2006-12. This was a 5% increase on the 517 cases per 100,000 population in 2006-12.

The gap showed little change over the period.



## 7.2 Standardised Incidence Rate – Lung Cancer

### Standardised Incidence Rate – Lung Cancer by Gender & Deprivation, 2006-12



The lung cancer incidence rate among males was 102 cases per 100,000 in 2006-12, almost double that for females (55 cases per 100,000 population).

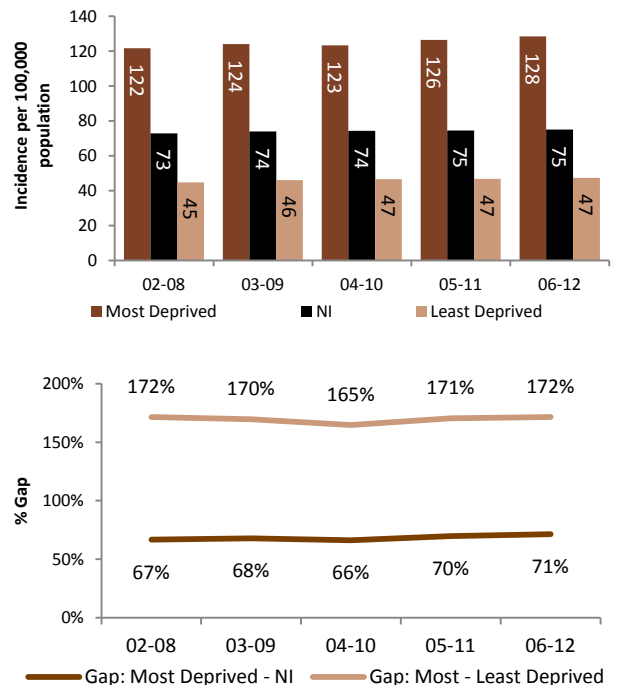
Males in the most deprived areas (170 cases per 100,000 population) had an incidence rate over five times that for females in the least deprived areas (32 cases per 100,000 population).

### Standardised Incidence Rate – Lung Cancer: Deprivation Time Series

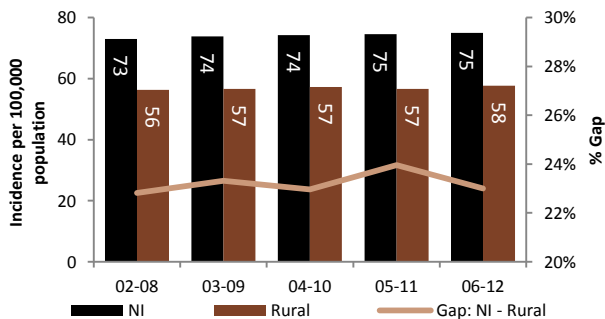
Lung cancer incidence rates increased by 3% from 2002-08 to stand at 75 cases per 100,000 population in 2006-12.

Over the same period, the most deprived areas showed an increase of 6%, from 122 to 128 cases per 100,000 population. This led to the inequality gap between the most deprived areas and NI increasing from 67% in 2002-08 to 71% in 2006-12.

The least deprived areas saw a similar increase to that in the most deprived areas (6%) to stand at 47 cases per 100,000 population in 2006-12, which meant that the most-least deprived inequality gap remained at 172%.



### Standardised Incidence Rate – Lung Cancer: Rurality Time Series



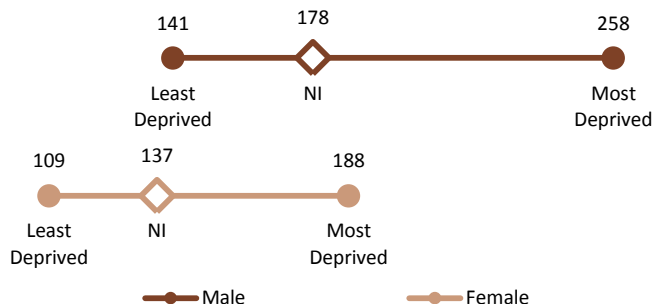
There was little change in the lung cancer rate in rural areas across the period. Similarly, the rurality gap was also fairly constant remaining at around a quarter lower in rural areas than regionally.

### 7.3 Standardised Death Rate (SDR) – Cancer (U75)

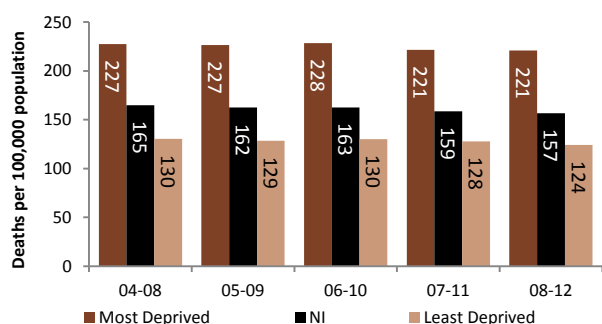
#### SDR - Cancer by Gender & Deprivation, 2008-12

The standardised death rate due to cancer for males under 75 years (178 deaths per 100,000 population) was a third higher than that for females (137 deaths per 100,000 population).

The death rate for males in the most deprived areas (258 deaths per 100,000 population) was more than double that for females in the least deprived areas (109 deaths per 100,000 population).

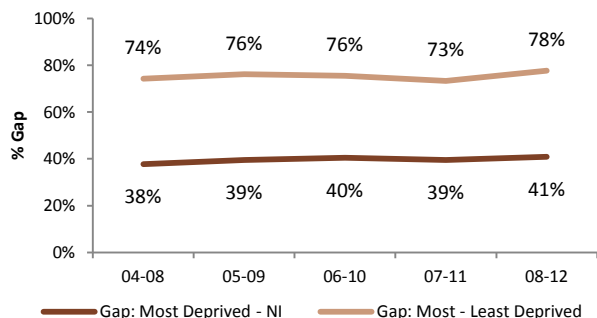


#### SDR - Cancer: Deprivation Time Series



The cancer death rate for those below 75 years of age was 157 deaths per 100,000 population in 2008-12, 5% lower than in 2004-08 (165 deaths per 100,000 population).

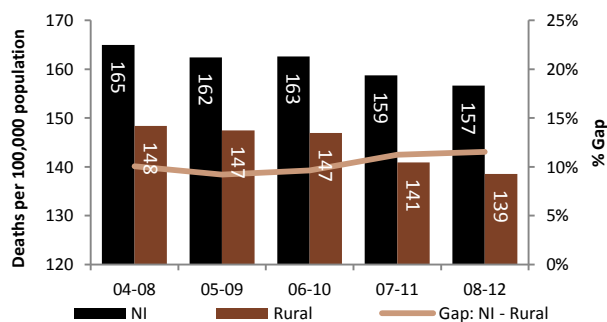
The rate in the least deprived areas also decreased by 5%, while the rate in the most deprived areas saw a smaller decrease of 3%. Subsequently, the most-least deprived inequality gap widened from 74% in 2004-08 to 78% in 2008-12 and the most deprived-NI gap widened slightly to 41% in 2008-12.



#### SDR - Cancer: Rurality Time Series

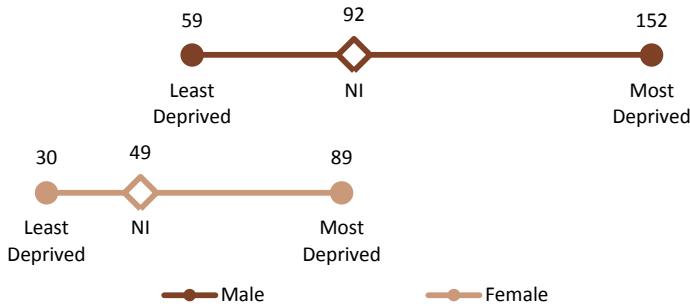
Since 2004-08, cancer death rates in rural areas have dropped by 7% to stand at 139 deaths per 100,000 population in 2008-12.

The gap between cancer mortality in rural areas and NI as a whole remained similar across the period, and stood at 12% in 2008-12.



## 7.4 Standardised Death Rate (SDR) – Lung Cancer

### SDR – Lung Cancer by Gender & Deprivation, 2008-12



In 2006-12, the standardised death rate due to lung cancer (92 deaths per 100,000 population) was almost double that for females (49 deaths per 100,000 population).

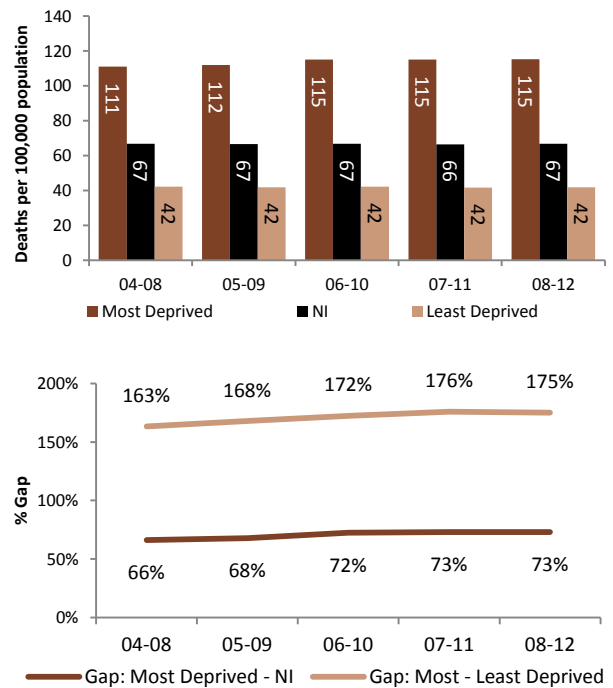
The mortality rate among males in the most deprived areas was over five times that for females in the least deprived areas.

### SDR – Lung Cancer: Deprivation Time Series

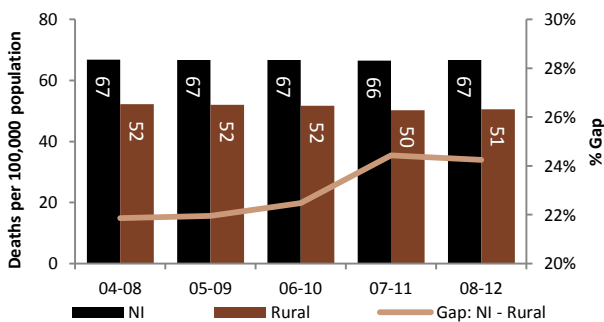
Lung cancer rates remained constant between 2004-08 and 2008-12 in both the least deprived areas (42 deaths per 100,000 population) and NI (67 deaths per 100,000 population).

Over this period, lung cancer mortality in the most deprived areas rose by 4%, from 111 deaths per 100,000 population to 115 deaths per 100,000 population.

In 2008-12, the mortality rate in the most deprived areas was 73% higher than for NI, a wider gap than that in 2004-08 (66%), and 175% higher than in the least deprived areas (163% in 2004-08).



### SDR – Lung Cancer: Rurality Time Series



Lung cancer mortality in rural areas stood at 51 deaths per 100,000 population in 2008-12, a similar rate to previous years and almost a quarter lower than the regional rate.

# Alcohol, Smoking & Drugs

SAR Alcohol

SDR Alcohol

SDR Smoking

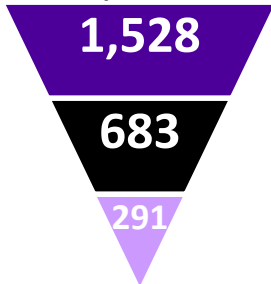
SAR Drugs

SDR Drugs

Deaths due to Drug Misuse

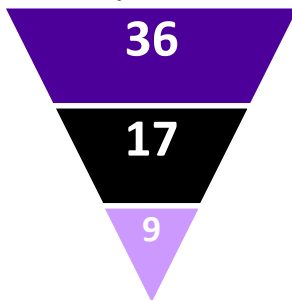


Admissions per 100,000 Population



SAR Alcohol in **Most Deprived** areas more than **five times** the rate in **Least Deprived** areas

Deaths per 100,000 Population

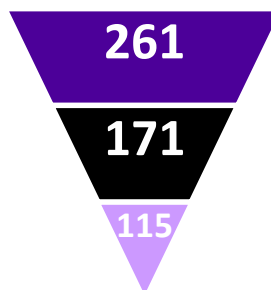


SDR Alcohol in **Most Deprived** areas **four times** the rate in **Least Deprived** areas



SDR Smoking in **Most Deprived** areas more than **Double** the rate in **Least Deprived** areas

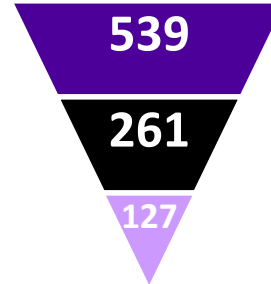
Deaths per 100,000 Population



SDR Smoking in **Most Deprived** **53% higher** than NI

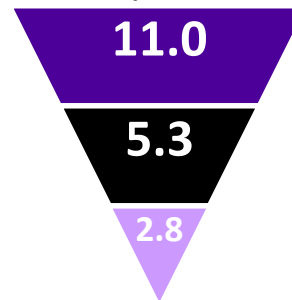


Admissions per 100,000 Population



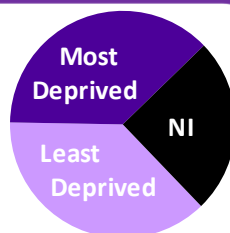
SAR Drugs in **Most Deprived** areas more than **four times** the rate in **Least Deprived** areas

Deaths per 100,000 Population



SDR Drugs in **Most Deprived** areas almost **four times** the rate in **Least Deprived** areas

Key



## 8. Alcohol, Smoking & Drugs

*Tackling alcohol and drug related harm and misuse is one of the Government's key public health priorities, which the DHSSPS has actively tackled through its New Strategic Direction for Alcohol & Drugs (NSD). Alcohol and drug related admissions give a measure of the amount of harm to physical and mental health that misuse is causing. In addition to the negative impact alcohol and drug misuse on physical and mental health, there is also evidence of its effect on wider outcomes such as employment, crime and the family unit.*

*Excessive consumption of alcohol and misuse of drugs are major preventable causes of premature mortality and there is therefore widespread policy, professional & public interest in the prevalence of alcohol and drug related deaths. Figures on alcohol and drug related deaths are used to monitor & develop policies to reduce harmful use and protect public health.*

*Tobacco is also a significant contributing factor to premature death and to a range of disease including deaths from lung cancer, ischemic heart disease, chronic obstructive lung disease, and cerebrovascular disease, and digestive diseases. Smoking is the single greatest cause of preventable illness and premature death in Northern Ireland killing around 2,300 people each year. The NI prevalence for cigarette smoking was 22% in 2013/14, 2% lower than the rate in 2010/11 and a reduction from 32% in 1990/91. As preventing premature deaths is a major public health goal, reducing smoking prevalence remains a high priority.*

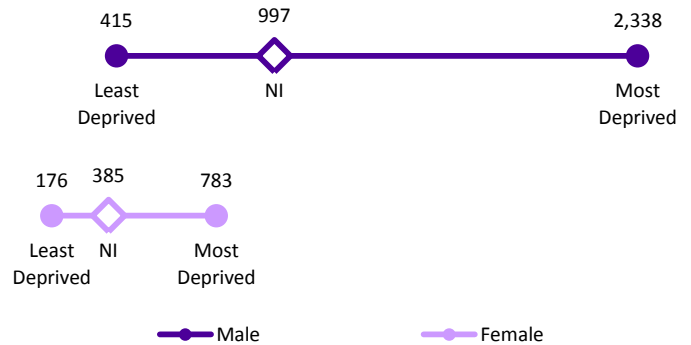


## 8.1 Standardised Admission Rate (SAR) - Alcohol

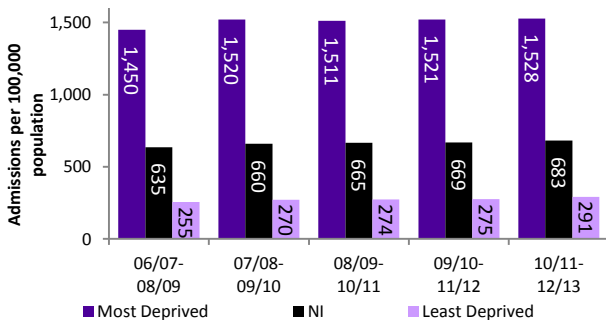
### SAR - Alcohol by Gender & Deprivation, 2010/11-2012/13

In 2010/11-2012/13, the standardised admission rate due to alcohol related conditions was over one and a half times higher for males (997 admissions per 100,000 population) than for females (385 admissions per 100,000 population).

The large deprivation gap observed resulted mainly from the high rate amongst males in the most deprived areas (2,338 admissions per 100,000 population) which was more than five times the rate for males within the least deprived areas (415 admissions per 100,000 population).

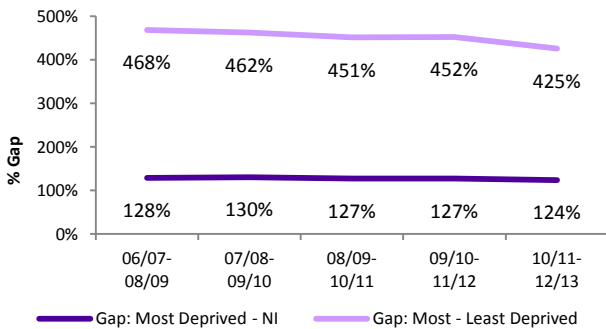


### SAR - Alcohol: Deprivation Time Series



Alcohol related admission rates increased regionally by 8% over the last 5 years, from 635 to 683 admissions per 100,000 population.

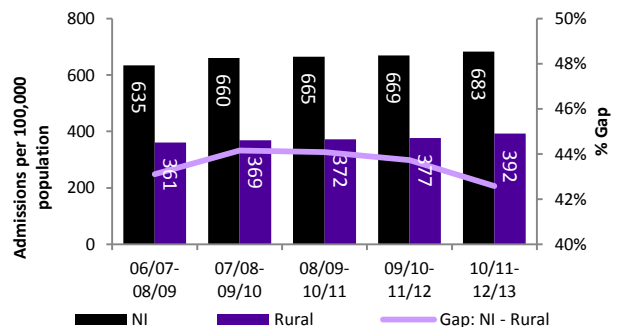
During this period, rates increased by over 5% within the most deprived areas and stood at 1,528 admissions per 100,000 population, whereas rates increased by 14% within the least deprived areas, from 255 to 291 admissions per 100,000 population in 2010/11-2012/13.



This resulted in a decrease in the most-least deprivation gap from 468% in 2006/07-2008/09 to 425% in 2010/11-2012/13, while the gap between the most deprived areas and the wider region remained similar and stood at 124% in 2010/11-2012/13.

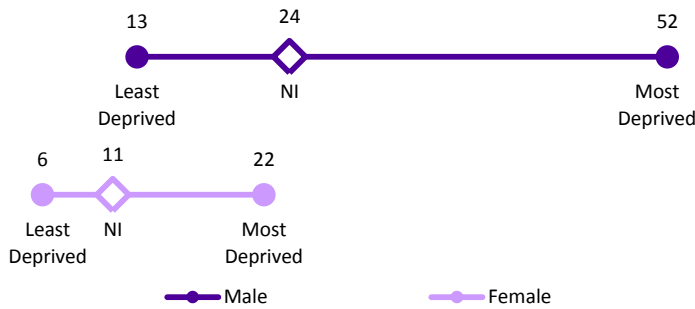
### SAR - Alcohol: Rurality Time Series

Admission rates due to alcohol related conditions for those residing in rural areas increased by more than 8% over the period, from 361 admissions per 100,000 population in 2006/07-08/09 to 392 admissions per 100,000 population in 2010/11-12/13. With a similar increase observed regionally, the rural gap remained similar, and stood at 43% in 2010/11-12/13.



## 8.2 Standardised Death Rate (SDR) - Alcohol

### SDR - Alcohol by Gender & Deprivation, 2008-12



In 2008-12, alcohol related mortality among males (24 deaths per 100,000 population) was more than double that for females (11 deaths per 100,000 population).

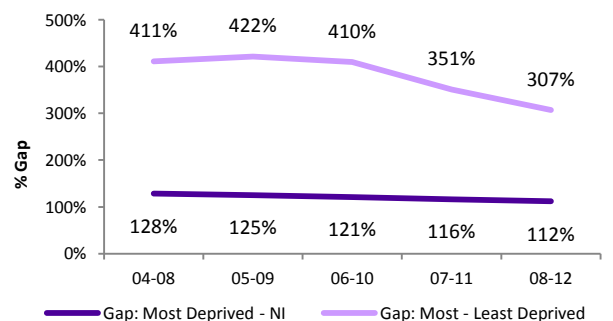
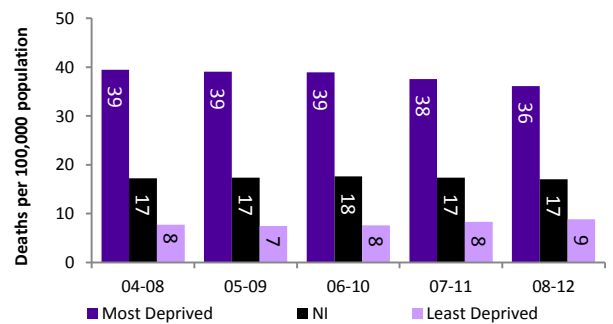
The standardised death rate due to alcohol was highest amongst most deprived males (52 deaths per 100,000 population) which was four times the rate for males in the least deprived areas and over eight times the rate for females within the least deprived areas.

### SDR - Alcohol: Deprivation Time Series

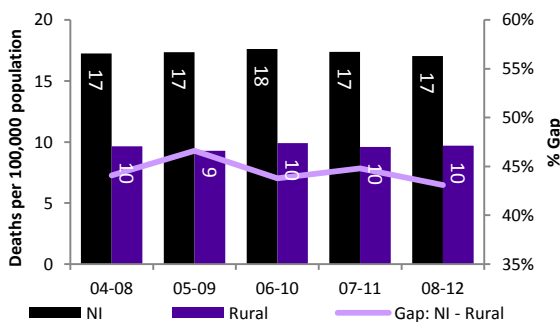
Alcohol related death rates remained similar over the period, and stood at 17 deaths per 100,000 population in 2008-12.

During this time, the death rate for alcohol related conditions decreased by 8% in the most deprived areas, from 39 to 36 deaths per 100,000 population, resulting in a narrowing of the most deprived-NI inequality gap from 128% to 112% in 2008-12.

Alcohol related mortality in the least deprived areas increased between 2004-08 and 2008-12, which meant that the most-least deprived inequality gap decreased sharply, from 411% to 307%.



### SDR - Alcohol: Rurality Time Series



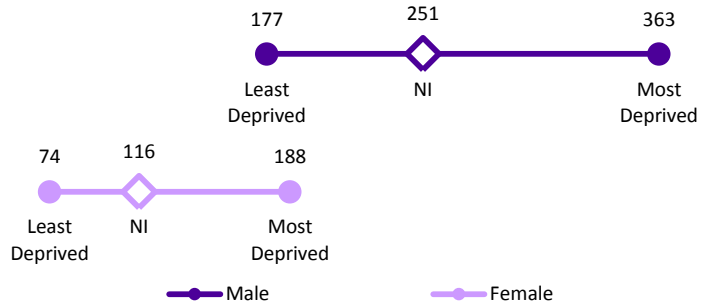
Mortality rates due to alcohol related conditions for those residing in rural areas were consistently more than two-fifths lower than the regional rate over the past five years. During this time both rural and regional rates remained unchanged and stood at 10 and 17 deaths per 100,000 population respectively.

### 8.3 Standardised Death Rate (SDR) – Smoking

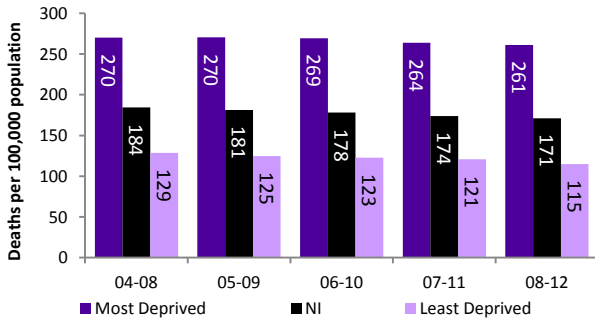
#### SDR - Smoking by Gender & Deprivation, 2008-12

In 2008-12, smoking related mortality among males (251 deaths per 100,000 population) was more than double that for females (116 deaths per 100,000 population).

The standardised death rate due to smoking was highest amongst males in the most deprived areas (363 deaths per 100,000 population) which was double the rate for males in the least deprived areas and almost five times the rate for females within the least deprived areas.

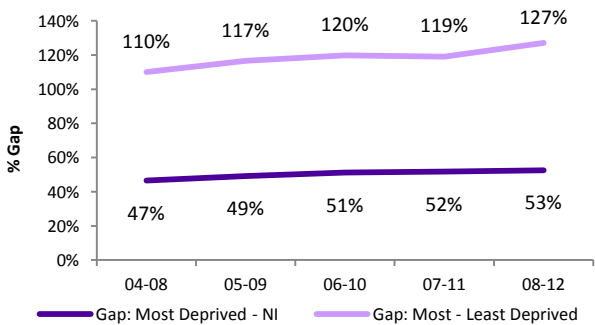


#### SDR - Smoking: Deprivation Time Series



Although smoking-related death rates decreased across all areas over the period, the decrease was much lower in the most deprived areas which led to increases in both the most deprived-NI and most-least deprived inequality gaps.

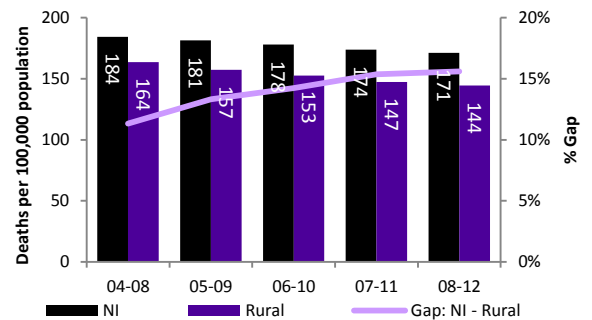
In 2008-12, the standardised death rate due to smoking related causes in the most deprived areas was 53% higher than the overall regional rate, and 127% higher than in the least deprived areas.



Similar deprivation gaps are evident with smoking prevalence in NI; for example, in 2013/14 the prevalence for cigarette smoking in the most deprived areas (34%) was almost triple the rate within the least deprived areas (12%) and more than 50% higher than the regional rate (22%).

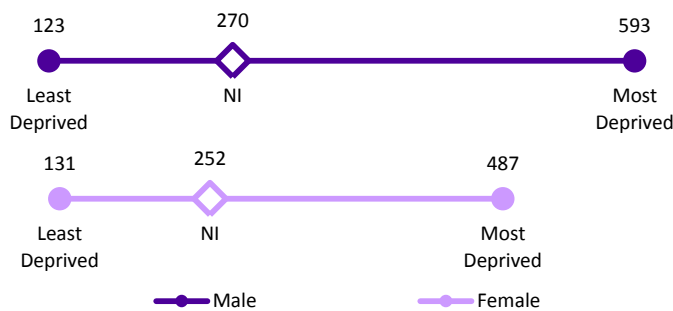
#### SDR - Smoking: Rurality Time Series

Mortality rates due to smoking decreased within rural areas over the period at a faster rate than observed regionally. This resulted in an increase in the rurality gap from 11% to 16%.



## 8.4 Standardised Admission Rate (SAR) – Drugs related mental health & behavioural disorders

### SAR - Drugs related mental health & behavioural disorders by Gender & Deprivation, 2010/11-2012/13



In 2010/11-2012/13, the standardised rate of drug related admissions to hospital within the acute programme of care was higher among males than females, both regionally and within the most deprived areas. Within the least deprived areas however, the rate was slightly higher for females (131 admissions per 100,000 population) than for males (123 admissions per 100,000 population).

The admission rate among males in the most deprived areas (593 admissions per 100,000 population) was almost five times higher than that in the least deprived areas.

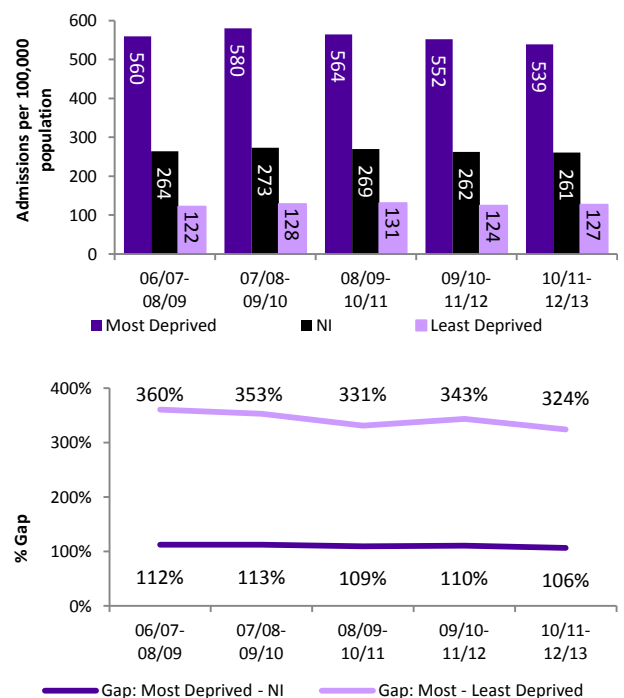
### SAR - Drugs related mental health & behavioural disorders: Deprivation Time Series

The drug related admission rate has remained broadly constant over the period, standing at 261 admissions per 100,000 population in 2010/11-2012/13.

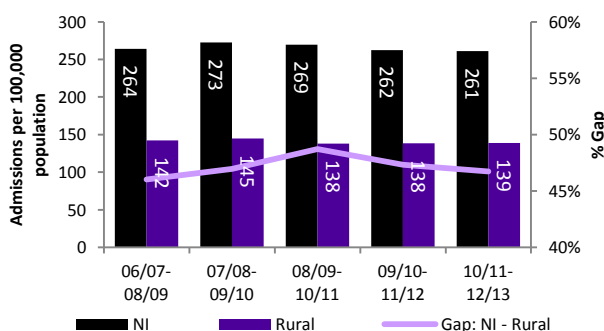
The standardised rate of drug related admissions in the most deprived areas decreased slightly which meant that the most deprived-NI inequality gap narrowed slightly and stood at 106% in 2010/11-2012/13.

In the least deprived areas, the admission rate fell by 5% between 2006/07-2008/09 (560 admissions per 100,000 population) and 2010/11-2012/13 (539 admissions per 100,000 population).

The most-least deprived inequality gap fell by 10% over the period. However, in 2010/11-2012/13, the most deprived areas had an admission rate over three times that in the least deprived areas.



### SAR - Drugs related mental health & behavioural disorders: Rurality Time Series



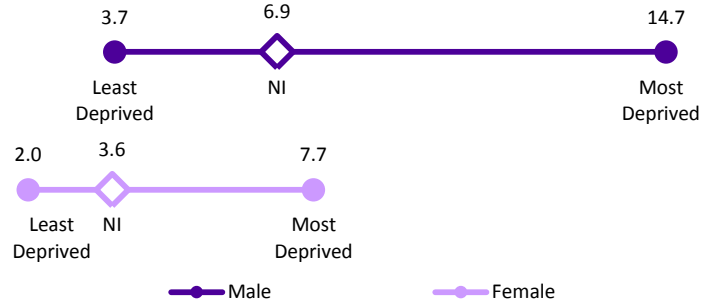
The admission rate due to drug related conditions for those residing in rural areas (139 admissions per 100,000 population) remained approximately half that of the wider region (261 admissions per 100,000 population) across the period.

## 8.5 Standardised Death Rate (SDR) - Drugs

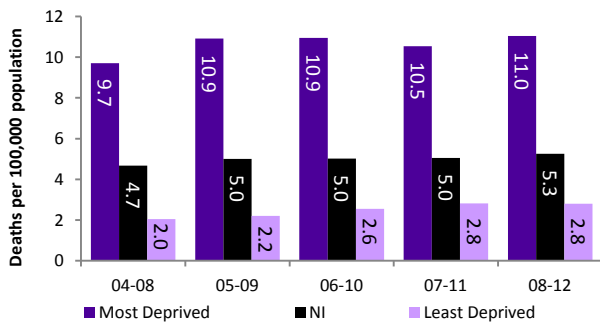
### SDR - Drugs by Gender & Deprivation, 2008-12

In 2008-12, the drug related death rate among males (6.9 deaths per 100,000 population) was almost double that of females (3.6 deaths per 100,000 population).

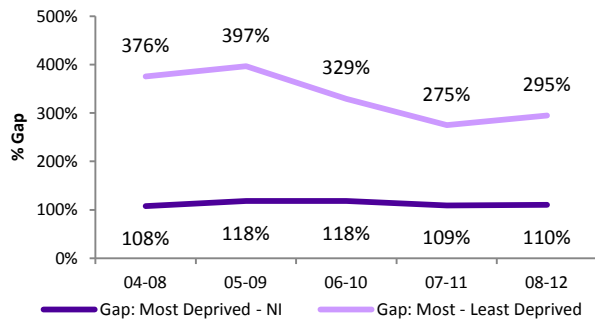
Drug related mortality for males in the most deprived areas (14.7 deaths per 100,000 population) was more than seven times higher than for females residing in the least deprived areas (2.0 deaths per 100,000 population).



### SDR - Drugs: Deprivation Time Series



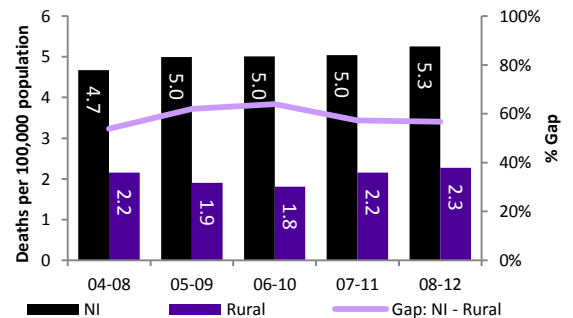
The regional drug related death rate increased by 13% between 2004-08 and 2008-12, from 4.7 to 5.3 deaths per 100,000 population. A similar increase occurred in the most deprived areas whereas the rate increased by two-fifths in the least deprived areas from 2.0 to 2.8 deaths per 100,000 population.



Drug related mortality in the most deprived areas was consistently double the regional rate. However, with the increased rate within the least deprived areas, the most-least deprived gap decreased from being almost four times higher to almost three times higher.

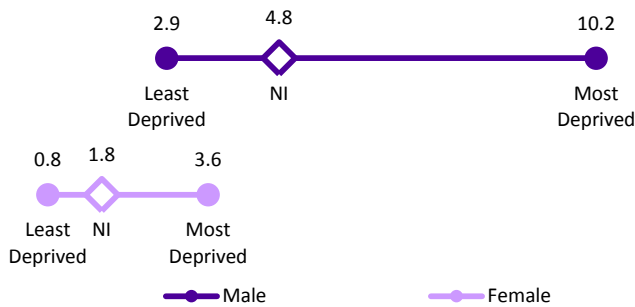
### SDR - Drugs: Rurality Time Series

In contrast to the increase in the region overall, the drug related death rate in rural areas was fairly similar in 2008-12 (2.3 deaths per 100,000 population) to that in 2004-08. This caused the rural gap to increase slightly, from 53% to 57%.



## 8.4 Standardised Death Rate (SDR) – Drug Misuse<sup>14</sup>

### SDR – Drug Misuse by Gender & Deprivation, 2008-12



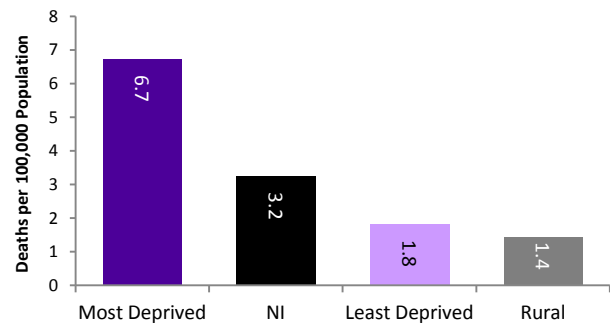
In 2008-12, the male death rate due to drug misuse<sup>15</sup> (4.8 deaths per 100,000 population) was more than two and a half times that of females (1.8 deaths per 100,000 population).

Drug misuse related mortality for males in the most deprived areas (10.2 deaths per 100,000 population) was almost thirteen times that for females residing in the least deprived areas (0.8 deaths per 100,000 population).

### SDR – Drug Misuse by Deprivation & Rurality

Overall, the mortality rate due to drug misuse stood at 6.7 deaths per 100,000 population in the most deprived areas, more than double the regional rate (3.2 deaths per 100,000 population) and more than three and a half times the rate within the least deprived areas (1.8 deaths per 100,000 population).

The rural gap in the standardised death rate due to drug misuse stood at 56% in 2008-12, while the rate in rural areas was 1.4 deaths per 100,000 population.



<sup>14</sup> Readers should note that as this is a new indicator within the HSCIMS, a time series is not yet available.

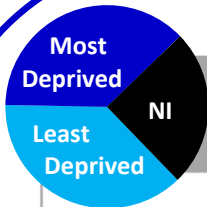
<sup>15</sup> Drugs controlled under the Misuse of Drugs Act 1971

# Mental Health

Standardised Admission Rate – Self Harm

Crude Suicide Rate

Standardised Prevalence Rate – Mood & Anxiety



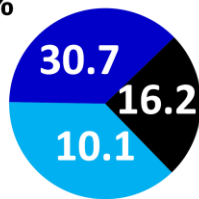
## Crude Suicide Rate Deaths per 100,000 population

**Most deprived**  
– NI gap

**90%**

**Most – Least**  
deprived gap

**204%**

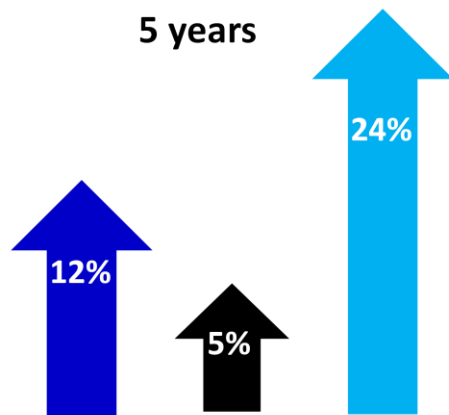


**Most deprived**

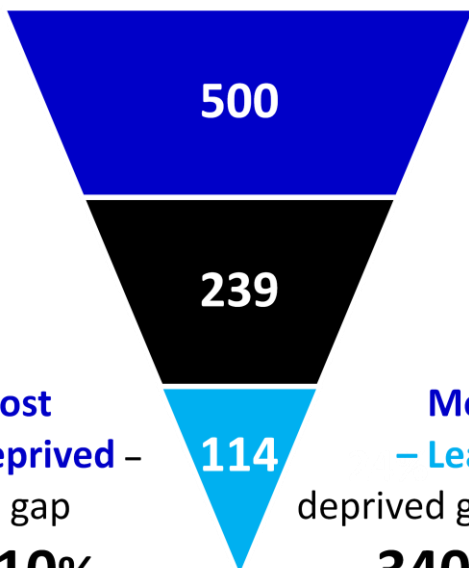
**3X** higher than

**Least deprived**

**Change in rate over the last 5 years**



## SAR – Self Harm Admissions per 100,000 population



**Most deprived** –  
NI gap

**110%**

**Most – Least**  
deprived gap

**340%**

## Standardised Prescription Rate Mood & Anxiety

**One in Five** in NI suffer  
from a **Mood & Anxiety** disorder



**Most deprived** areas  
were **37%** higher

## 9. Mental Health

*Mental Health problems can include a range of disorders, of varying severity, and may affect anyone in the population. Mood and anxiety disorders may encompass a range of conditions such as anxiety, depression, self-harm and thoughts of suicide. The extent to which these problems are prevalent in the population can be estimated by examining the population that were prescribed drugs for such conditions. However, not all those suffering from a mood and anxiety disorder will seek treatment.*

*Survey instruments such as the General Health Questionnaire 12 (GHQ12) and the Warwick-Edinburgh Mental Wellbeing Scale asked within the Northern Ireland Health Survey, are also used to assess mental wellbeing of groups of people as well as the population over time.*

*Self-harm is a key indicator of mental health issues and can be a pre-warning for future suicide attempts, with higher levels of hospital admission for self-harm having occurred in the most deprived areas. The DHSSPS is committed to improving mental health across NI, with the reduction of the suicide rate remaining a priority for government<sup>16 17</sup>.*

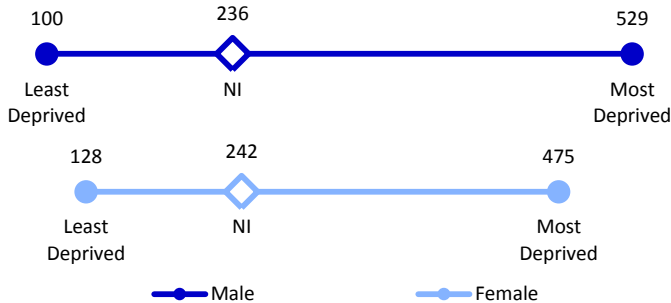
<sup>16</sup> Protect Life-A Shared Vision' ([www.dhsspsni.gov.uk/suicide\\_strategy.pdf](http://www.dhsspsni.gov.uk/suicide_strategy.pdf))

<sup>17</sup> Making Life Better – A Whole System Strategic Framework for Public Health 2013-2023' (<http://www.dhsspsni.gov.uk/mlb-strategic-framework-2013-2023.pdf>)



### 9.1 Standardised Admission Rate (SAR) – Self-Harm

#### SAR – Self-Harm by Gender & Deprivation, 2008/09-2012/13



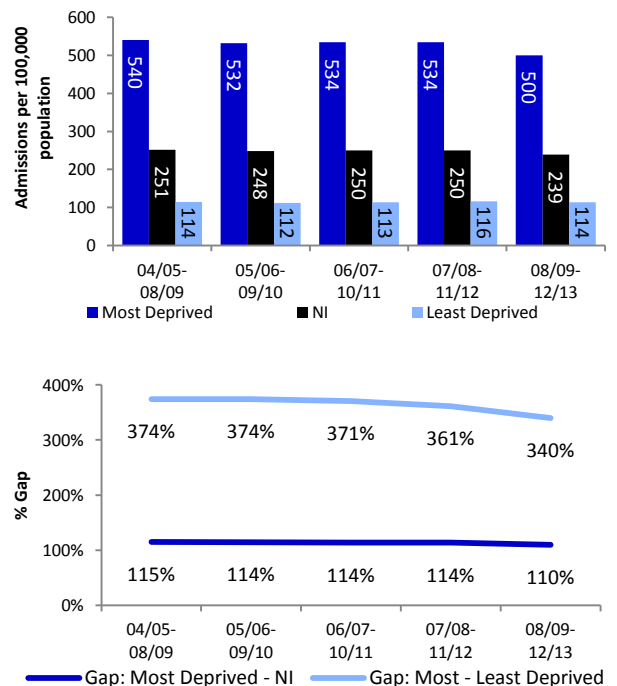
In 2008/09-2012/13, the standardised admission rate due to self-harm was similar for males and females. There has been a steady narrowing in the gender gap since 2004/05-2008/09 when the female admissions rate was 14% higher than that of males.

Males in the most deprived areas had the highest admission rate (529 admissions per 100,000 population), more than five times that of males in the least deprived areas where the lowest rate was observed (100 admissions per 100,000 population).

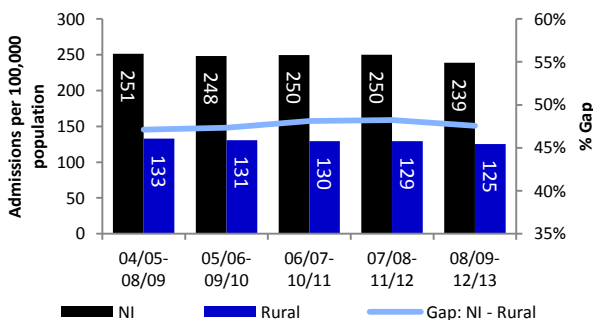
#### SAR – Self-Harm: Deprivation Time Series

Between 2004/05-2008/09 and 2008/09-2012/13, self-harm admission rates decreased in NI and its most deprived areas by 5% and 7% respectively, which meant that the gap between them remained similar at 110% in 2008/09-2012/13.

Over the period, rates in the least deprived areas remained fairly constant and stood at 114 admissions per 100,000 population in 2008/09-2012/13. Despite a narrowing of the most-least deprived gap since 2006/07-2008-09, it still remains large, with the self-harm admission rate in most deprived areas almost four and a half times that of the least deprived.



#### SAR – Self-Harm: Rurality Time Series



Self-harm admissions in rural areas dropped by 6% since 2004/05-2008/09 to stand at 125 admissions per 100,000 population in 2008/09-2012/13.

With a similar decrease observed regionally, the inequality gap remained fairly constant at 48% in 2008/09-2012/13.

## 9.2 Crude Suicide Rate

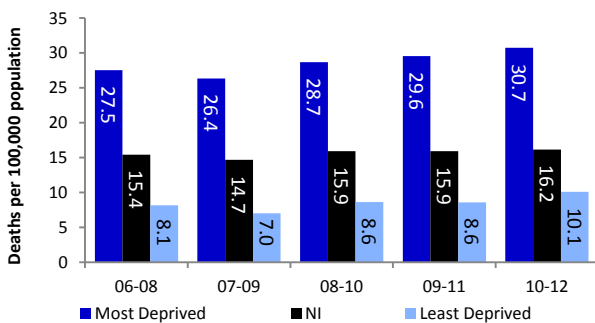
### Crude Suicide Rate by Gender & Deprivation, 2010-12

In 2010-12 the crude suicide rate for males was notably higher than for females across all areas.

The suicide rate for males in the most deprived areas was 48.7 deaths per 100,000 population, eight times that of females in the least deprived areas (6.1 deaths per 100,000 population).

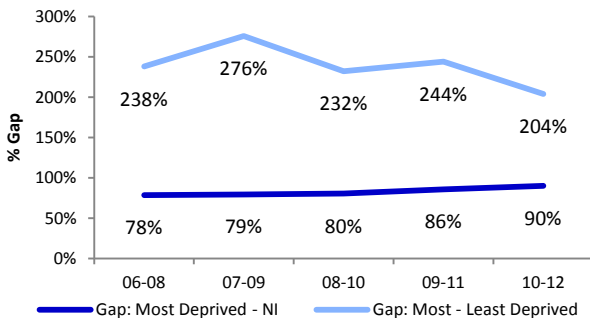


### Crude Suicide Rate: Deprivation Time Series



While the suicide rate for NI increased by 5% between 2006-08 and 2010-12, the most deprived areas experienced an increase of 12% from 27.5 deaths per 100,000 population, to 30.7 deaths per 100,000 population in 2010-12. This led to a widening of the most deprived – NI gap from 78% to 90%.

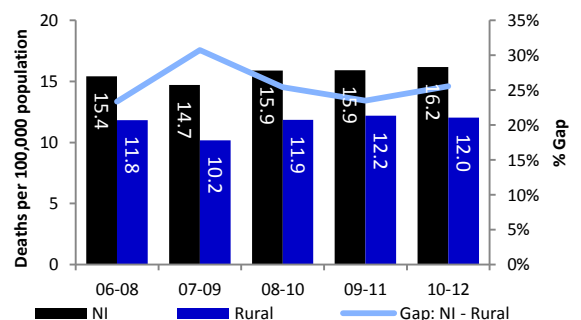
Over the same period, the least deprived areas increased by almost a quarter to 10.1 deaths per 100,000 population, but remained below the NI average. This led to a narrowing of the most-least deprived inequality gap over the period. Despite this narrowing, the gap remained large at 204% in 2010-12.



### Crude Suicide Rate: Rurality Time Series

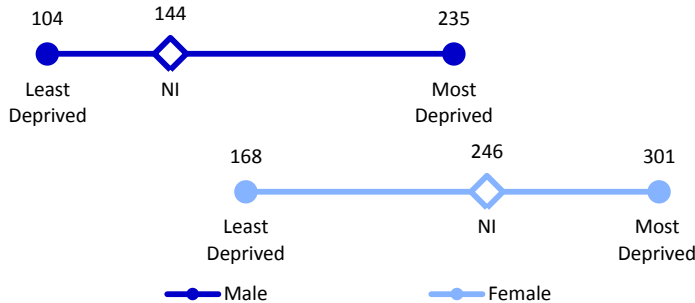
Despite a small fluctuation in 2007-09 the crude suicide rate in rural areas was fairly consistent over the period standing at 12.0 deaths per 100,000 population in 2010-12.

The NI – rural gap increased slightly over the period from 23% in 2006-08 to 26% in 2010-12.



### 9.3 Standardised Prescription Rate (SPR) – Mood & Anxiety

#### SPR – Mood & Anxiety by Gender & Deprivation, 2012



The female standardised prescription rate for mood and anxiety disorders in Northern Ireland was 246 persons prescribed per 1,000 population in 2012. This was higher than the rate observed in males in the most deprived areas (235 persons prescribed per 1,000 population), and almost three times higher than that of males in the least deprived areas.

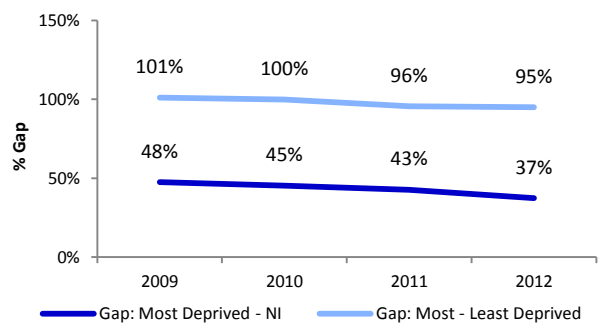
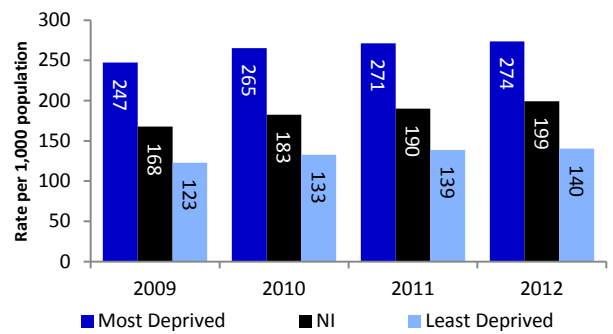
The higher rate among females than males is supported by the General Health Questionnaire – 12.

#### SPR – Mood & Anxiety: Deprivation Time Series

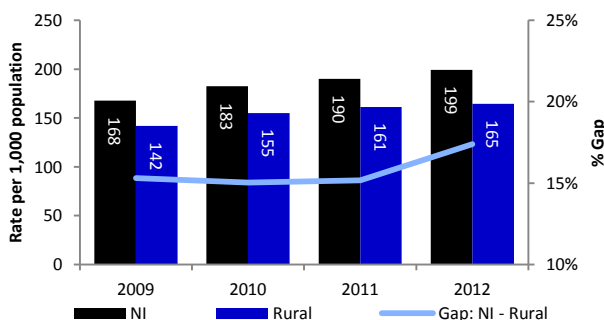
Prescription rates for mood and anxiety disorders increased between 2009 and 2012 regionally and within the most and least deprived areas.

The regional prescription rate increased by almost a fifth (19%), between 2009 (168 persons prescribed per 100,000 population) and 2012 (199 persons prescribed per 100,000 population). Both this and the increase seen in the least deprived areas (14%) were higher than that in the most deprived areas (11%) which lead to a narrowing of both inequality gaps.

Throughout the period, the most deprived areas continued to have the largest prevalence of mood and anxiety disorders (274 persons prescribed per 1,000 population), almost double that seen in the least deprived areas (140 persons prescribed per 1,000 population).



#### SPR – Mood & Anxiety: Rurality Time Series



Prevalence rates in rural areas saw an increase over the period of 16%, reaching 165 persons prescribed per 1,000 population by 2012.

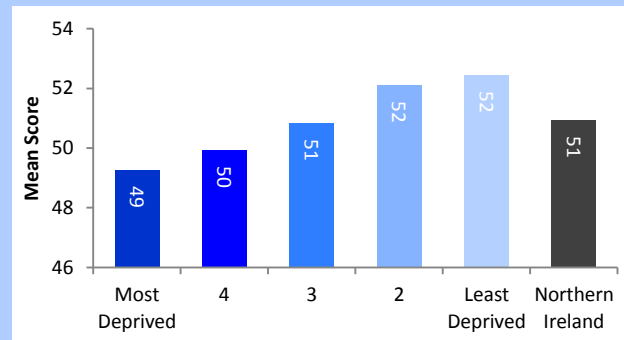
The NI-rural gap remained broadly similar across the period, and stood at 17% in 2012.

### Warwick-Edinburgh Mental Wellbeing Scale (WEMWS) 2013/14

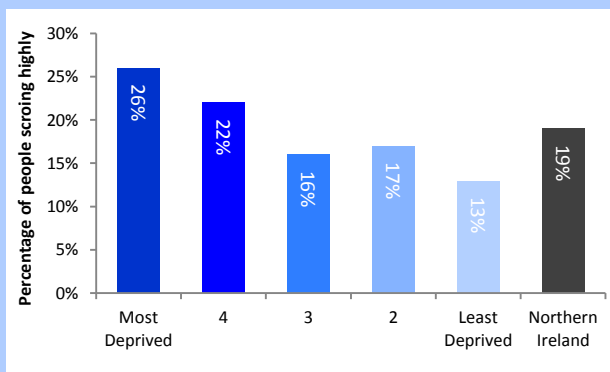
A higher mean score on the (WEMWS) indicates a higher level of mental wellbeing.

The NI mean score on the (WEMWS) was 51. A lower mean score was recorded within the most deprived areas (49) than in the least deprived areas (52).

This was similar to the position observed in 2010/11 and 2011/12.



### General Health Questionnaire 12 (GHQ12) 2013/14



A high score (four or more) on the GHQ12 may indicate the presence of a psychiatric disorder.

In 2013/14 one in five people (19%) in Northern Ireland scored highly on the GHQ12. In the most deprived areas one in four people (26%) scored highly, which was double that recorded in the least deprived areas (13%). These were broadly similar rates to those in 2010/11.

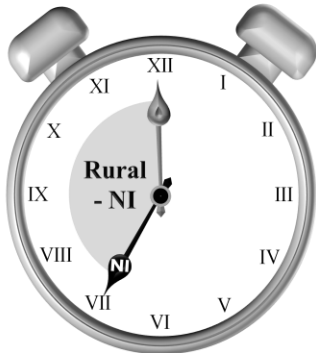
# Public Safety

Fire Response Times

Ambulance Response Times

Carbon Monoxide & Smoke Alarms

## Fire Response Times



Rural: 1:57  
mm:ss

Gap  
71%



LD: 05:40  
mm:ss

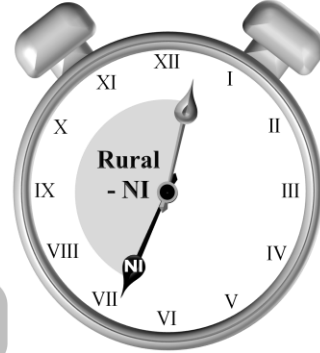
Gap  
19%



MD: 06:59  
mm:ss

Gap  
19%

## Ambulance Response Times



Rural: 12:26  
mm:ss

Gap  
83%



LD: 05:38  
mm:ss

Gap  
17%



MD: 07:18  
mm:ss

Gap  
23%

### Key

Northern  
Ireland



Rural



Most  
Deprived  
(MD)



Least  
Deprived  
(LD)



## 10. Public Safety

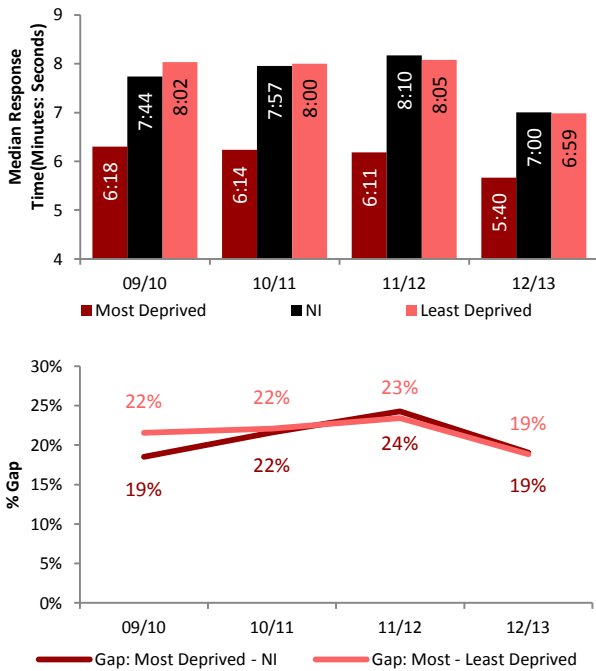
*The Northern Ireland Ambulance Service (NIAS) operates a single Northern Ireland wide ambulance trust with operational areas covering the region, with a fleet of 313 ambulances from 59 ambulance stations and deployment points throughout Northern Ireland. An effective ambulance service is vital to maintaining and improving the health and wellbeing of the population by preserving life, preventing deterioration and promoting recovery. NIAS response performance to Category A, potentially life-threatening 999 calls is subject to scrutiny against targets established by the Health Minister, through DHSSPSNI and the Health and Social Care Board (HSCB) while also giving due consideration and priority to a timely and appropriate response to the rest of the calls which are not life threatening.*

*DHSSPS is responsible for the development of policy and legislation for the monitoring of service delivery for the Northern Ireland Fire and Rescue Service (NIFRS). The NIFRS is required to be mobilised efficiently to emergencies, extinguishing fires while saving lives, protecting the environment and property and responding effectively to all emergency situations in Northern Ireland, including road traffic collisions, collapsed buildings and specialist rescues.*

*Analyses are provided of the median ambulance and fire response times by both level of deprivation and rurality.*

## 10.1 Fire Response Times

### Fire Response Times: Deprivation Time Series



Both the most and least deprived areas experienced a shorter median fire response time than the regional average, with the most deprived areas experiencing the shortest response times.

The median fire response time for NI overall decreased by 10% between 2009/10 and 2012/13, a similar decrease to that in the most deprived areas. Response times in the least deprived areas dropped by 13%, to an almost identical average response time to that seen regionally.

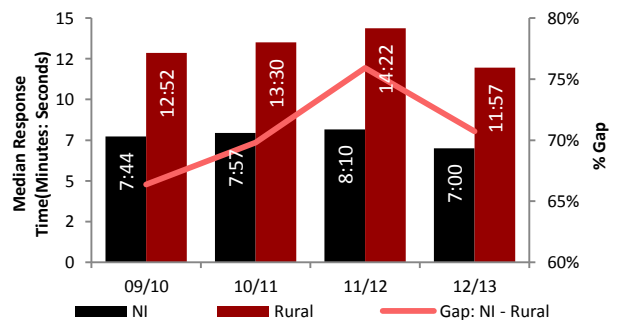
This led to the gap between the most deprived areas and Northern Ireland widening from 2009/10 to 2011/12 (23%), before narrowing to 19% in 2012/13.

The gap between the most and least deprived areas widened between 2009/10 and 2011/12, before narrowing to 19% in 2012/13.

### Fire Response Times: Rurality Time Series

The median fire response time in rural areas was 11 minutes 57 seconds in 2012/13, 71% longer than that for the region.

As this was a reduction of almost one minute (7%) since 2009/10, the rural-NI inequality gap has widened from 66% to 71% over the period.



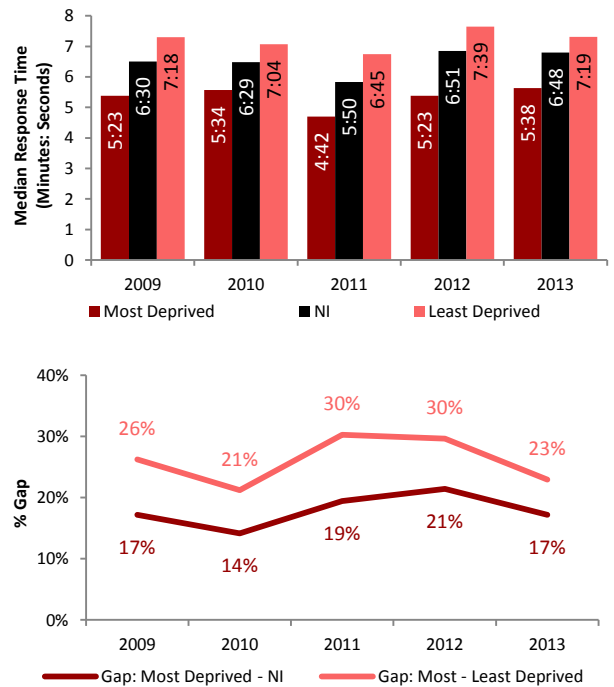
## 10.2 Ambulance Response Times<sup>18</sup>

### Ambulance Response Times: Deprivation Time Series

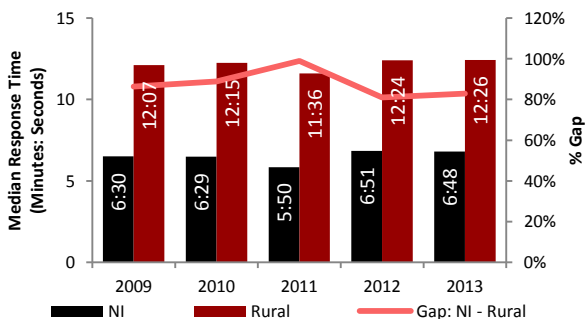
There has been an increase in the median regional ambulance response time of 5% over the observed timeframe. A similar increase was observed in the most deprived areas. However, despite some fluctuation, the response time in the least deprived areas was similar in 2013 (7 minutes 19 seconds) to that in 2009.

This has meant that the proportionate inequality gap between the most deprived areas and NI has remained steady at 17% lower in the most deprived areas.

The most-least deprived gap fluctuated over the period, though the gap in 2013 was broadly similar to that in 2009, with the median response time in the most deprived areas around a quarter lower than those in the most deprived areas.



### Ambulance Response Times: Rurality Time Series



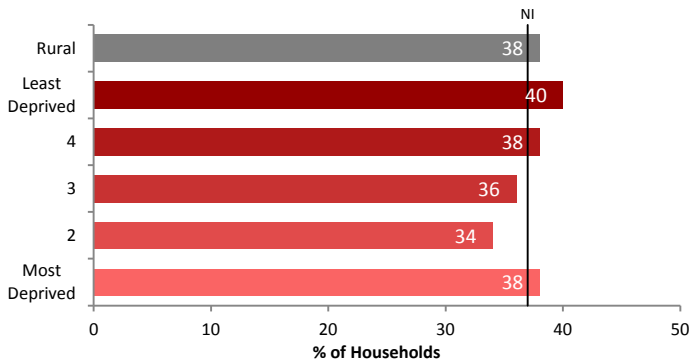
The median ambulance response time in rural areas showed a slight increase of 3% between 2009 and 2013, remaining around 83% higher than that regionally.

<sup>18</sup> Based on callouts from one month of the year (August).



### 10.3 Carbon Monoxide and Smoke Alarms

#### Carbon Monoxide Alarms by Rurality & Deprivation, 2013/14



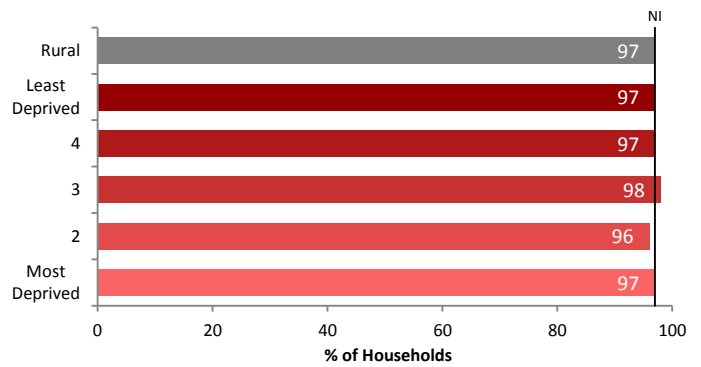
In 2013/14, almost two fifths of households surveyed in Northern Ireland had a carbon monoxide alarm. This was true for both the most (38%) and least (40%) deprived areas.

There was little difference between rural areas and the regional average.

#### Smoke Alarms by Rurality & Deprivation, 2013/14

In 2013/14, the vast majority of respondents' homes in NI had smoke alarms fitted (97%). There was little difference across all areas.

These rates showed little change since 2010/11.





# Pregnancy & Early Years

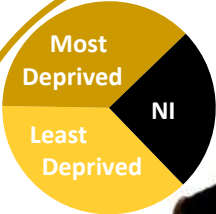
Infant Mortality Rate

Smoking During Pregnancy

Teenage Birth Rate

Low Birth Weight

Breastfeeding on Discharge



## Teenage Birth Rate

Births to Under 19's per 1,000 females (2012)

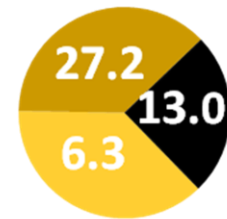
Inequality gaps....

Most deprived – NI

**332%**

Most-least deprived

**108%**



## Smoking During Pregnancy

% (2013)

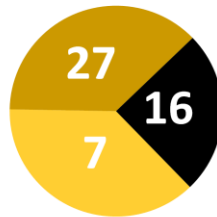
Inequality gaps....

Most deprived – NI

**74%**

Most-least deprived

**286%**

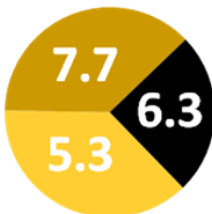


Low Birth Weight & Breastfeeding on discharge remained fairly similar over the last five years

Infant Mortality Rate almost no inequality gap

Low Birth Weight

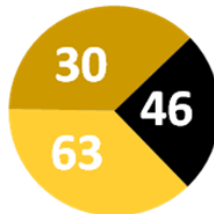
2009-13



% of babies less than 2,500g

Breastfeeding

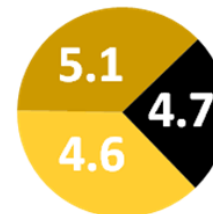
2013



% mothers Breastfeeding on discharge

Infant Mortality Rate

2008-12



Deaths per 1,000 live births

## 11. Pregnancy & Early Years

*Infant mortality is a key indicator recognised by the World Health Organisation (WHO) and is routinely used to measure the health and well-being of an area, providing an estimate of the availability of prenatal and primary health care. Similar to the rest of the UK and the European average, infant mortality in NI is relatively low comparable to the rate seen worldwide.*

*Breast milk is recommended by the WHO as the perfect food for the newborn<sup>19</sup> and protects babies from infections and diseases as well as providing other health benefits. With Northern Ireland's breastfeeding rates remaining the lowest among the UK countries<sup>20</sup>, an update to the Breastfeeding Strategy for Northern Ireland was set out in 2013 with the aim of protecting, promoting, supporting and normalising breastfeeding.*

*Smoking during pregnancy can increase the risk of complications in pregnancy, stillbirth, having a premature birth or a baby of low birth weight. Low birth weight babies are more susceptible to problems during and after labour, for example they are more prone to infection.*

*Babies born to teenage mothers are also more likely to have low birth weight, be born prematurely and have a greater risk of dying in infancy<sup>21</sup>. Teenage mothers are at a higher risk of developing pregnancy induced hypertension which can lead to preeclampsia, and typically do not achieve as a high an educational level as those who have not given birth.*

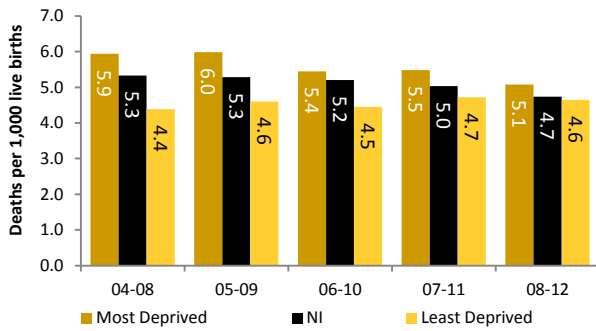
<sup>19</sup> World Health Organisation <http://www.who.int/topics/breastfeeding/en/>

<sup>20</sup> Infant feeding Survey-UK 2010 <http://www.hscic.gov.uk/catalogue/PUB08694>

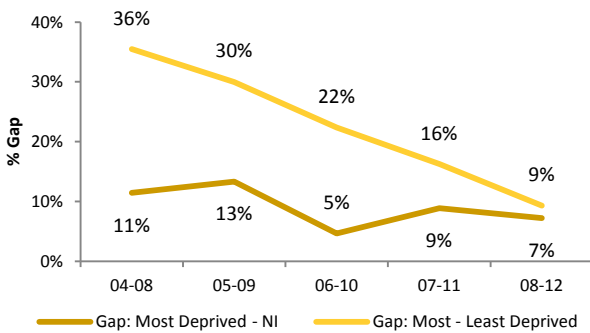
<sup>21</sup> The Equality Trust <http://www.equalitytrust.org.uk/research/teenage-births>

## 11.1 Infant Mortality Rate

### Infant Mortality Rate: Deprivation Time Series

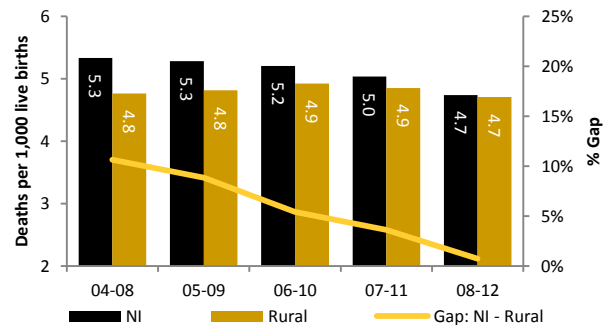


Since 2004-08 the infant mortality rate observed in NI has fallen slightly, standing at 4.7 deaths per 1,000 live births in 2008-12. The rate was almost identical to that in the least deprived areas (4.6 deaths per 1,000 live births). Within the most deprived areas the infant mortality rate fell from 5.9 deaths per 1,000 live births in 2004-08 to 5.1 deaths per 1,000 live births in 2008-12. This meant that the most-least deprived gap narrowed from 36% to 9%.



### Infant Mortality Rate: Rurality Time Series

The infant mortality rate in rural areas also remained fairly similar across the analysis period and stood at 4.7 deaths per 1,000 live births in 2008-12. The improvements in the regional rate meant that by the end of the period there was virtually no difference between it and the rural rate.



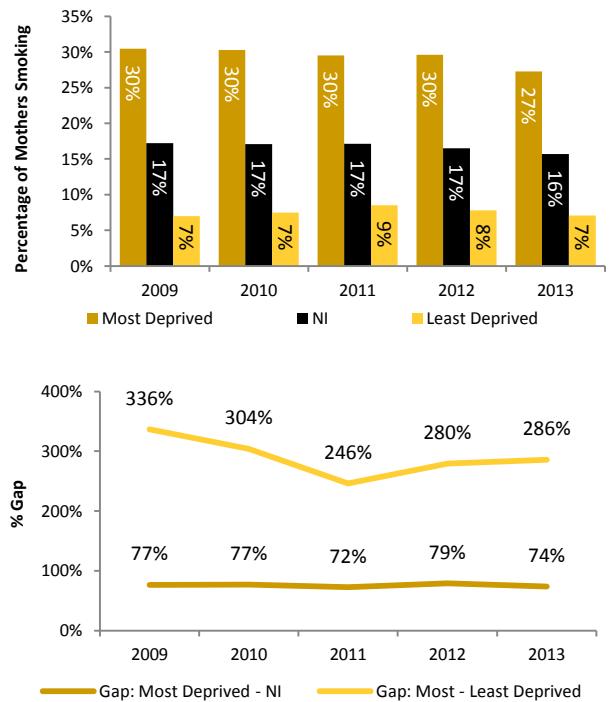
## 11.2 Smoking During Pregnancy<sup>22</sup>

### Smoking During Pregnancy: Deprivation Time Series

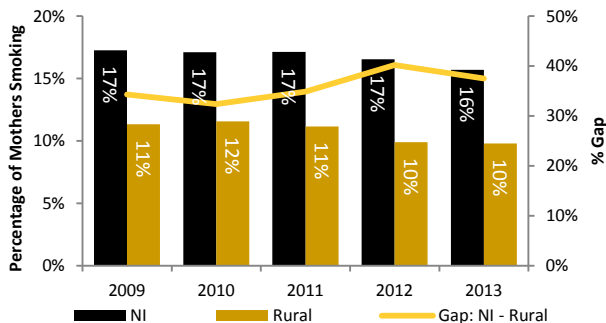
Over the last five years the percentage of mothers smoking during pregnancy reduced across both NI and its most deprived areas, by 9% and 10% respectively. This meant that the most deprived areas still remained around three-quarters higher than the NI average.

Within the least deprived areas, the proportion of mothers smoking during pregnancy remained relatively steady throughout the period and stood at 7% in 2013.

The most-least deprived inequality gap reduced from almost three and a half times higher (336%) to less than three times higher than the least deprived areas (286%).



### Smoking During Pregnancy: Rurality Time Series

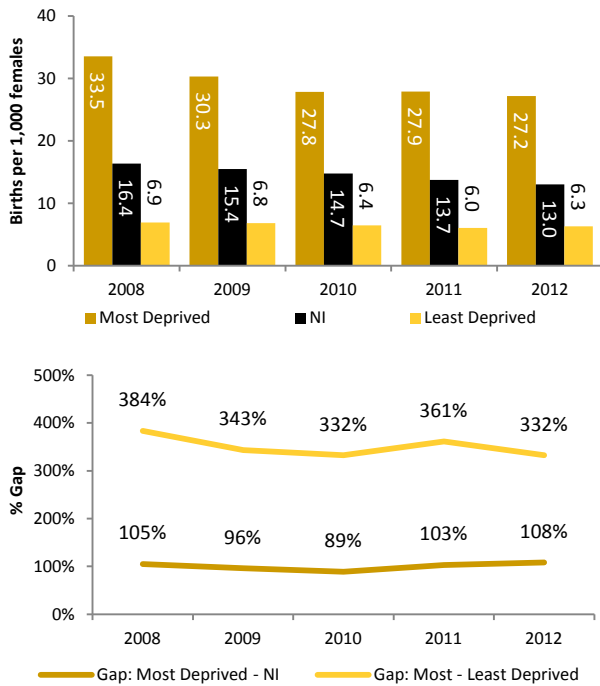


In 2013, 10% of mothers residing in rural areas reported smoking during pregnancy, with rural areas approximately a third lower than the NI average.

<sup>22</sup> It should be noted that expectant mothers are asked of their smoking status at their first hospital appointment and therefore rates may drop after this point.

### 11.3 Teenage Birth Rate

#### Teenage Birth Rate: Deprivation Time Series



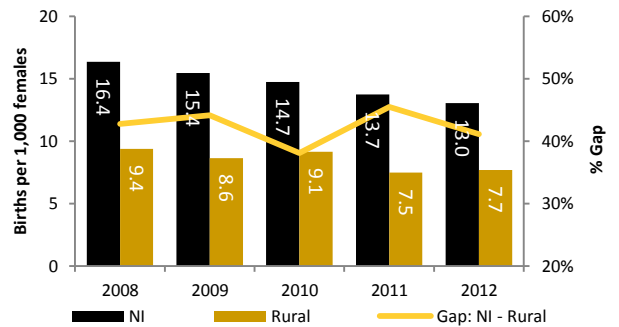
Teenage birth rates have decreased by approximately one-fifth over the last five years across both NI and its most deprived areas, with the most deprived areas remaining consistently around double the NI average over the period.

The rate in the least deprived areas also declined but at a lower rate which meant that the most-least deprived inequality gap narrowed during the period. Despite this the gap remained large, with the most deprived areas still more than three times (332%) higher than that of the least deprived areas.

#### Teenage Birth Rate: Rurality Time Series

The teenage birth rate in rural areas fell by 20% over the last five years, and stood at 7.7 births per 1,000 females in 2012.

The inequality gap, despite some fluctuation, remained broadly similar at the beginning and end of the period standing at 41% in 2012.

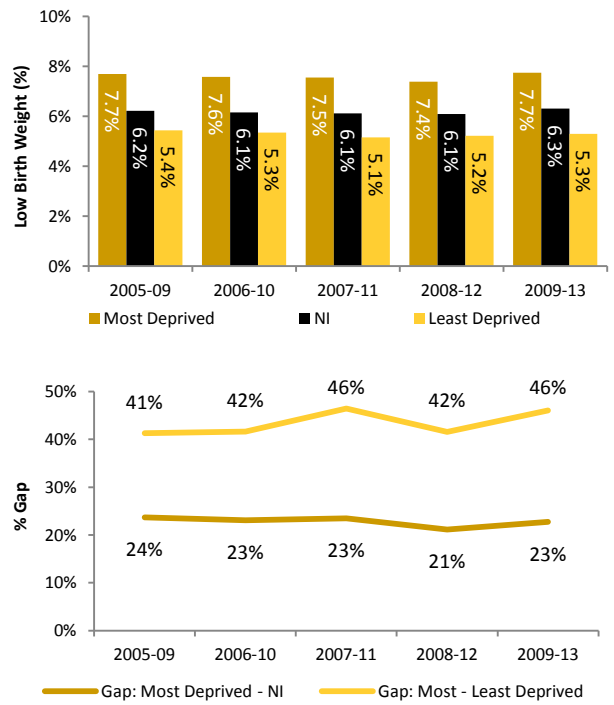


## 11.4 Low Birth Weight

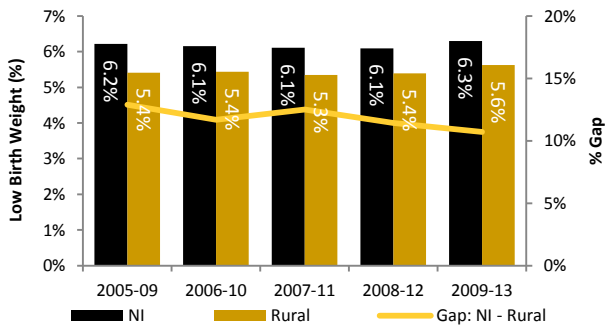
### Low Birth Weight: Deprivation Time Series

Between 2005-09 and 2009-13 the proportion of low birth weight babies remained fairly constant across the region, and its most and least deprived areas.

Over the observed period, the rate in the most deprived areas remained at almost a quarter higher than the NI average, and the most-least deprived gap remained steady and stood at 46% in 2009-13.



### Low Birth Weight: Rurality Time Series

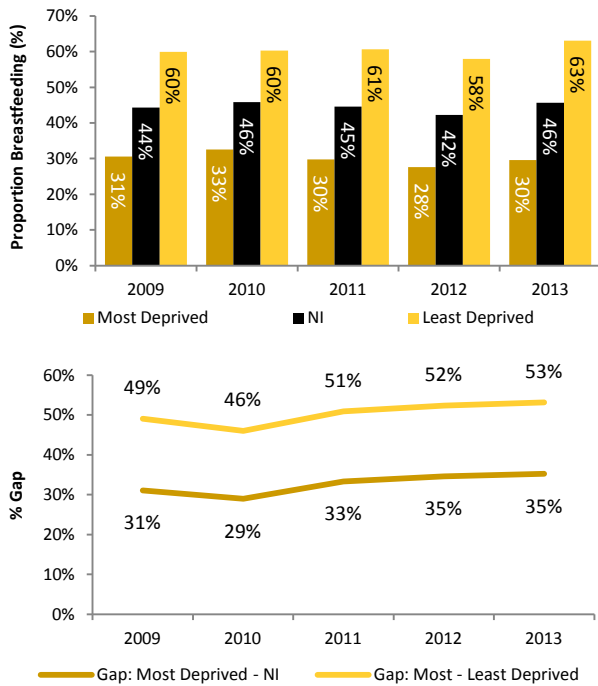


During the period, the rate in rural areas remained fairly constant, at around a tenth lower than the NI average.



## 11.5 Breastfeeding on Discharge

### Breastfeeding on Discharge: Deprivation Time Series

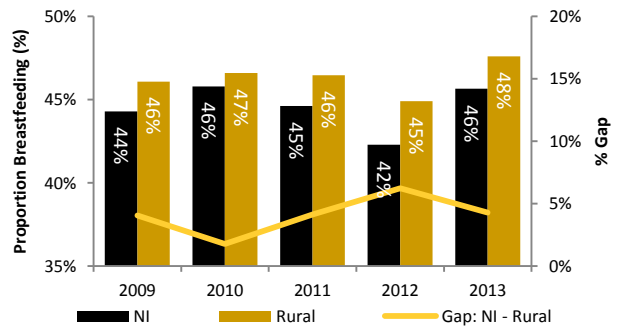


Over the last five years, the proportion of mothers in NI that were breastfeeding on discharge from hospital showed little change and stood at 46% in 2013. Similarly, the rate in the least deprived areas also showed little variation across the period. A small increase in the most deprived areas resulted in the inequality gaps increasing slightly between 2009 and 2013. The rate in the most deprived areas was over a third (35%) lower than the NI average and less than half the rate in the least deprived areas in 2013.

### Breastfeeding on Discharge: Rurality Time Series

Across the period, the breastfeeding on discharge rate remained higher in rural areas than in the overall region, reaching 48% in 2013.

Despite some annual fluctuation during the period, the NI-rural gap in 2013 (4%) was similar to that in 2009.





# Diet & Dental Health

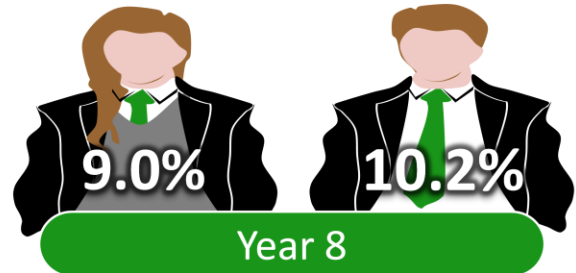
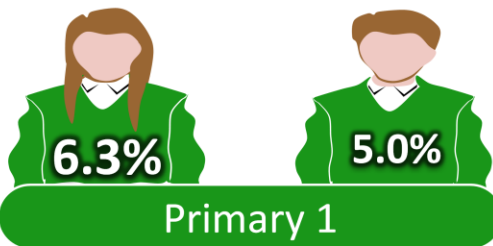
Childhood Obesity – Primary 1

Childhood Obesity – Year 8

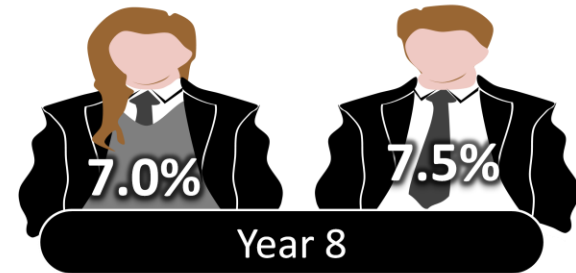
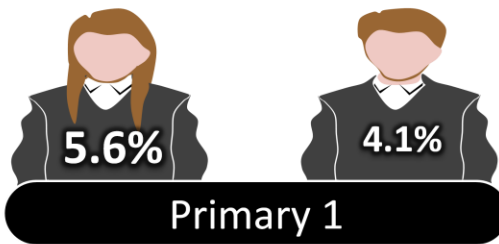
Standardised Dental Registration Rate

## Childhood Obesity Rate

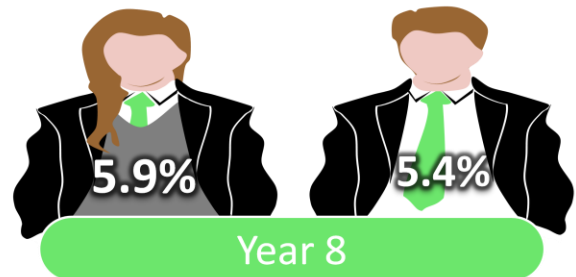
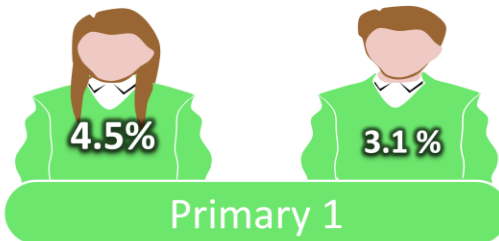
Most Deprived



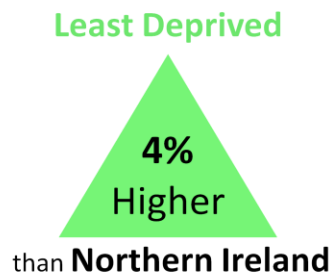
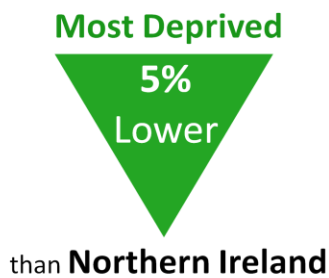
Northern Ireland



Least Deprived



## Standardised Dental Registration Rate



## 12. Diet & Dental Health

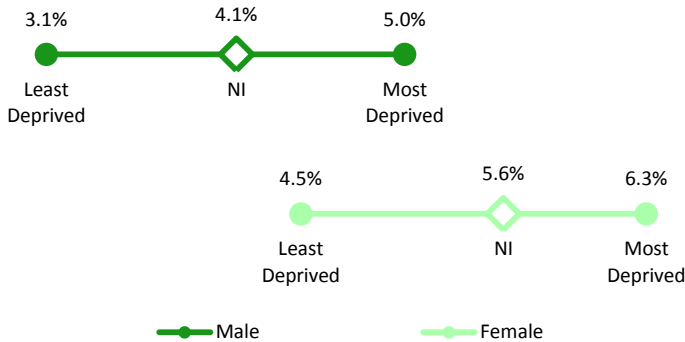
*Obesity is generally caused by poor diet and low levels of physical activity, and can cause a number of health problems such as type 2 diabetes, heart disease and cancer. Therefore it can also shorten individuals' life expectancy. According to the Health Survey Northern Ireland (HSNI), one in four adults were obese in 2013/14. Obesity in childhood is also linked to many health complications in later life and can be an indication that the child will be obese as an adult.*

*The Chief Medical Officer issues guidelines on the amount of physical activity a person should engage in to achieve a healthy lifestyle, which currently for adults is 150 minutes of moderate intensity activity (such as golf, hill walking, cricket or horse riding) in bouts of 10 minutes or more, or 75 minutes of vigorous activity (such as football, hockey or martial arts) over the course of a week. The Department of Health also advises to have at least 5 portions of fruit or vegetables each day for a healthy diet, a target met by one third of adults according to the HSNI.*

*Diet also plays a significant role in both dental caries and dental erosion. A balanced diet (as well as good hygiene and regular check-ups) is essential for good dental health. The standardised dental registration ratio shows how much more likely an individual is to be registered with a dentist in a specific area compared with the Northern Ireland average, having taken into account the areas' age and gender profile.*

## 12.1 Childhood Obesity – Primary 1 (P1)<sup>23</sup>

### P1 Childhood Obesity by Gender & Deprivation, 2012/13



In 2012/13, 4.1% of P1 boys were obese, compared with 5.6% of P1 girls.

In the most deprived areas, 6.3% of girls were obese, over twice the rate for boys in the least deprived areas (3.1%).

### P1 Childhood Obesity: Deprivation Time Series

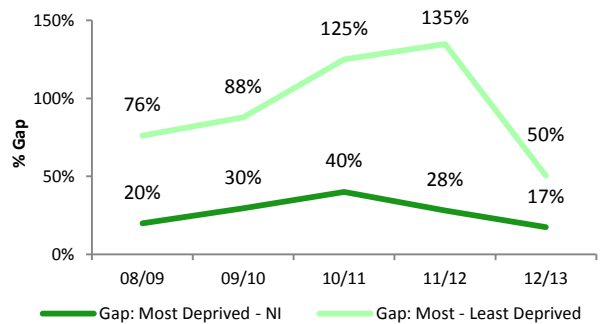
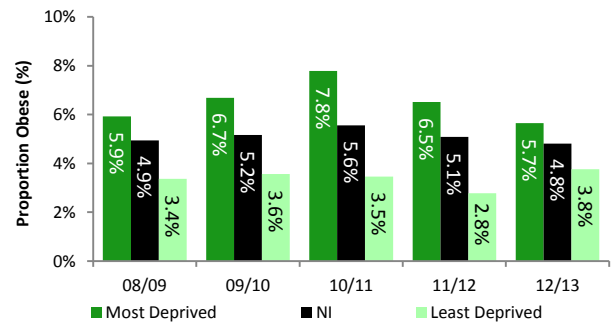
Across the period the proportion of P1 children classified as obese was generally unchanged, with around one in twenty children measured as obese.

However, the proportion of obese children in the most deprived areas increased from 5.9% in 2008/09 to peak at 7.8% in 2010/11, before falling to 5.7% in 2012/13.

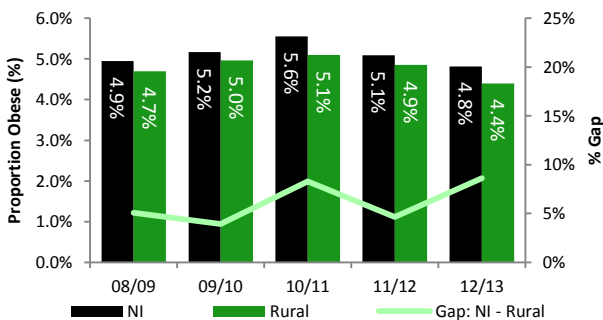
This fluctuation was reflected in the inequality gap between the most deprived areas and NI, which peaked at 40% in 2010/11 before falling to 17% in 2012/13.

In the least deprived areas, the proportion of obese children generally decreased until 2011/12 (2.8%), after which the obesity rate saw a large increase (36%), to stand at 3.8% in 2012/13.

This increase caused the most-least deprived inequality gap to narrow to 50% in 2012/13, despite peaking at 135% in 2011/12.



### P1 Childhood Obesity: Rurality Time Series



The proportion of children that were obese in rural areas fell slightly over the period from 4.7% to 4.4%. This resulted in a widening of the gap from 5% to 9% across the period.

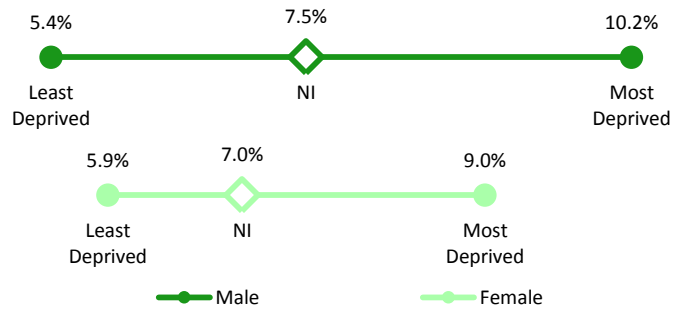
<sup>23</sup> Primary 1 figures include children aged between 54 and 66 months (4.5-5.5 years) at the time of measurement.

## 12.2 Childhood Obesity – Year 8 (Y8)<sup>24</sup>

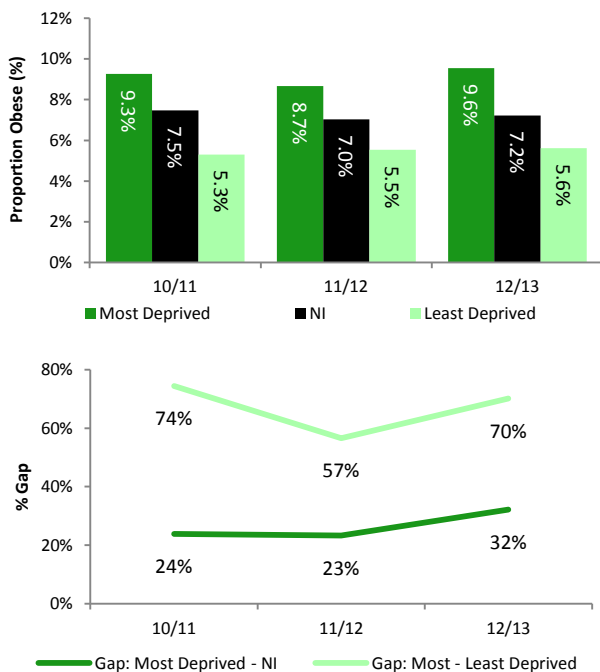
### Y8 Childhood Obesity by Gender & Deprivation, 2012/13

In 2012/13, 7.5% of Y8 boys were obese, compared with 7.0% of girls.

The highest proportion of obesity was found among boys in the most deprived areas, where one in ten (10.2%) were obese. This is almost double the obesity rate for boys in the least deprived areas (5.4%), where the lowest level of obesity was observed.



### Y8 Childhood Obesity: Deprivation Time Series



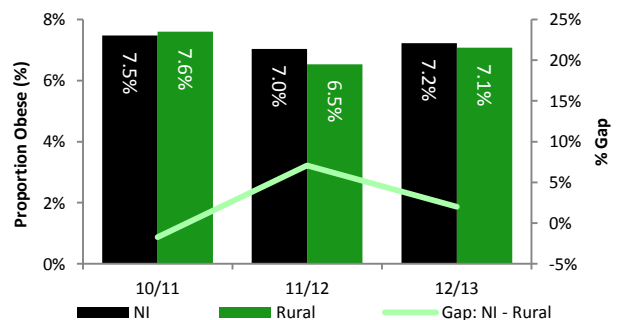
In 2012/13, 7.2% of Y8 children were obese, a slightly lower proportion than that in 2010/11. Over the same time frame, despite some fluctuation, the proportionate obesity increased slightly in the most deprived areas to stand at 9.6% in 2012/13.

This led to a widening of the inequality gap between the most deprived areas and NI from 24% in 2010/11 to 32% in 2012/13.

Over the period, the obesity rate in the least deprived areas increased by 6% to 5.6% in 2012/13. This led to a slight drop in the most-least deprived gap, with the proportion of obese children in the most deprived areas 70% higher than that in the least deprived areas in 2012/13.

### Y8 Childhood Obesity: Rurality Time Series

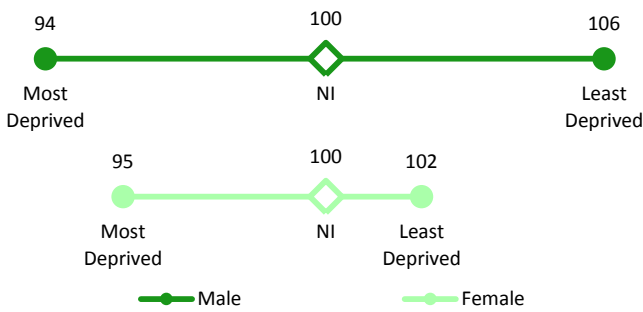
In 2012/13, the proportion of Y8 children classified as obese in rural areas (7.1%) was similar to the regional average.



<sup>24</sup> Year 8 refers to those between 138 and 150 months of age (11.5-12.5 years).

## 12.3 Standardised Dental Registration Rate<sup>25</sup>

### Standardised Dental Registration Rate by Deprivation, 2013



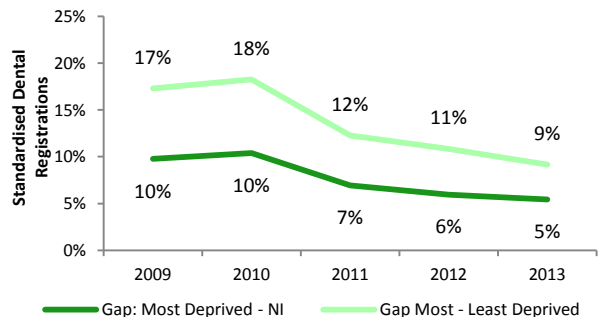
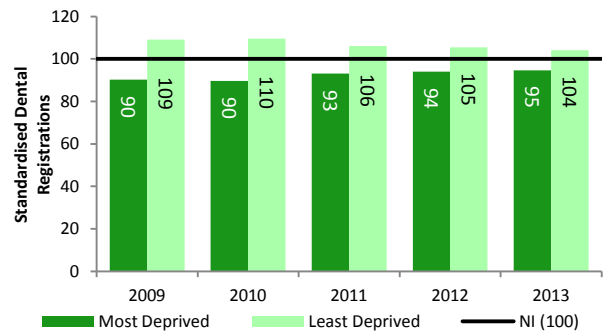
The standardised dental registration rate for males in the least deprived areas was 6% higher than the NI average, while the rate in the most deprived areas was 6% lower than the NI average.

Females showed less deviation from the regional average, with the rate in the least deprived areas 2% higher than NI and the most deprived rate 5% lower than the NI average.

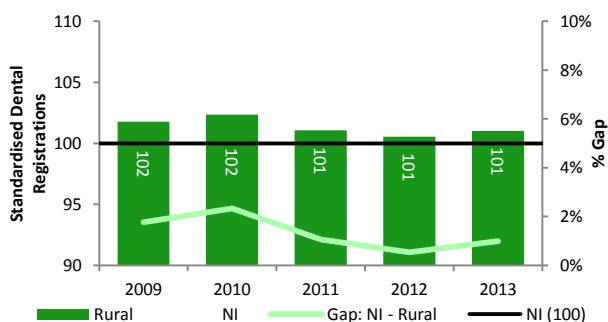
### Standardised Dental Registration Rate: Deprivation Time Series

Dental registrations in the most deprived areas have increased relative to the NI average, from 9.8% lower in 2009 to 5.4% lower in 2013.

Over the same period, the rate in the least deprived areas fell from 9% to 4% higher than the regional average. This caused the most-least deprived gap to narrow from 17% in 2009 to 9% in 2013.



### Standardised Dental Registration Rate: Rurality Time Series



Over the period, the dental registration rate in rural areas was consistently around 1-2% higher than the national average.

<sup>25</sup> It should be noted that this uses an indirect method of standardisation. For further information, see methodology appendix on page 108.





# Slope Index of Inequality

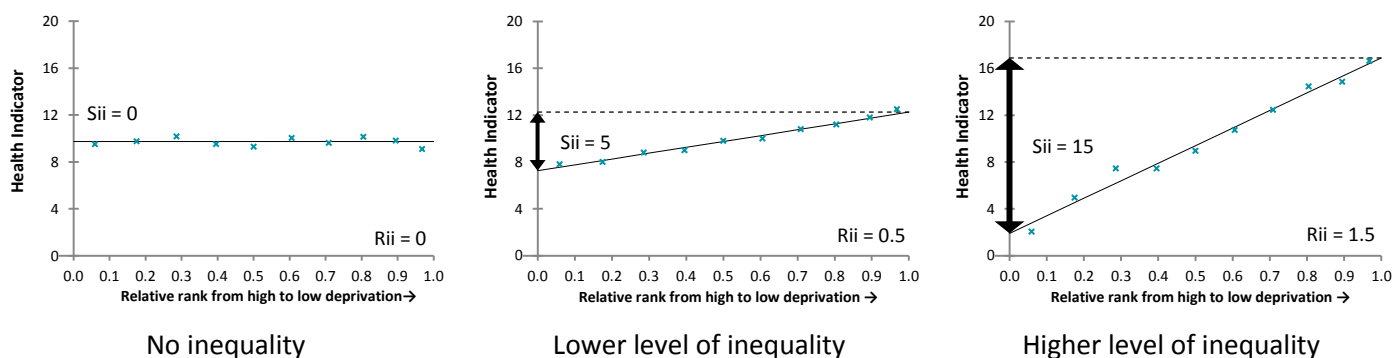


### 13.1 Social Gradient of Health

In addition to the simple deprivation gap analysis presented in this report, the following social gradient analysis has been undertaken to provide a fuller assessment of inequalities across all socio-economic groups in Northern Ireland.

Health inequalities are often considered in terms of the gap between the most and least deprived quintiles of the population. However, this does not account for those areas of intermediate levels of deprivation that may also be relatively disadvantaged in terms of health to some degree. This is reflected in the Marmot Review<sup>26</sup> which demonstrated that there is a social gradient in health that runs from top to bottom of the socioeconomic spectrum. The social gradient is also a global phenomenon whereby socio-economic factors have considerable impact on the health and mortality of populations in low, middle and high income countries. The social gradient in health means that health inequalities affect everyone.

The slope index of inequality (Sii) is a robust method for analysing and monitoring the socioeconomic inequalities in health over time by measuring changes in the social gradient in health. This approach involves calculating the mean health status of each socioeconomic group and then ranking classes by their socioeconomic status<sup>27</sup>. The Sii is then 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 all deprivation categories would give a horizontal line with a slope of zero (Sii=0) indicating that there is no evidence of inequality. The level of inequality is shown by the magnitude of the gradient, regardless of direction.**



#### 13.1.1 Relative Index of Inequality (Rii)

The relative index of inequality (Rii) is a non-dimensional coefficient of inequality representing the proportionate change in the health outcome over the population by socioeconomic status. Rii is calculated by dividing Sii by the mean outcome for the health indicator across the entire population. It allows inequalities to be compared and contrasted across a number of different health indicators as well as over time, with higher Rii values indicating greater inequalities across the analysed deprivation groups<sup>28</sup>. As with Sii, a value of zero for Rii indicates no evidence of inequality. The higher the Rii value is, the higher the level of inequalities that exist in the population. For example, a Rii of 1.5 means that the absolute gap between the most and least deprived is one and a half times the regional average for that indicator.

<sup>26</sup> Fair Society, Healthy Lives: The Marmot Review can be accessed at <http://www.marmotreview.org>

<sup>27</sup> Deprivation deciles as defined by the Northern Ireland Multiple Deprivation Measure (NIMDM).

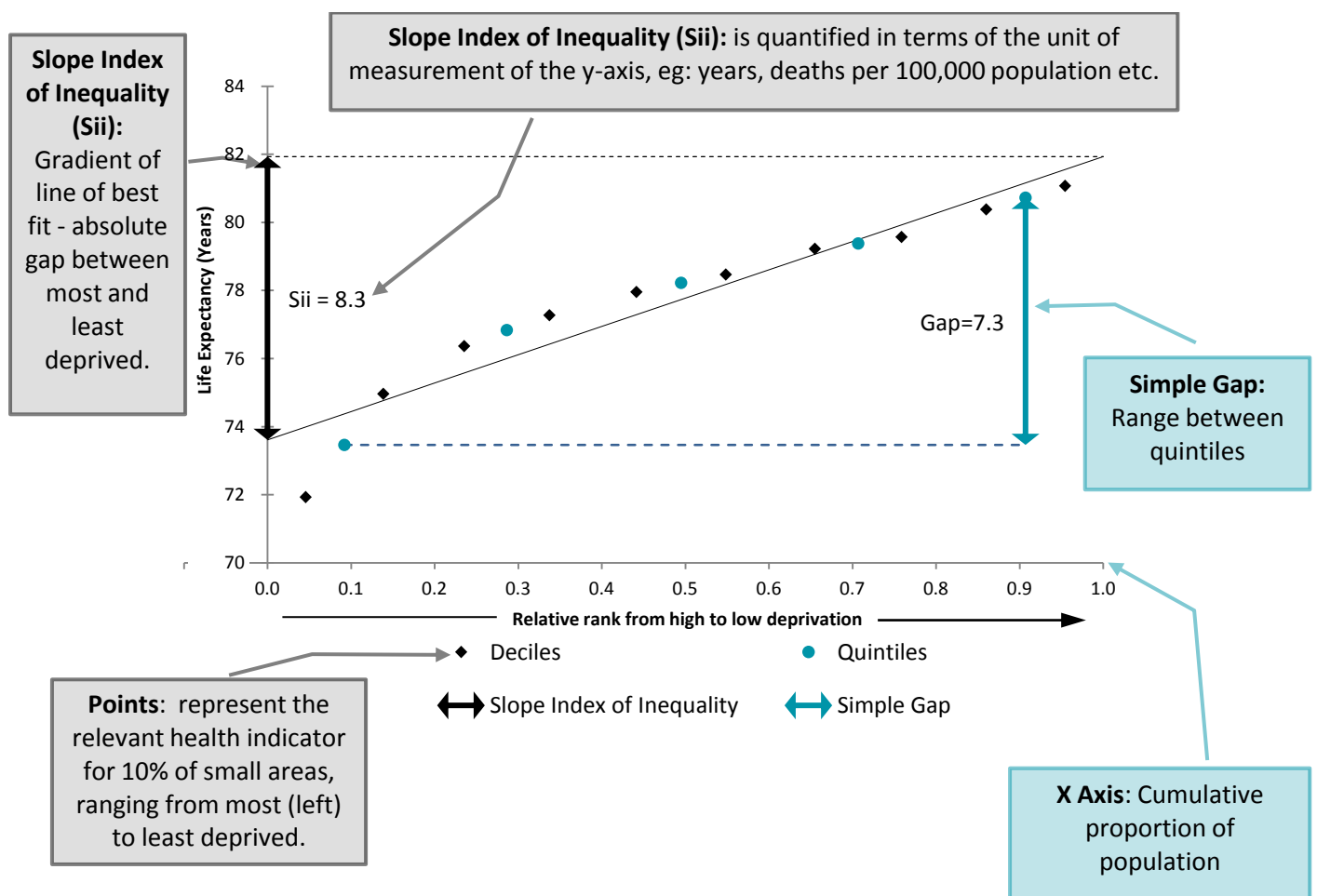
<sup>28</sup> A ranking of all analysed indicators can be found on page 106.

### 13.1.2 Sii vs. Gap Analysis

The simple gap analysis presented in the earlier sections of this report (i.e. difference between the most and least disadvantaged groups) is useful in that it is easy to produce and can be easily interpreted, however it is limited to an extent in that it only reflects the difference between the highest and lowest socioeconomic or deprived groups and can be potentially affected by extreme values for each of these groups. Sii however reflects on the experience of the entire population and is sensitive to the distribution of the population across all socioeconomic groups and for this reason the measures are not directly comparable. In addition, as outlined above, the Rii can be calculated from Sii allowing for inequalities to be monitored over time and to be compared and contrasted across a number of different health indicators. It should be noted that the simple gap analysis is based on the differences between the 20% most and least deprived areas and will differ from those represented here as the Sii/Rii analyses are based on the experience across all deprivation deciles.

The gap analysis however retains value in that it is based on a relatively easy concept to understand and can be calculated easily without the need for statistical modelling. Comparing trends in the simple gap analysis outlined earlier in the report with trends in the social gradient generally shows similar patterns in inequalities in terms of narrowing, widening or remaining broadly constant.

#### Slope of Index Chart



Slope of index can be inferred by plotting values in each deprivation decile against the cumulative proportion of the population in that decile, as shown. Sii is the gradient of a linear line of regression through these points.

### 13.1.3 Results

The following analysis on the social gradient of health shows that although there were a number of notable differences in the size of the inequality gaps within health indicators when compared with the simple gap analysis, the ranking in terms of the scale of the inequality gaps was the same with the exception of a few indicators. However it should be noted that for a number of indicators where the simple gap analysis suggested apparent changes (either widening or narrowing) in the size of the gap over time, the relative slope of index indicated that there was little to no change in the level of inequality across the population. As both analyses provide vital information in understanding the nature of inequalities that exist within a population, it is important to treat them as complementary rather than as standalone replacements for each other.

#### Ranking of Inequality Gaps

As with the simple gap analysis, the relative slope index of inequality (Rii) identified the standardised admission rate for alcohol related conditions as the highest level of inequality for the indicators analysed, followed by self harm admissions and teenage birth rate. Indeed the same ten indicators were identified as having the largest inequality gaps by Rii and the simple gap analysis; however, there were a few differences in the rank order of these inequality gaps, most notably drug related admission and death rates.

Rank	Simple Gap	Rii
1.	Standardised Admission Rate - Alcohol	Standardised Admission Rate - Alcohol
2.	Standardised Admission Rate - Self Harm	Standardised Admission Rate - Self Harm
3.	Teenage Birth Rate	Teenage Birth Rate
4.	Standardised Death Rate - Drugs	Standardised Admission Rate - Drugs <b>2 ▲</b>
5.	Standardised Death Rate - Alcohol	Standardised Death Rate - Alcohol
6.	Standardised Admission Rate – Drugs <sup>29</sup>	Standardised Death Rate – Drugs <sup>29</sup> <b>2 ▼</b>
7.	Standardised Death Rate - Drugs Misuse	Smoking During Pregnancy <b>1 ▲</b>
8.	Smoking During Pregnancy	Standardised Death Rate - Drugs Misuse <b>1 ▼</b>
9.	Standardised Death Rate - Respiratory U75	Standardised Death Rate - Respiratory U75
10.	Crude Suicide Rate	Crude Suicide Rate

#### Identifying Trends in Rii

Throughout this section of the report, trends of inequalities across the social gradient are identified as having changed (widened/narrowed) if there was a statistically significant difference between the baseline and latest figures or where there is a clear and consistent trend in Rii over time.

<sup>29</sup> Standardised Admission Rate - Drugs related mental health & behavioural disorders

### Changes in Inequality Gaps

In contrast to the simple gap analysis which suggested that the most-least deprived gaps for teenage birth rate and smoking during pregnancy narrowed, the relative index of inequality indicated no proportionate change. In addition, where the simple gap widened for the preventable and avoidable death rates, cancer incidence rate, death rate due to both lung cancer and all cancers, low birth weight, female AAACM and the proportion of mothers breastfeeding on discharge, the proportionate gap, as indicated by Rii, remained similar over the analysed period. This suggests that the level of inequality across the population remained broadly similar across the analysed period for these indicators, despite variation in the most and least deprived areas.

No Change in Rii	<b>Simple Gap Narrowed</b>	
	Teenage Birth Rate	Smoking During Pregnancy
	<b>Simple Gap Widened</b>	
	SDR – Cancer (U75)	SDR - Preventable
	Low Birth Weight	Female SDR - AAACM
	SDR - Avoidable	Std. Incidence Rate - Cancer
	SDR – Lung Cancer	Breastfeeding on Discharge

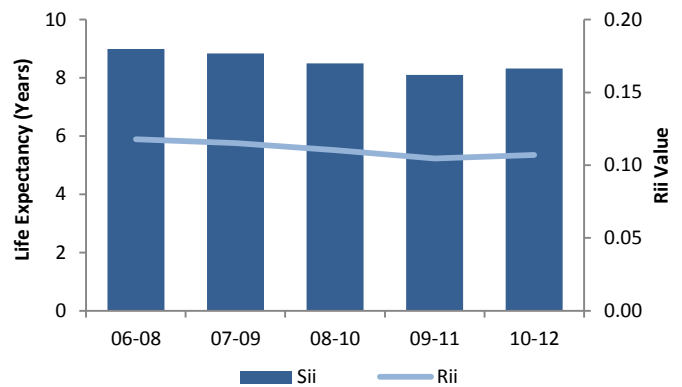
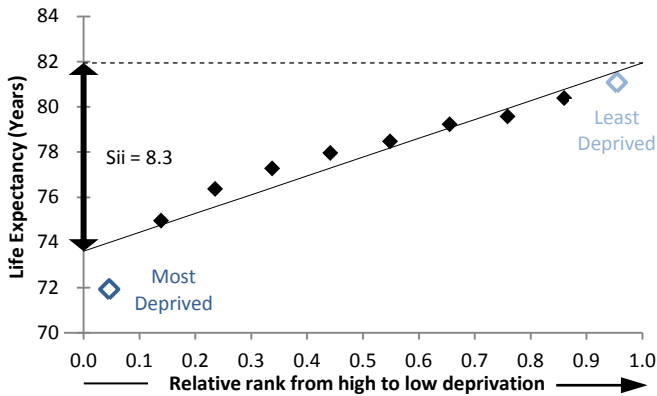
Although the slope of index analysis could not determine whether the relative gap in infant mortality had actually decreased due to fluctuations, it was evident that as with the simple gap analysis the level of inequality was low.

In addition, the Rii shows that the inequality gap across the social gradient for obesity in year 8 children has notably widened over the analysed period whereas the simple gap analysis indicated a narrowing between the most and least deprived areas. This is due to the fact that the simple gap analysis only reflects the difference between the most and least deprived quintiles where indeed the gap between the two has narrowed. However Rii reflects on the experience of the entire population and as such, the Rii gap for the earlier year in the series takes account of the relatively high levels of obesity for year 8 children in the less deprived deciles 6, 7 & 8, resulting in a much lower social gradient gap for the year. With the obesity rate lowering in these deciles over the period while that in other areas remained fairly constant, the gap across the social gradient has widened as a result.

A full comparison in trends in health indicators by the two different methods is available in section 13.13 on page 109.

### 13.2 Life Expectancy

#### 13.2.1 Male Life Expectancy



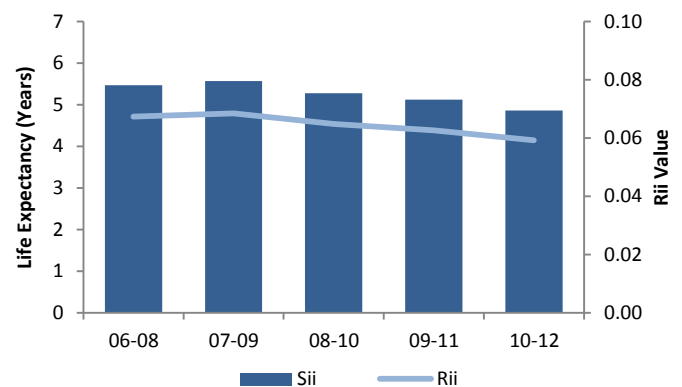
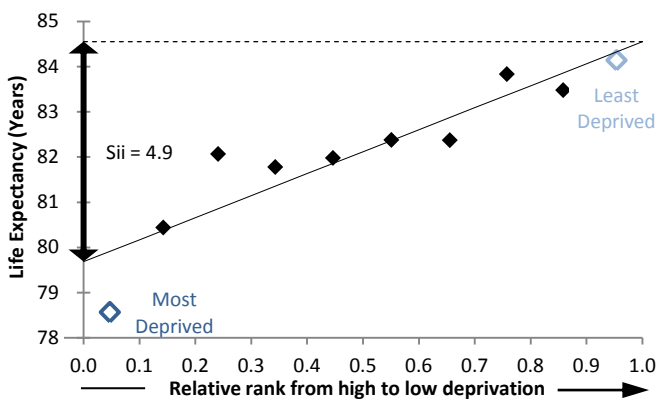
The slope index of inequality (Sii) shows that the absolute gap in life expectancy between the most and least deprived males was 8.3 years in 2010-12.

The Relative Index of Inequality (Rii) gives a proportionate gap of 0.11<sup>30</sup> i.e. the Sii gap is equivalent to 11% of the average male life expectancy in NI. As with the simple gap analysis, Rii indicates that the deprivation gap remained similar across the period.

Year	Simple Gap	Sii	Rii
2006-08	7.7	9.0	0.12
2007-09	7.6	8.8	0.12
2008-10	7.5	8.5	0.11
2009-11	7.2	8.1	0.10
2010-12	7.3	8.3	0.11

Unit of Gap Measurement: Years

#### 13.2.2 Female Life Expectancy



The Sii for female life expectancy shows an absolute deprivation gap of 4.9 years across the socioeconomic spectrum.

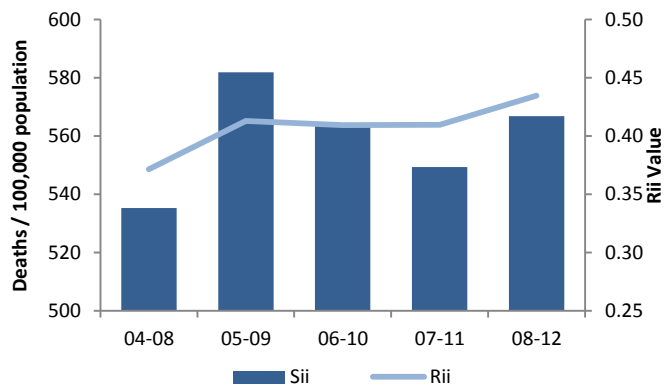
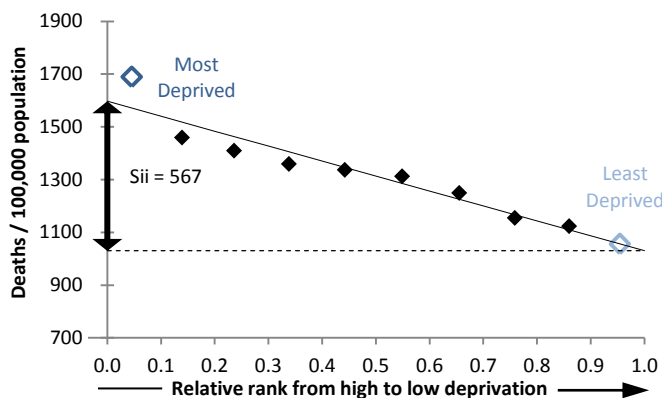
The Rii remained similar across the period and stood at 0.06<sup>30</sup> in 2010-12.

Year	Simple Gap	Sii	Rii
2006-08	4.5	5.5	0.07
2007-09	4.6	5.6	0.07
2008-10	4.4	5.3	0.06
2009-11	4.4	5.1	0.06
2010-12	4.3	4.9	0.06

Unit of Gap Measurement: Years

<sup>30</sup> A relatively small Rii value may be considered noteworthy when applied to life expectancy, as even a small inequality can represent a number of years of life.

### 13.2.3 SDR - AAACM - Male

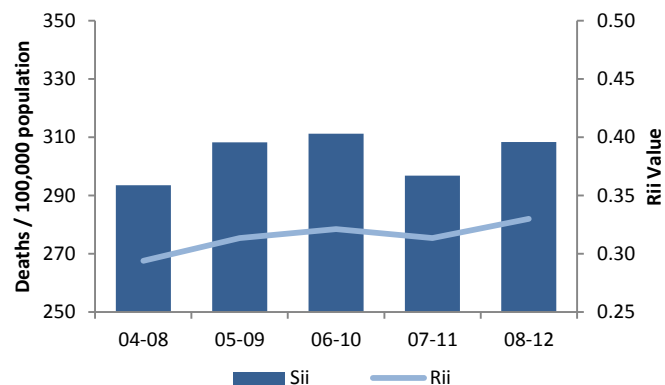
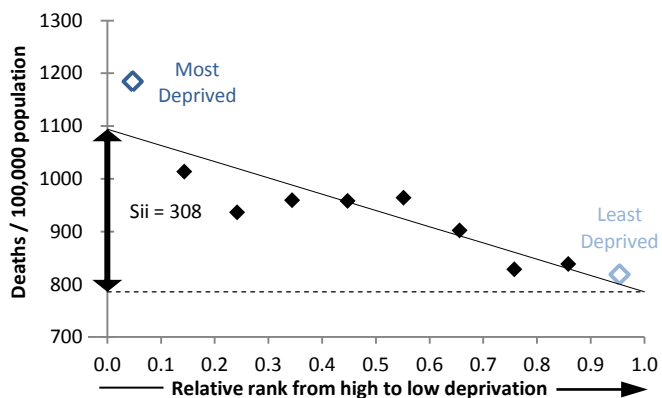


The Sii for male All Age All Cause Mortality (AAACM) shows an absolute deprivation gap of 567 deaths per 100,000 population. The Rii in 2008-12 (0.43) shows a widening of the proportionate gap since 2004-08 (0.37), which was due to relatively larger decrease in mortality over the period in areas with lower levels of deprivation. This supports the conclusion reached using the simple gap analysis that the level of inequality increased across the period.

Year	Simple Gap	Sii	Rii
2004-08	460 (37%)	535	0.37
2005-09	504 (42%)	582	0.41
2006-10	486 (42%)	564	0.41
2007-11	474 (42%)	549	0.41
2008-12	477 (44%)	567	0.43

Unit of Gap Measurement: Deaths per 100,000 population

### 13.2.4 SDR – AAAC - Female



In 2008-12, Sii for female SDR – AAAC stood at 308 deaths per 100,000 population.

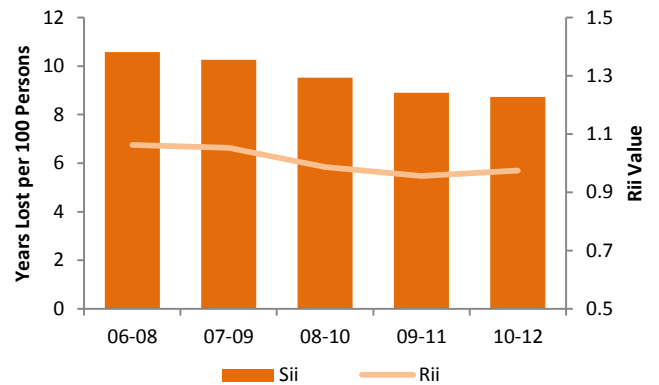
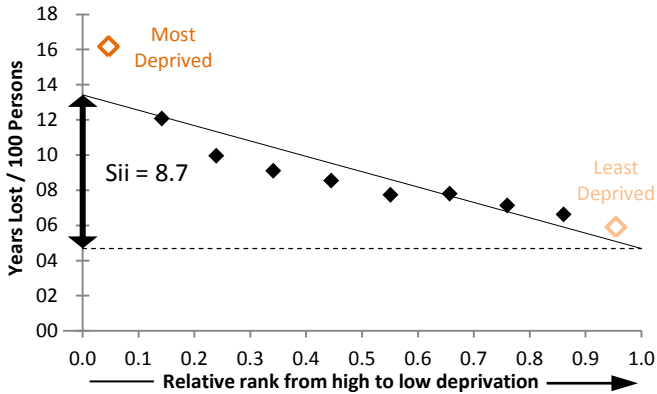
While the simple gap analysis indicated a slight increase in the most-least deprived inequality gap, Rii fluctuated across the period and shows no clear trend in the change of the proportionate gap, which stood at 0.33 in 2008-12.

Year	Simple Gap	Sii	Rii
2004-08	260 (29%)	294	0.29
2005-09	264 (30%)	308	0.31
2006-10	263 (31%)	311	0.32
2007-11	251 (29%)	297	0.31
2008-12	265 (32%)	308	0.33

Unit of Gap Measurement: Deaths per 100,000 population

### 13.3 Premature & Preventable Mortality

#### 13.3.1 Potential Years of Life Lost (PYLL) – All Cause



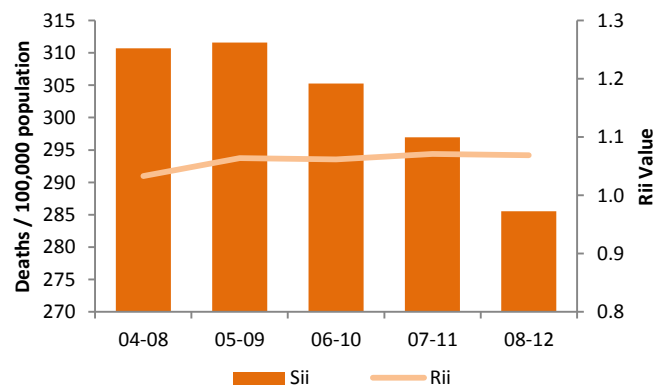
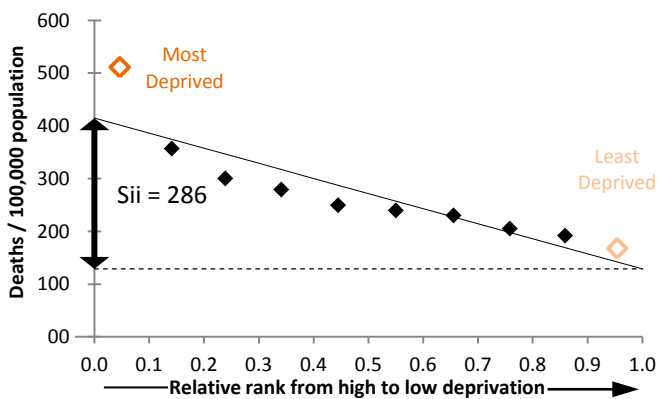
The slope index of inequality for PYLL showed an absolute deprivation gap of 8.7 years lost per 100 persons.

The trend over time in the relative index of inequality shows a general narrowing of the proportionate gap which stood at 0.97 in 2010-12.

Year	Simple Gap	Sii	Rii
2006-08	8.9 (134%)	10.6	1.06
2007-09	8.7 (131%)	10.3	1.05
2008-10	8.2 (124%)	9.5	0.99
2009-11	7.8 (121%)	8.9	0.96
2010-12	7.7 (123%)	8.7	0.97

Unit of Gap Measurement: Years lost per 100 persons

#### 13.3.2 Standardised Death Rate (SDR) – Avoidable



The Sii for female standardised death rate from avoidable causes shows an absolute gap between the most and least deprived of 286 deaths per 100,000 population.

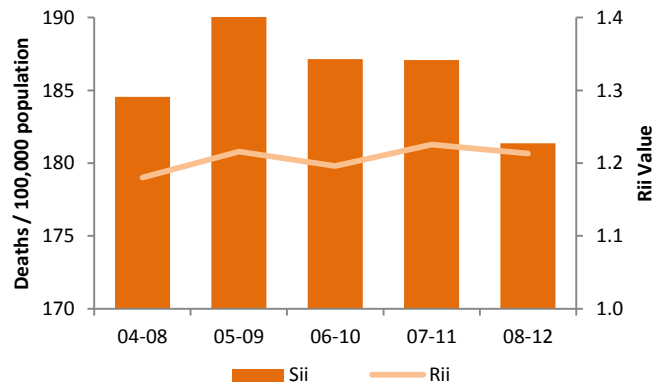
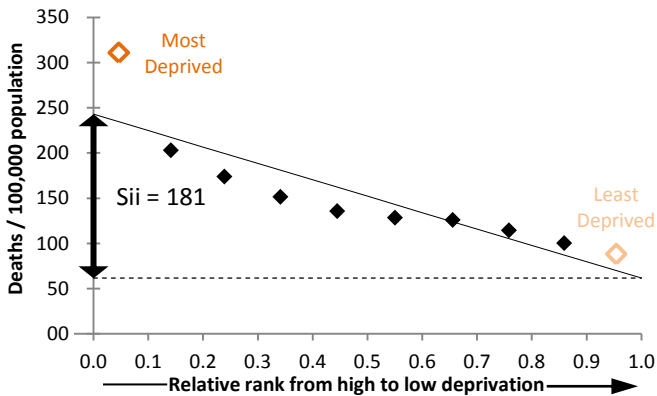
The Rii indicates that the proportionate gap remained broadly similar between 2004-08 (1.03) and 2008-12 (1.07), though the simple gap widened from 131% to 139% over the same period.

Year	Simple Gap	Sii	Rii
2004-08	263 (131%)	311	1.03
2005-09	264 (136%)	312	1.06
2006-10	261 (133%)	305	1.06
2007-11	256 (136%)	297	1.07
2008-12	249 (139%)	286	1.07

Unit of Gap Measurement: Deaths per 100,000 population



### 13.3.3 Standardised Death Rate (SDR) – Preventable

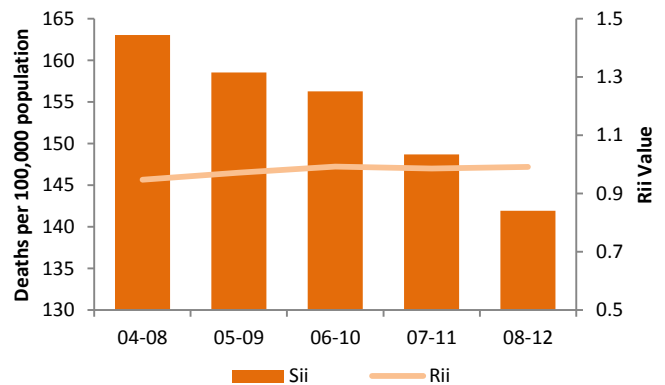
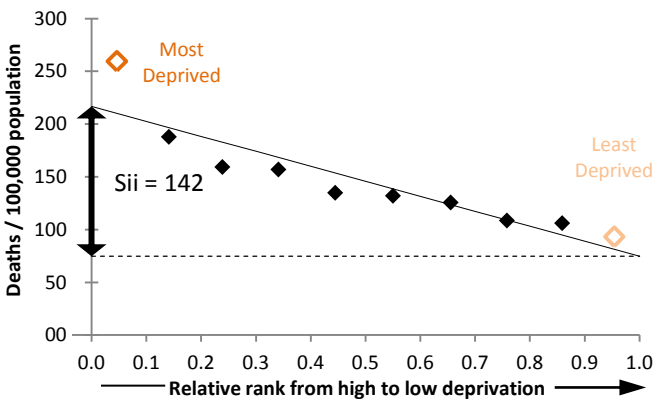


For the standardised death rate from preventable causes, Sii stood at 181 deaths per 100,000 population in 2008-12. The Rii gives a proportionate gap of 1.21, indicating that the absolute gap between the most and least deprived is 1.21 times the regional average, which remained similar across the period. The simple gap however indicates that despite some fluctuation, the inequality gap increased slightly between 2004-08 and 2008-12.

Year	Simple Gap	Sii	Rii
2004-08	155 (156%)	185	1.18
2005-09	162 (165%)	191	1.22
2006-10	161 (161%)	187	1.20
2007-11	162 (165%)	187	1.23
2008-12	159 (169%)	181	1.21

Unit of Gap Measurement: Deaths per 100,000 population

### 13.3.4 Standardised Death Rate (SDR) - Amenable



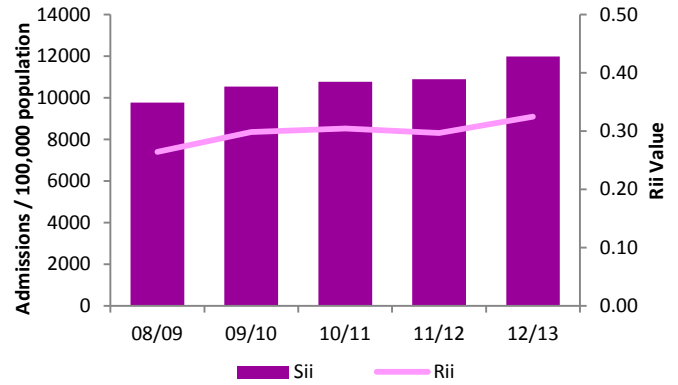
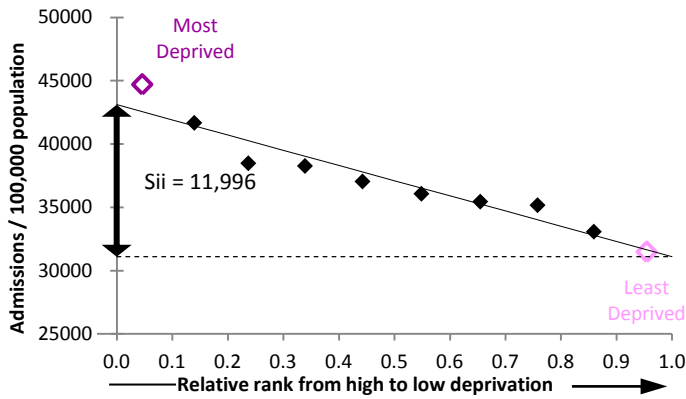
The Sii for standardised death rate - amenable shows that the absolute gap between the most and least deprived in 2008-12 was 142 deaths per 100,000 population. As shown by the simple gap analysis, the Rii remained similar over the period, with a proportionate gap of 0.99 in 2006-08.

Year	Simple Gap	Sii	Rii
2004-08	139 (118%)	163	0.95
2005-09	135 (119%)	159	0.97
2006-10	132 (120%)	156	0.99
2007-11	127 (119%)	149	0.99
2008-12	121 (122%)	142	0.99

Unit of Gap Measurement: Deaths per 100,000 population

### 13.4 Hospital Admissions

#### 13.4.1 Standardised Admission Rate (SAR) - All

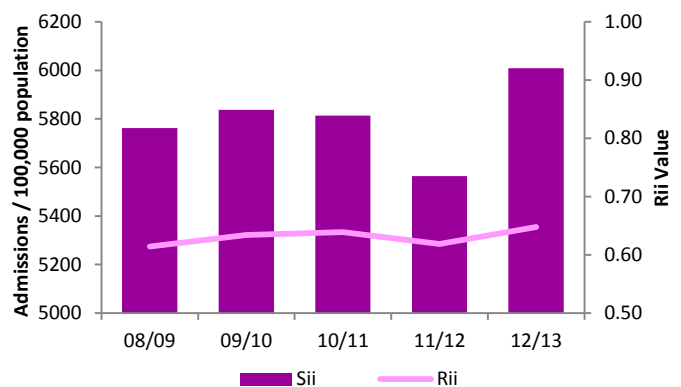
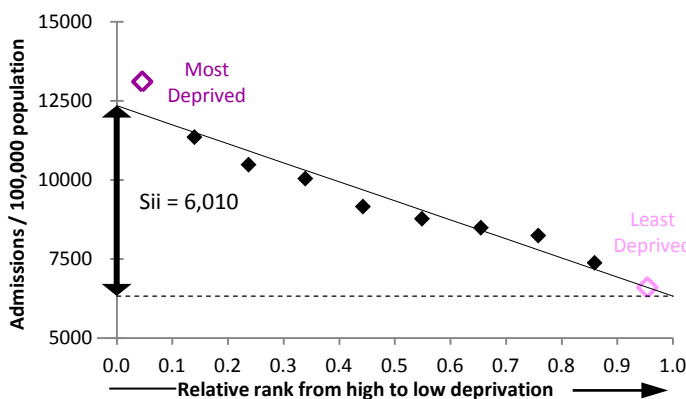


The slope index of inequality for the overall standardised admission rate indicates an absolute gap of 11,996 admissions per 100,000 population. The 2012/13 Rii value of 0.32 indicates a widening of the proportionate gap since 2008/09 (0.26). A widening of the inequality gap was also indicated by the simple gap, which increased from 27% to 33%.

Year	Simple Gap	Sii	Rii
2008/09	9,058 (27%)	9,766	0.26
2009/10	9,295 (30%)	10,540	0.30
2010/11	9,627 (31%)	10,770	0.30
2011/12	9,630 (30%)	10,900	0.30
2012/13	10,804 (33%)	11,996	0.32

Unit of Gap Measurement: Admissions per 100,000 population

#### 13.4.2 Standardised Admission Rate (SAR) - Emergency

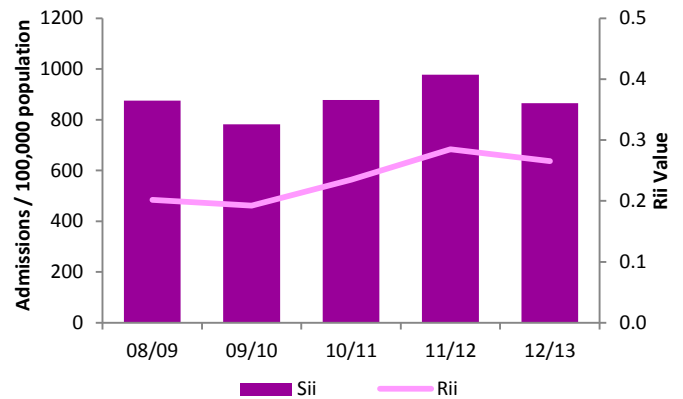
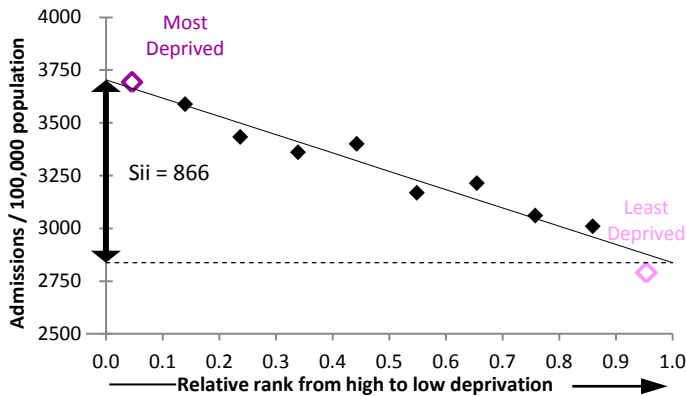


For the 2012/13 standardised emergency admission rate, Sii shows an absolute inequality gap between the most and least deprived of 6,010 admissions per 100,000 population, with Rii indicating that the gap was equivalent to 65% of the NI average. As with the simple gap, Rii remained broadly similar to that in previous years.

Year	Simple Gap	Sii	Rii
2008/09	5,112 (72%)	5,763	0.61
2009/10	5,073 (74%)	5,837	0.63
2010/11	5,084 (75%)	5,814	0.64
2011/12	4,765 (69%)	5,564	0.62
2012/13	5,182 (74%)	6,010	0.65

Unit of Gap Measurement: Admissions per 100,000 population

### 13.4.3 Standardised Admission Rate (SAR) – Elective Inpatients

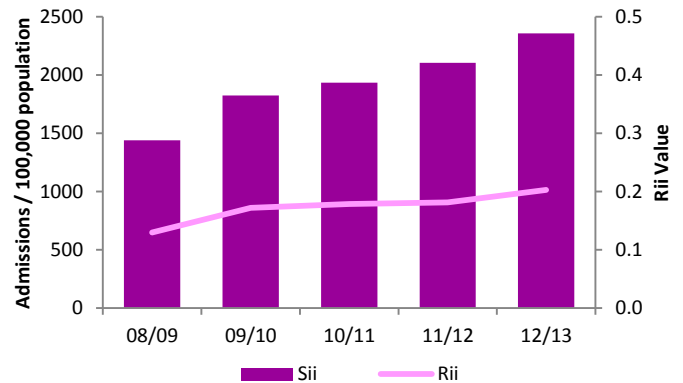
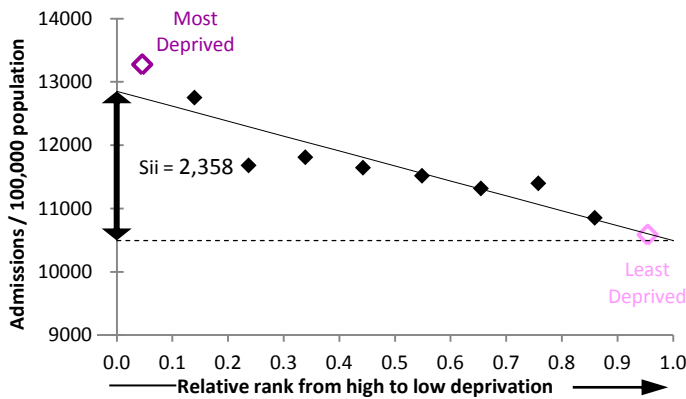


The slope index of inequality for the standardised elective admission rate of inpatients gives an absolute gap of 866 admissions per 100,000 population. The relative index of inequality in 2012/13 was 0.27, around a third higher than that in 2008/09 (0.20).

Year	Simple Gap	Sii	Rii
2008/09	775 (20%)	876	0.20
2009/10	654 (17%)	782	0.19
2010/11	771 (23%)	877	0.23
2011/12	856 (29%)	978	0.28
2012/13	735 (25%)	866	0.27

Unit of Gap Measurement: Admissions per 100,000 population

### 13.4.4 Standardised Admission Rate (SAR) – Day Cases



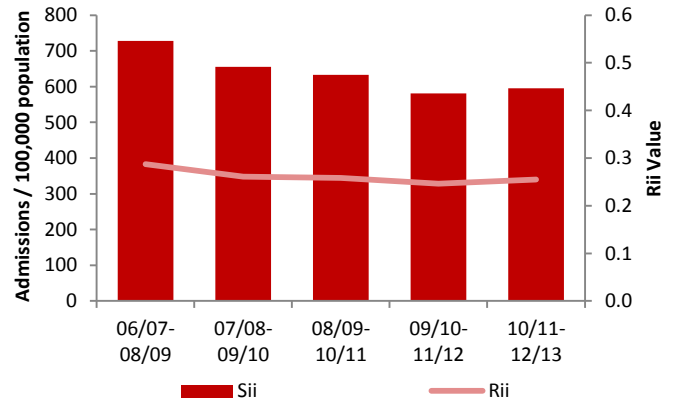
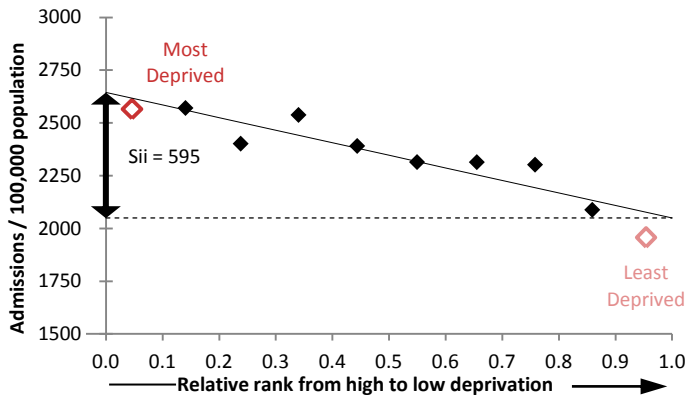
For the standardised admission rate of day cases, Sii gives an absolute gap of 2,358 admissions per 100,000 population. As with the simple gap, Rii also shows that the proportionate deprivation gap widened between 2008/09 (0.13) and 2012/13 (0.20).

Year	Simple Gap	Sii	Rii
2008/09	1,484 (14%)	1,440	0.13
2009/10	1,691 (17%)	1,825	0.17
2010/11	1,802 (18%)	1,934	0.18
2011/12	1,959 (18%)	2,105	0.18
2012/13	2,274 (21%)	2,358	0.20

Unit of Gap Measurement: Admissions per 100,000 population

### 13.5 Circulatory Disease

#### 13.5.1 Standardised Admission Rate (SAR) – Circulatory



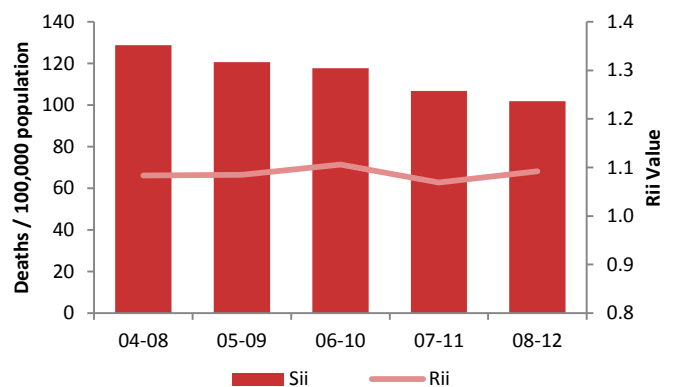
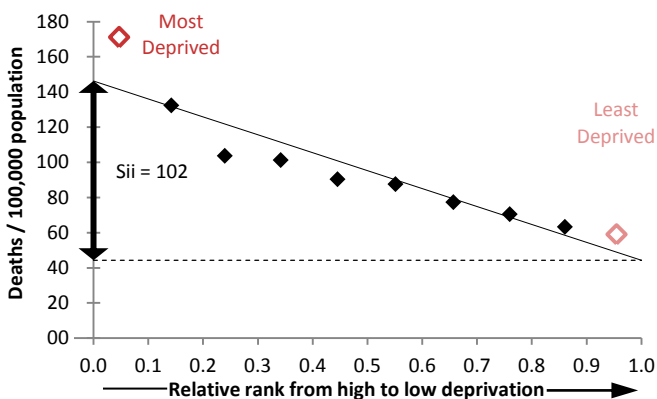
Sii showed an absolute gap of 595 admissions per 100,000 population for circulatory admissions.

The general trend in the relative index of inequality shows a small gradual decrease over the period, with a proportionate gap of 0.25 in 2010/11-2012/13.

Year	Simple Gap	Sii	Rii
2006/07-2008/09	654 (30%)	728	0.29
2007/08-2009/10	635 (29%)	656	0.26
2008/09-2010/11	610 (29%)	633	0.26
2009/10-2011/12	541 (26%)	581	0.25
2010/11-2012/13	548 (27%)	595	0.25

Unit of Gap Measurement: Admissions per 100,000 population

#### 13.5.2 Standardised Death Rate (SDR) – Circulatory (U75)

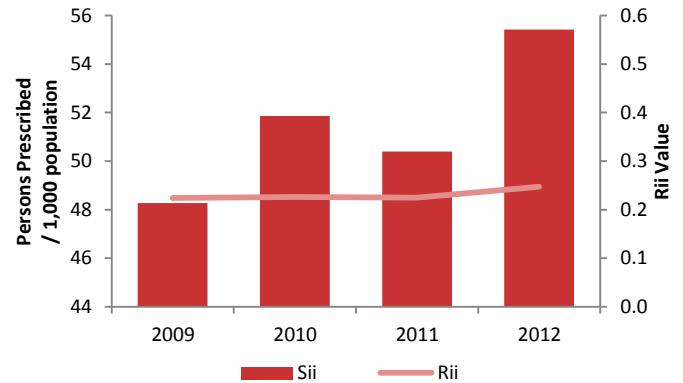
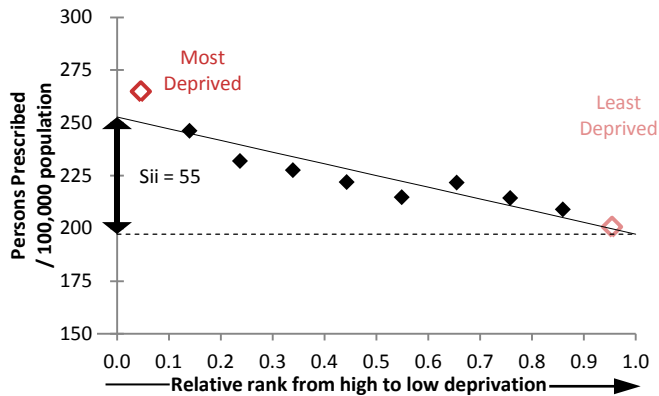


The slope index of inequality (Sii) for the standardised death rate - circulatory (U75) gives an absolute gap of 102 admissions per 100,000 population. Both the simple gap and proportionate gap (Rii) show little change over the period.

Year	Simple Gap	Sii	Rii
2004-08	110 (150%)	129	1.08
2005-09	102 (143%)	121	1.09
2006-10	99 (142%)	118	1.11
2007-11	93 (141%)	107	1.07
2008-12	89 (146%)	102	1.09

Unit of Gap Measurement: Deaths per 100,000 population

### 13.5.3 Standardised Prescription Rate (SPR) – Antihypertensive



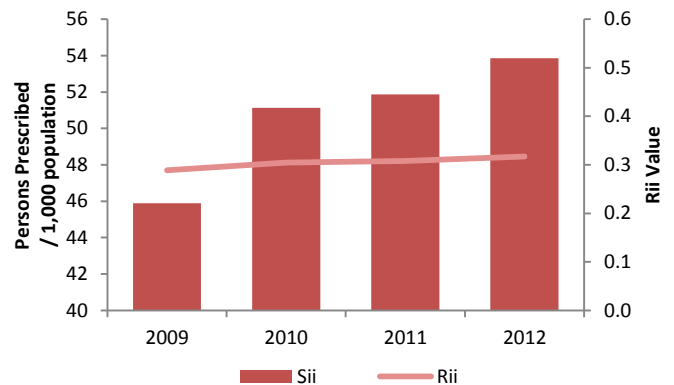
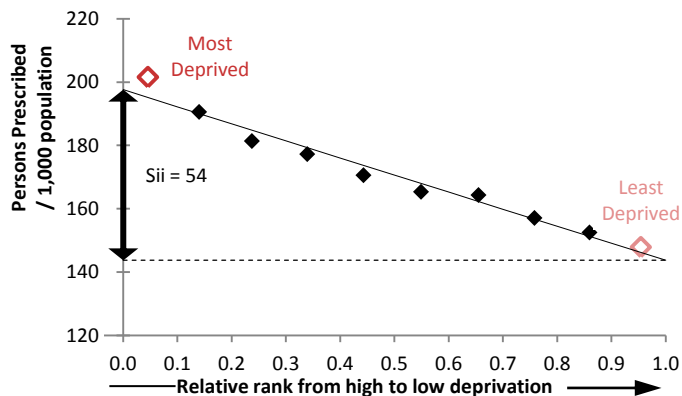
The slope index of inequality (Sii) shows that the absolute deprivation gap in the standardised rate of antihypertensive prescriptions was 55.4 persons prescribed per 1,000 population.

As with the simple gap, despite fluctuation over the period, there was a slight increase in the proportionate gap (Rii) from 0.22 in 2009 to 0.25 in 2012.

Year	Simple Gap	Sii	Rii
2009	44 (22%)	48	0.22
2010	48 (23%)	52	0.23
2011	46 (22%)	50	0.22
2012	50 (25%)	55	0.25

Unit of Gap Measurement: Persons prescribed per 1,000 population

### 13.5.4 Standardised Prescription Rate (SPR) – Statin



For the standardised rate of Statin prescriptions, Sii shows an absolute gap of 53.9 persons prescribed per 1,000 population.

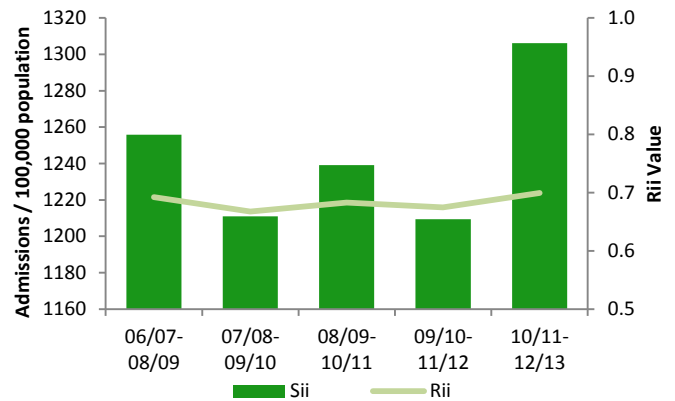
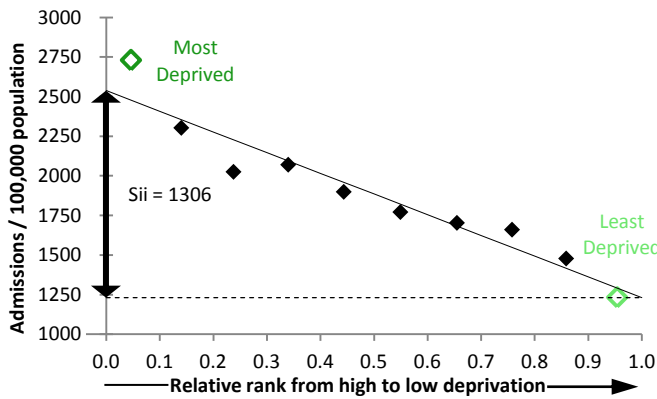
Rii showed a consistent increase in the proportionate gap each year between 2009 (0.29) and 2012 (0.32).

Year	Simple Gap	Sii	Rii
2009	38 (27%)	46	0.29
2010	43 (29%)	51	0.30
2011	44 (30%)	52	0.31
2012	45 (30%)	54	0.32

Unit of Gap Measurement: Persons prescribed per 1,000 population

### 13.6 Respiratory Disease

#### 13.6.1 Standardised Admission Rate (SAR) – Respiratory



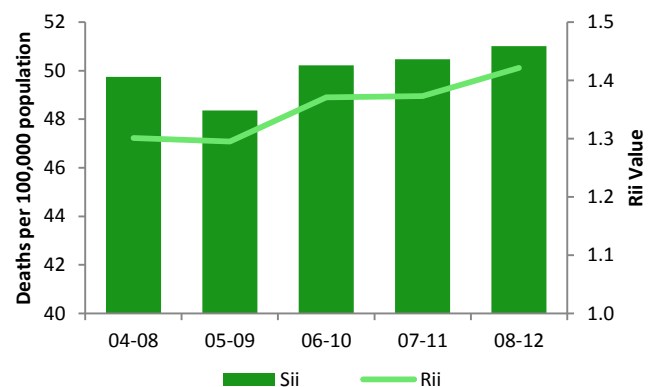
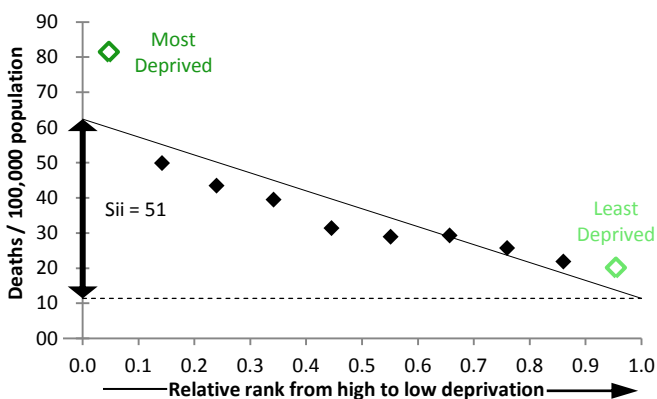
The slope index of inequality (Sii) for the standardised rate of admissions for respiratory disease shows an absolute deprivation gap across socioeconomic groups of 1,306 admissions per 100,000 population.

Despite slight fluctuation across the period, the relative index of inequality (Rii) in 2010/11-2012/13 (0.70) was broadly similar to that in 2006/07-2008/09 (0.69).

Year	Simple Gap	Sii	Rii
2006/07-2008/09	1,103 (83%)	1,256	0.69
2007/08-2009/10	1,054 (78%)	1,211	0.67
2008/09-2010/11	1,092 (82%)	1,239	0.68
2009/10-2011/12	1,049 (79%)	1,209	0.67
2010/11-2012/13	1,143 (84%)	1,306	0.70

Unit of Gap Measurement: Admissions per 100,000 population

#### 13.6.2 Standardised Death Rate (SDR) – Respiratory (U75)



With the standardised death rate for respiratory diseases, Sii shows an absolute deprivation gap of 51.0 deaths per 100,000 population.

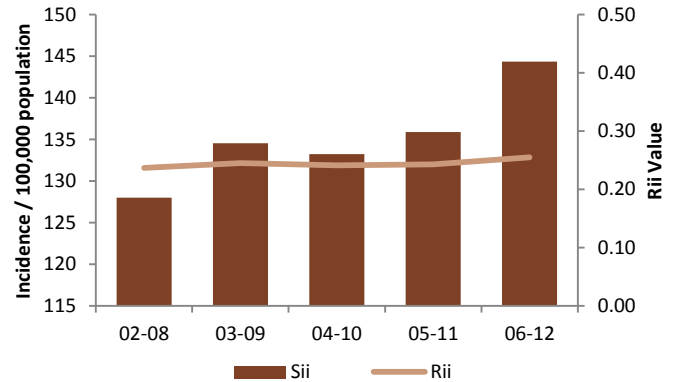
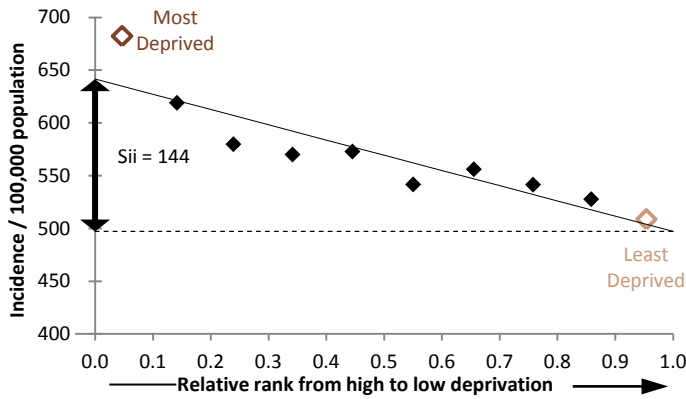
The Rii steadily increased across the period, to give a proportionate gap of 1.42 in 2008-12. As with the simple gap, this was largely due to the relatively large decrease in death rate in the least deprived areas.

Year	Simple Gap	Sii	Rii
2004-08	41.4 (172%)	49.7	1.30
2005-09	41.6 (180%)	48.4	1.30
2006-10	42.7 (196%)	50.2	1.37
2007-11	42.9 (189%)	50.5	1.37
2008-12	43.4 (207%)	51.0	1.42

Unit of Gap Measurement: Deaths per 100,000 population

### 13.7 Cancer

#### 13.7.1 Standardised Incidence Rate – Cancer

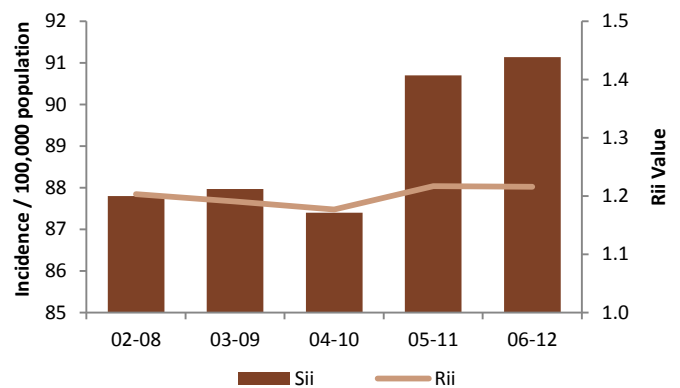
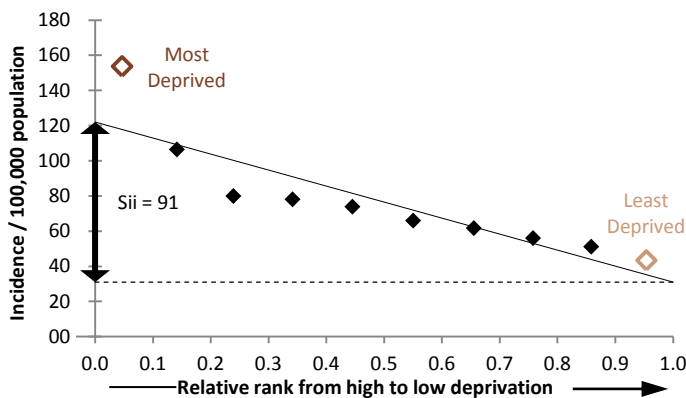


The slope index of inequality for cancer incidence shows an absolute deprivation gap of 144 cases per 100,000 population. In 2006-12, the relative index of inequality stood at 0.25, showing little change since 2002-08 (0.24). In contrast, the simple gap increased slightly over the period, despite fluctuation.

Year	Simple Gap	Sii	Rii
2002-08	112 (22%)	128	0.24
2003-09	120 (24%)	135	0.25
2004-10	119 (23%)	133	0.24
2005-11	125 (24%)	136	0.24
2006-12	130 (25%)	144	0.25

Unit of Gap Measurement: Incidence per 100,000 population

#### 13.7.2 Standardised Incidence Rate – Lung Cancer

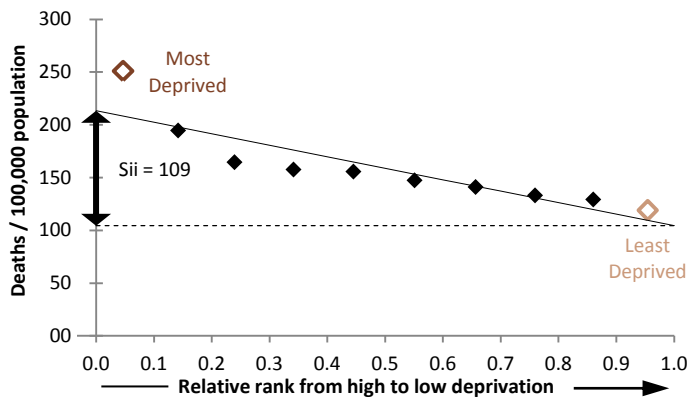


For lung cancer incidence, Sii shows an absolute deprivation gap of 91 cases per 100,000 population. As with the simple gap, the Rii remained similar across the period, and stood at 1.22 in 2006-12.

Year	Simple Gap	Sii	Rii
2002-08	77 (172%)	88	1.20
2003-09	78 (170%)	88	1.19
2004-10	77 (165%)	87	1.18
2005-11	80 (171%)	91	1.22
2006-12	81 (172%)	91	1.22

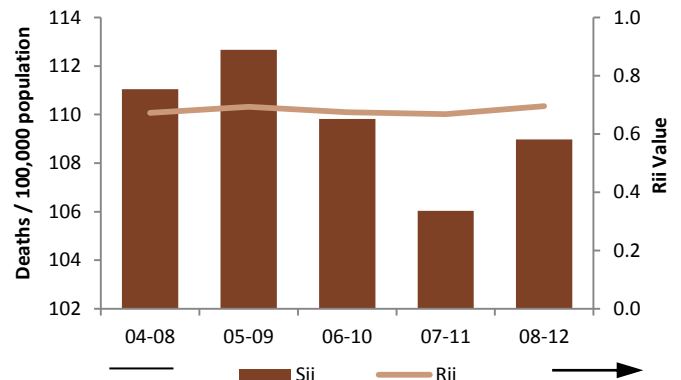
Unit of Gap Measurement: Incidence per 100,000 population

### 13.7.3 Standardised Death Rate (SDR) – Cancer (U75)



The slope index of inequality for SDR-cancer shows an absolute deprivation gap of 109 deaths per 100,000 population.

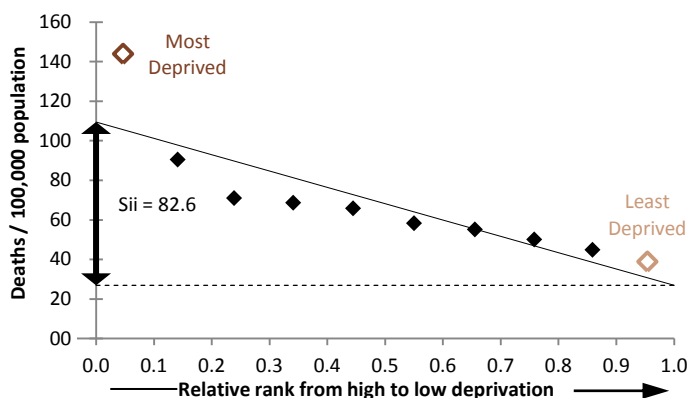
Although the simple gap indicates a widening of the inequality gap, the relative index of inequality shows no clear trend over the period, and stood at 0.70 in 2008-12.



Year	Simple Gap	Sii	Rii
2004-08	97 (74%)	111	0.67
2005-09	98 (76%)	113	0.69
2006-10	98 (76%)	110	0.68
2007-11	94 (73%)	106	0.67
2008-12	97 (78%)	109	0.70

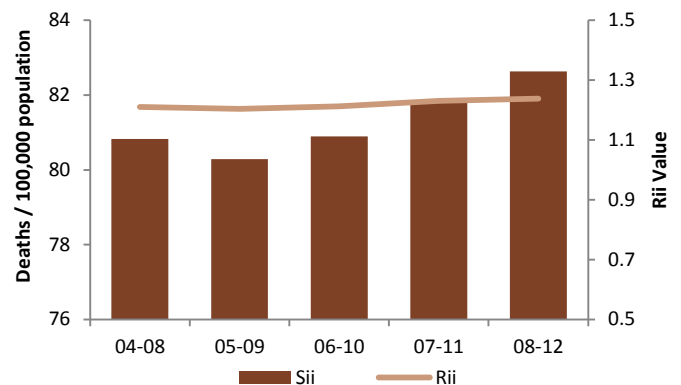
Unit of Gap Measurement: Deaths per 100,000 population

### 13.7.4 Standardised Death Rate (SDR) - Lung Cancer



In 2008-12, SDR-lung cancer had an absolute deprivation gap of 82.6 cases per 100,000 population.

The Rii showed little change in the proportionate deprivation gap between 2004-08 (1.21) and 2008-12 (1.24). Conversely, the simple gap analysis suggests a widening of the gap across the same period.



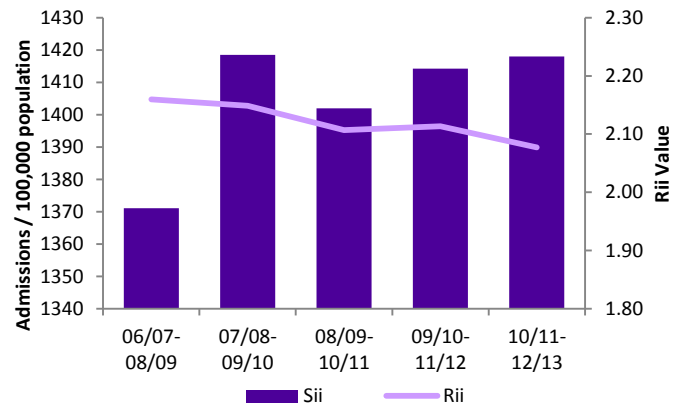
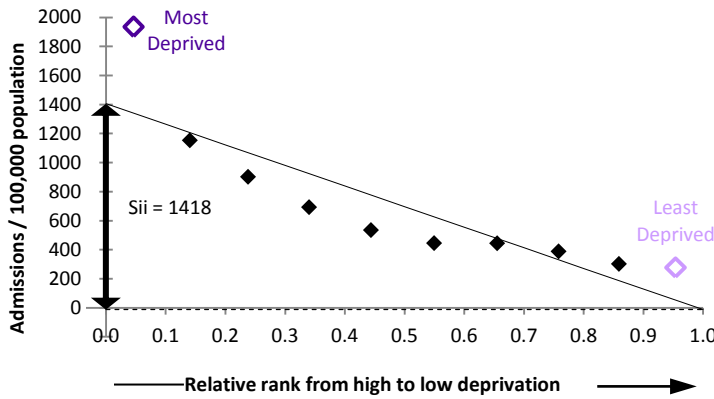
Year	Simple Gap	Sii	Rii
2004-08	68.9 (163%)	80.8	1.21
2005-09	70.2 (168%)	80.3	1.20
2006-10	72.8 (172%)	80.9	1.21
2007-11	73.4 (176%)	81.8	1.23
2008-12	73.4 (175%)	82.6	1.24

Unit of Gap Measurement: Deaths per 100,000 population



### 13.8 Alcohol, Smoking & Drugs

#### 13.8.1 Standardised Admission Rate (SAR) - Alcohol



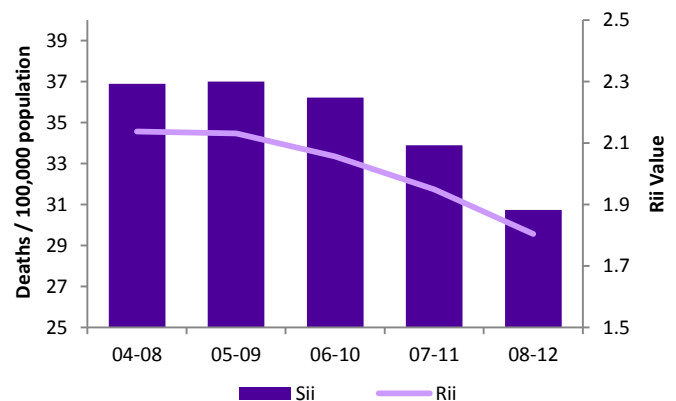
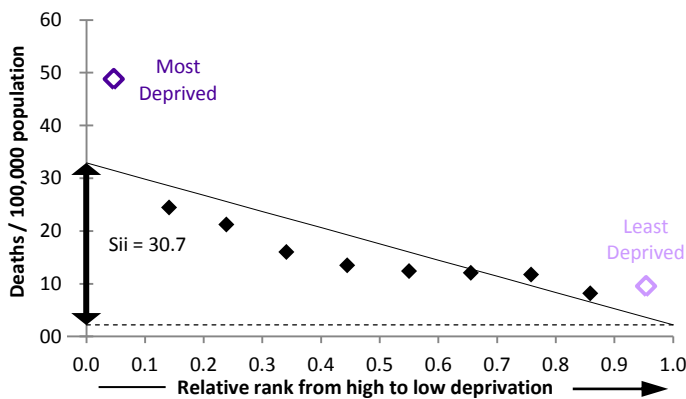
The slope index of inequality for alcohol related admissions shows an absolute deprivation gap of 1,418 admissions per 100,000 population.

Similar to the simple gap, the relative index of inequality shows that the absolute gap, despite remaining high, has decreased over the period.

Year	Simple Gap	Sii	Rii
2006/07-2008/09	1,194 (468%)	1,371	2.16
2007/08-2009/10	1,250 (462%)	1,419	2.15
2008/09-2010/11	1,237 (451%)	1,402	2.11
2009/10-2011/12	1,246 (452%)	1,414	2.11
2010/11-2012/13	1,237 (425%)	1,418	2.08

Unit of Gap Measurement: Admissions per 100,000 population

#### 13.8.2 Standardised Death Rate (SDR) - Alcohol



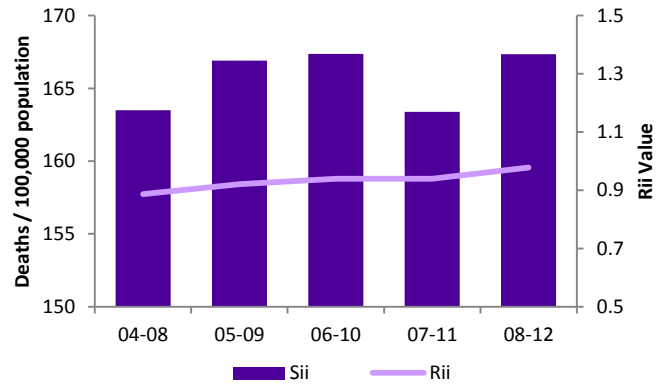
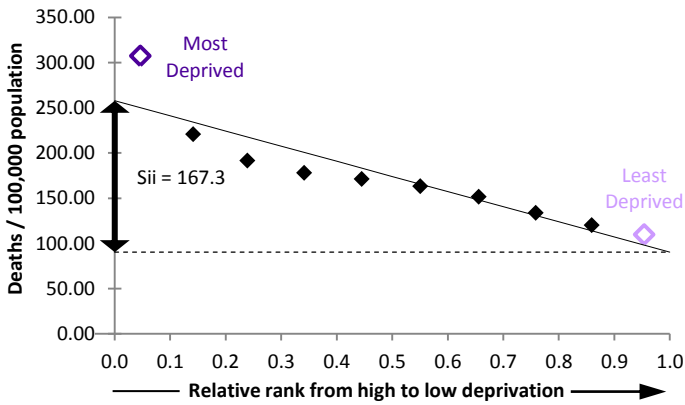
The slope index of inequality for SDR-alcohol shows an absolute deprivation gap of 31 deaths per 100,000 population.

Similar to the standardised admission rate for alcohol, although remaining high, the relative index of inequality shows that the absolute gap in alcohol related deaths has decreased over the period. Again, this was also the case with the simple gap.

Year	Simple Gap	Sii	Rii
2004-08	31.7 (411%)	36.9	2.14
2005-09	31.6 (422%)	37.0	2.13
2006-10	31.3 (410%)	36.2	2.06
2007-11	29.2 (351%)	33.9	1.95
2008-12	27.2 (307%)	30.7	1.80

Unit of Gap Measurement: Deaths per 100,000 population

### 13.8.3 Standardised Death Rate (SDR) - Smoking



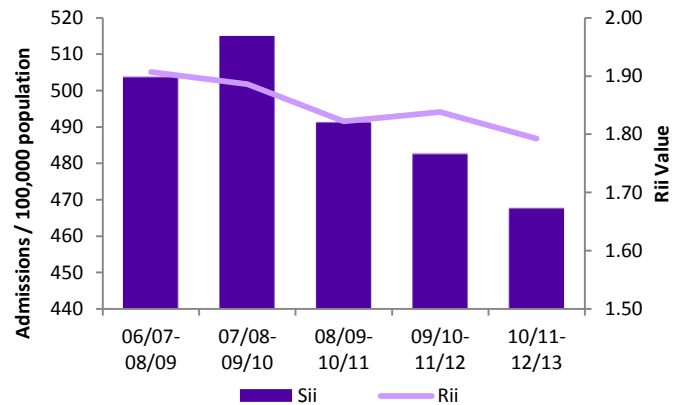
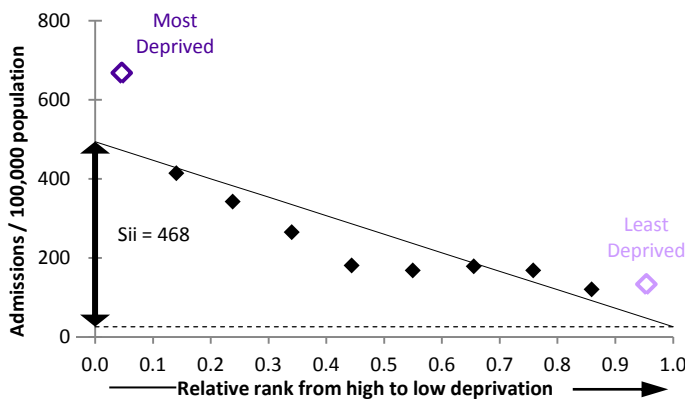
For the standardised death rate due to smoking related causes the Sii shows an absolute deprivation gap of 167 deaths per 100,000 population.

The Rii in 2008-12 increased over the period and stood at 0.98 in 2008-12.

Year	Simple Gap	Sii	Rii
2004-08	141.6 (110%)	163.5	0.89
2005-09	145.5 (117%)	166.9	0.92
2006-10	146.8 (120%)	167.4	0.94
2007-11	143.5 (119%)	163.4	0.94
2008-12	146.1 (127%)	167.3	0.98

Unit of Gap Measurement: Deaths per 100,000 population

### 13.8.4 Standardised Admission Rate (SAR) - Drugs related mental health & behavioural disorders



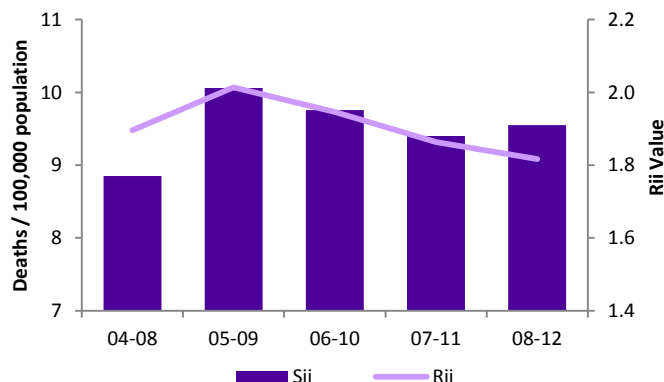
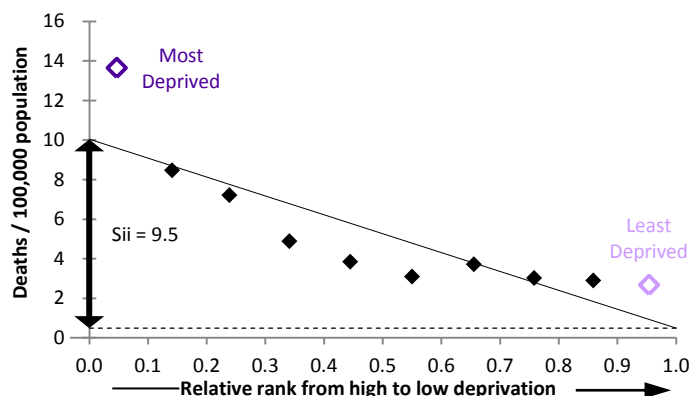
The slope index of inequality for drug related admissions shows an absolute deprivation gap of 468 deaths per 100,000 population.

Despite some slight fluctuation across the period, the relative index of inequality decreased over the period to stand at 1.79 in 2006/07-2008/09.

Year	Simple Gap	Sii	Rii
2006/07-2008/09	438 (360%)	503	1.91
2007/08-2009/10	452 (353%)	514	1.89
2008/09-2010/11	433 (331%)	491	1.82
2009/10-2011/12	427 (343%)	482	1.84
2010/11-2012/13	412 (324%)	468	1.79

Unit of Gap Measurement: Admissions per 100,000 population

### 13.8.5 Standardised Death Rate (SDR) - Drugs



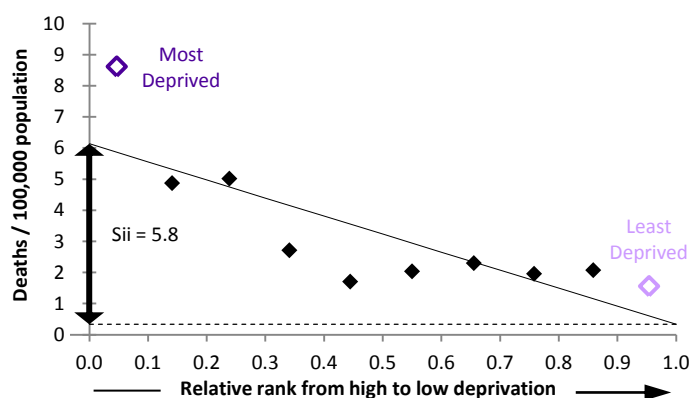
The slope index of inequality (Sii) for SDR-drugs shows an absolute deprivation gap of 9.5 deaths per 100,000 population.

Similar to the admission rate for drugs, Rii showed that the proportionate gap in the drug related death rate narrowed between 2004-08 and 2008-12 despite some fluctuation during the period. In contrast, the simple gap showed a relatively larger decrease over the period, again fluctuating during the period.

Year	Simple Gap	Sii	Rii
2004-08	7.7 (376%)	8.9	1.90
2005-09	8.7 (397%)	10.1	2.01
2006-10	8.4 (329%)	9.8	1.95
2007-11	7.7 (275%)	9.4	1.86
2008-12	8.2 (295%)	9.5	1.82

Unit of Gap Measurement: Deaths per 100,000 population

### 13.8.6 Standardised Death Rate (SDR) – Drug Misuse<sup>31</sup>



The slope index of inequality for standardised death rate due to drug misuse shows an absolute deprivation gap of 5.8 deaths per 100,000 population.

The relative index of inequality was 1.79, which indicates that the absolute gap between the most and least deprived areas was almost double the regional average.

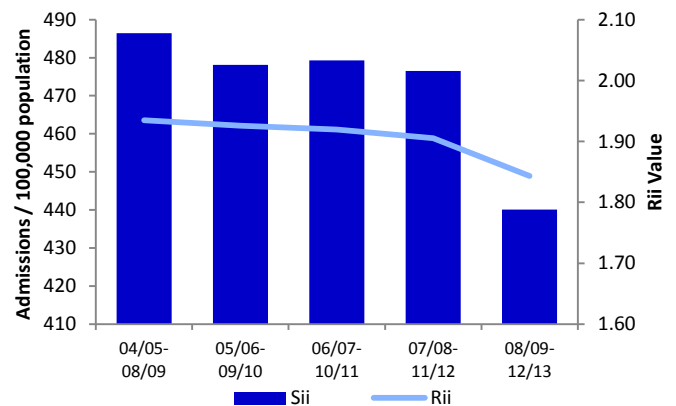
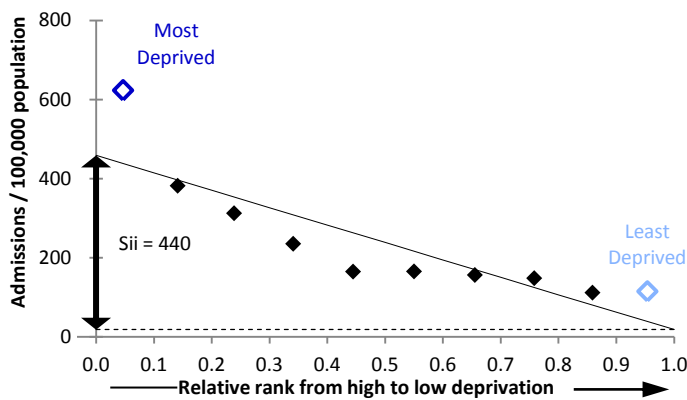
Year	Simple Gap	Sii	Rii
2008-12	4.9 (268%)	5.8	1.79

Unit of Gap Measurement: Deaths per 100,000 population

<sup>31</sup> Readers should note that this is a new indicator within the HSCIMS, and a time-series is not yet available.

### 13.9 Mental Health

#### 13.9.1 Standardised Admission Rate (SAR) – Self-Harm



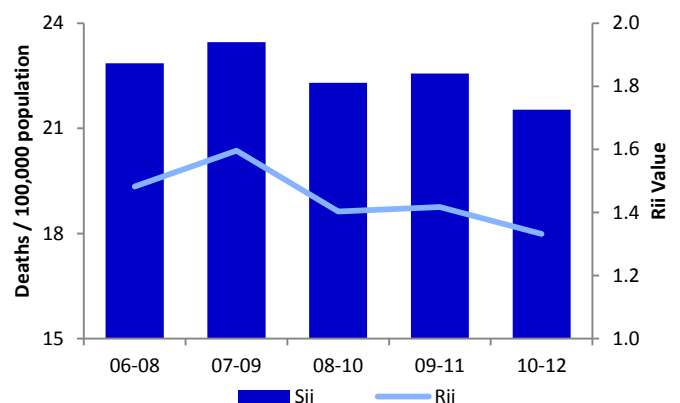
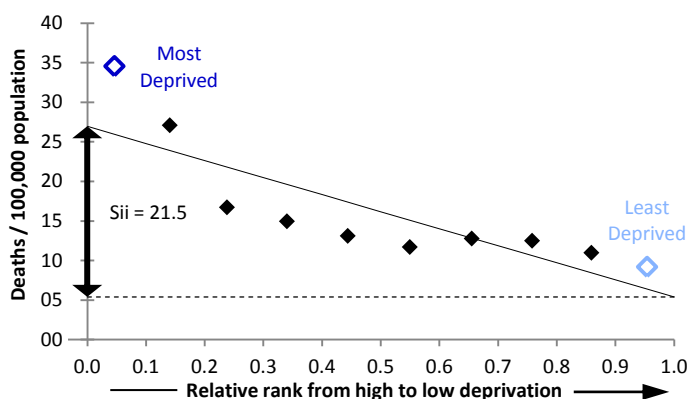
For SAR - Self-Harm, Sii shows an absolute deprivation gap of 440 admissions per 100,000 population.

The Rii was 1.84 in 2008/09-2012/13, and, as with the simple gap analysis, represents a decrease in the proportionate gap from that in 2004/05-2008/09 (1.93) but remains relatively high.

Year	Simple Gap	Sii	Rii
2004/05-2008/09	426 (374%)	486	1.93
2005/06-2009/10	420 (374%)	478	1.93
2006/07-2010/11	421 (371%)	479	1.92
2007/08-2011/12	418 (361%)	477	1.91
2008/09-2012/13	387 (340%)	440	1.84

Unit of Gap Measurement: Admissions per 100,000 population

#### 13.9.2 Suicide Rate



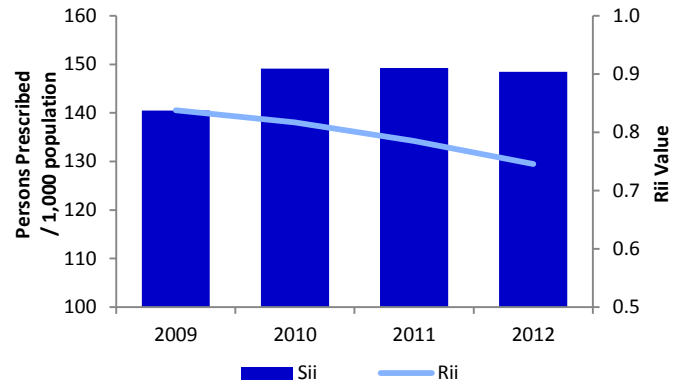
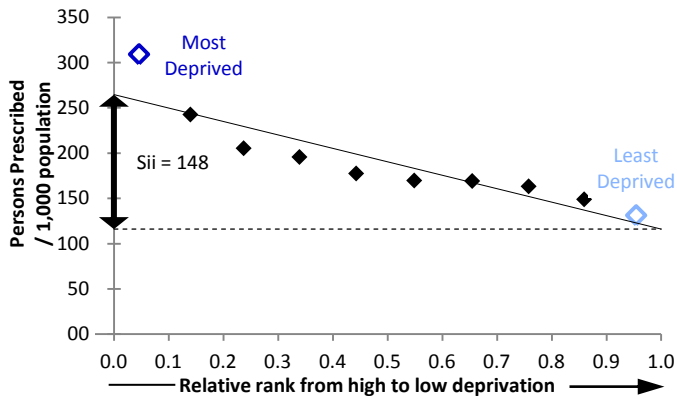
The slope index of inequality for the suicide rate shows an absolute deprivation gap of 21.5 deaths per 100,000 population.

The relative index of inequality shows that the proportionate gap has narrowed since 2006/08 (1.48), to stand at 1.33 in 2010-12, though this may be due to an increase in suicide rate in the areas with lower deprivation levels across the period.

Year	Simple Gap	Sii	Rii
2006-08	19.4 (238%)	22.9	1.48
2007-09	19.3 (276%)	23.5	1.60
2008-10	20.0 (232%)	22.3	1.40
2009-11	21.0 (244%)	22.6	1.42
2010-12	20.6 (204%)	21.5	1.33

Unit of Gap Measurement: Deaths per 100,000 population

### 13.9.3 Standardised Prescription Rate – Mood & Anxiety



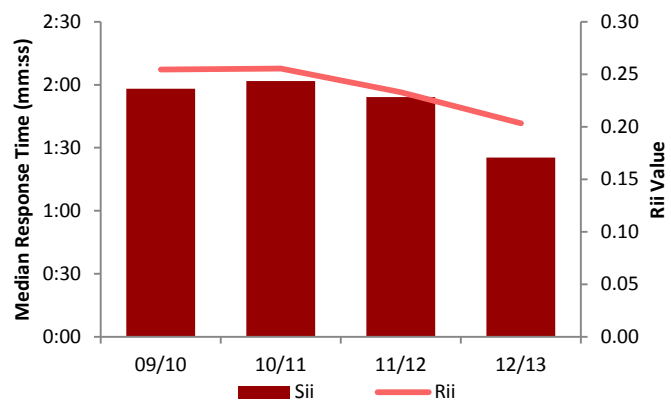
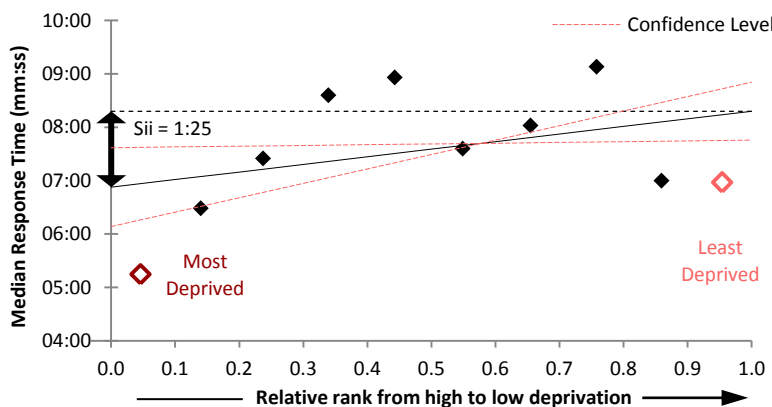
For the standardised prescription rate for mood & anxiety, Sii shows an absolute deprivation gap of 148 persons prescribed per 100,000 population. The Rii shows a downward trend in the proportionate gap since 2009 (0.84), to stand at 0.75 in 2012.

Year	Simple Gap	Sii	Rii
2009	124 (101%)	140	0.84
2010	133 (100%)	149	0.82
2011	133 (96%)	149	0.79
2012	133 (95%)	148	0.75

Unit of Gap Measurement: Persons prescribed per 1,000 population

## 13.10 Public Safety

### 13.10.1 Fire Response Times



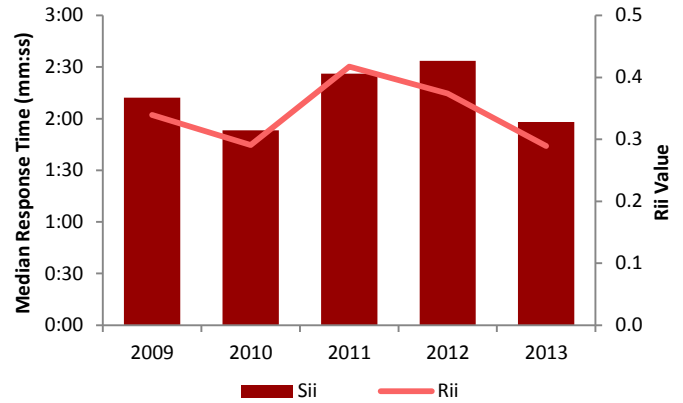
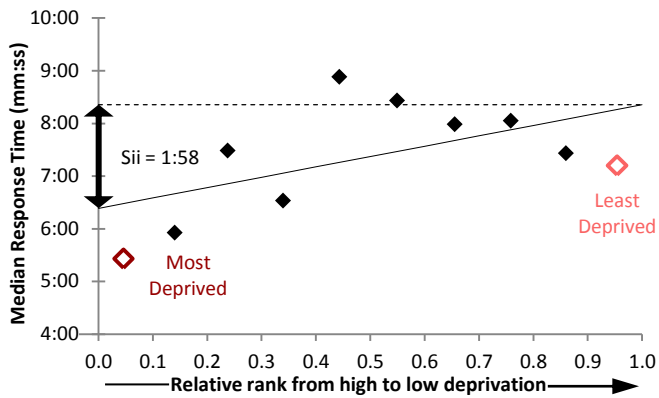
As shown by the regression confidence levels, it is possible to draw a reasonable best fit line through the response times with zero gradient. Therefore the slope index of inequality for fire response times shows no significant gap between the most and least deprived areas.

This supports the conclusion reached using the simple gap analysis that deprivation does not seem to be a factor in response times, which are more heavily impacted by rurality.

Year	Simple Gap	Sii	Rii
09/10	01:44 (22%)	01:58	0.25
10/11	01:46 (22%)	02:02	0.26
11/12	01:54 (23%)	01:54	0.23
12/13	01:19 (19%)	01:25	0.20

Unit of Gap Measurement: minutes: seconds

### 13.10.2 Ambulance Response Times



The slope index of inequality for Ambulance Response Times shows a deprivation gap of 1 minute 58 seconds.

The relative index of inequality showed some fluctuation across the period, standing at 0.29 in 2013.

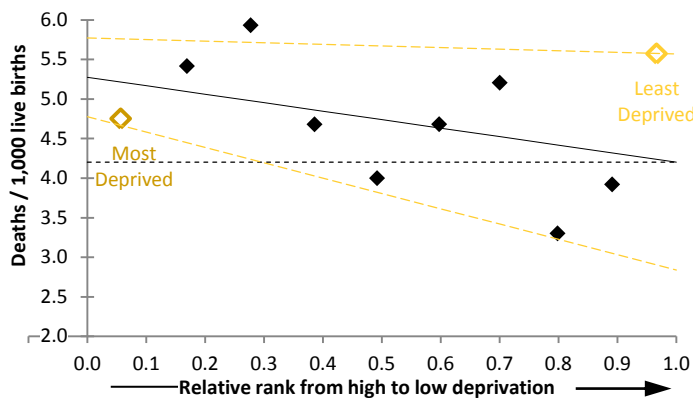
As with Fire Response Times, deprivation seems to be less of a factor than rurality in explaining differences in response times.

Year	Simple Gap	Sii	Rii
2009	01:55 (26%)	02:12	0.34
2010	01:30 (21%)	01:53	0.29
2011	02:02 (30%)	02:26	0.42
2012	02:16 (30%)	02:34	0.37
2013	01:40 (23%)	01:58	0.29

Unit of Gap Measurement: Minutes: Seconds

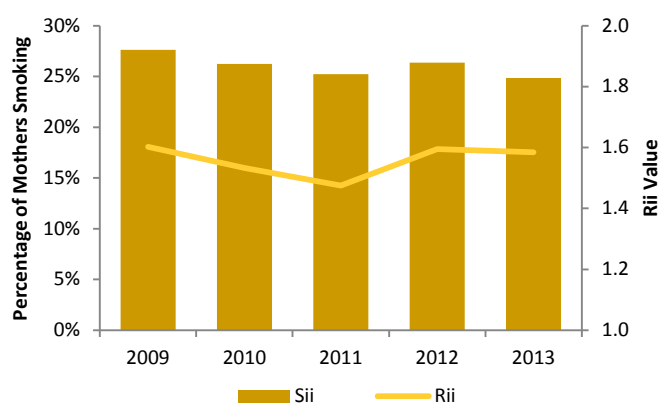
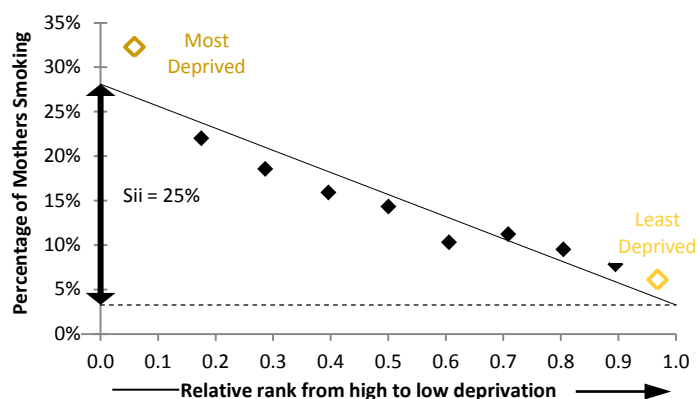
## 13.11 Pregnancy & Early Years

### 13.11.1 Infant Mortality



Due to fluctuations across the deprivation deciles, the slope of index analysis could not determine whether the relative gap in infant mortality had actually decreased, though it was evident that as with the simple gap analysis the level of inequality was low.

### 13.11.2 Smoking During Pregnancy



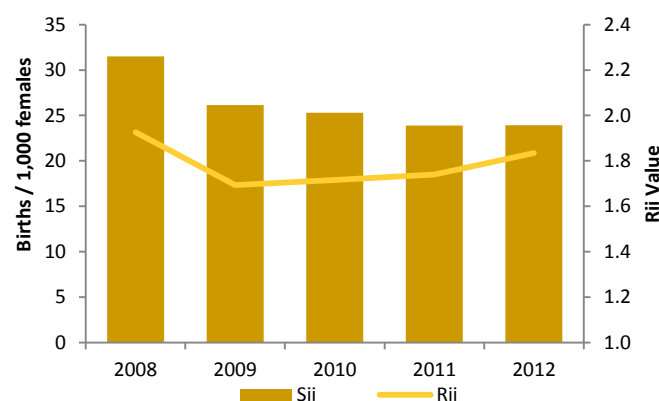
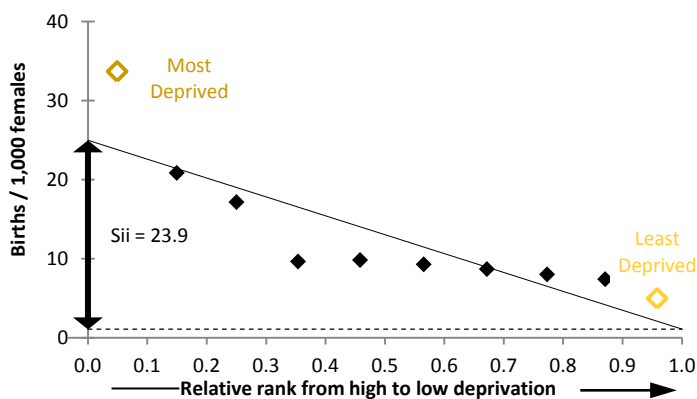
The slope index of inequality shows an absolute deprivation gap of 25% for Smoking During Pregnancy.

This gives a relative gap of 1.58 in 2013, which remained similar to that in 2009 (1.60) despite some fluctuation. The simple gap in contrast showed a decrease over the period.

Year	Simple Gap	Sii	Rii
2009	23% (336%)	28%	1.60
2010	23% (304%)	26%	1.53
2011	21% (246%)	25%	1.47
2012	22% (280%)	26%	1.60
2013	20% (286%)	25%	1.58

Unit of Gap Measurement: Percentage of mothers smoking.

### 13.11.3 Teenage Birth Rate (U20)

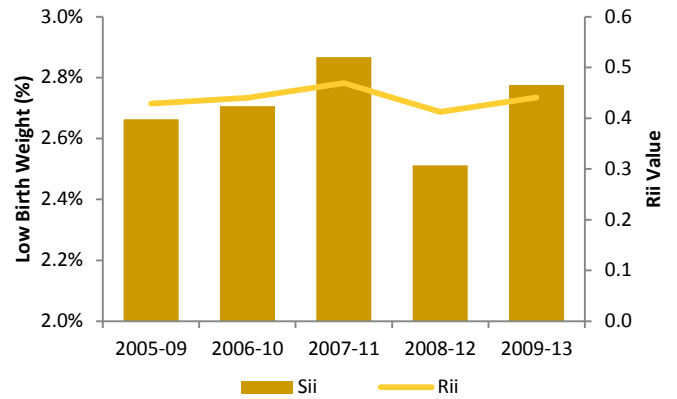
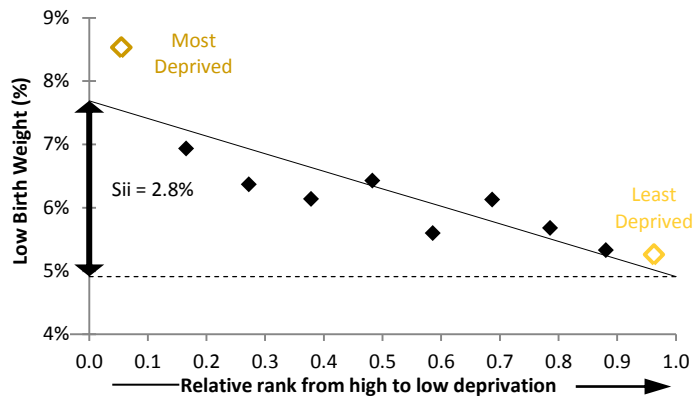


For the teenage birth rate in 2012, Sii shows an absolute deprivation gap across all groups of 23.9 births per 1,000 population, with Rii indicating that this gap was almost double the NI average (1.83). While this is a narrower gap than that in 2008 (1.93), there has been an upwards trend from 1.69 in 2009. The simple gap decreased over the five-year period.

Year	Simple Gap	Sii	Rii
2008	26.6 (384%)	31.5	1.93
2009	23.5 (343%)	26.2	1.69
2010	21.4 (332%)	25.3	1.72
2011	21.8 (361%)	23.9	1.74
2012	20.9 (332%)	23.9	1.83

Unit of Gap Measurement: Births per 1,000 females

13.11.4 Low Birth Weight

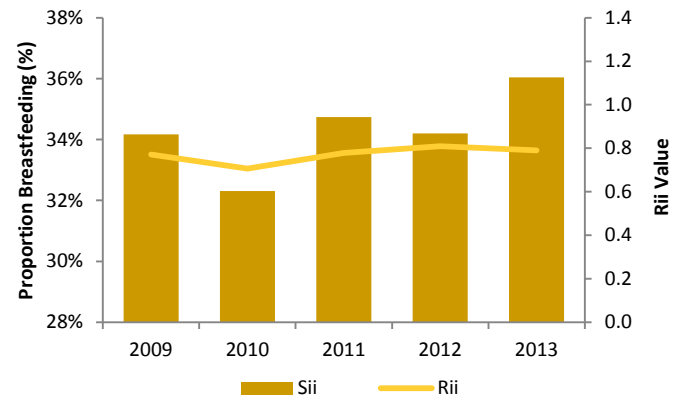
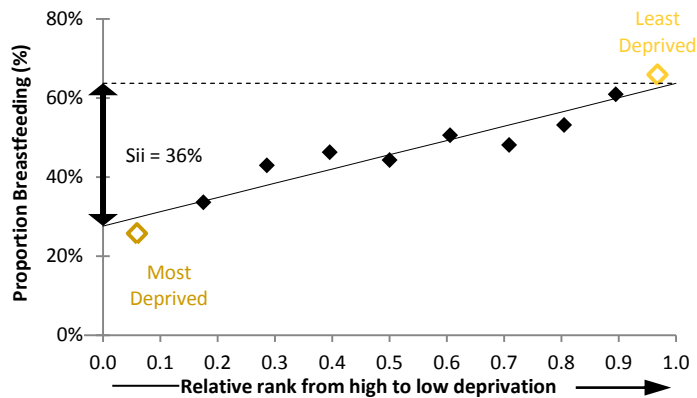


The Sii for Low Birth Weight in 2009-13 stood at 2.8%. While the simple gap has increased over the period (despite some fluctuation), the Rii indicated that the level of inequality remained steady across the period, with a proportionate gap of 0.44 in 2009-13.

Year	Simple Gap	Sii	Rii
2005-09	2.2% (41%)	2.7%	0.43
2006-10	2.2% (42%)	2.7%	0.44
2007-11	2.4% (46%)	2.9%	0.47
2008-12	2.2% (42%)	2.5%	0.41
2009-13	2.4% (46%)	2.8%	0.44

Unit of Gap Measurement: Percentage of live births under 2,500g

13.11.5 Breastfeeding on Discharge



The Breastfeeding on Discharge slope index of inequality shows an absolute gap between the most and least deprived of 36%. This gives a relative gap of 0.79 in 2013, similar to that in 2009, although the simple gap suggests a slight widening over the same period.

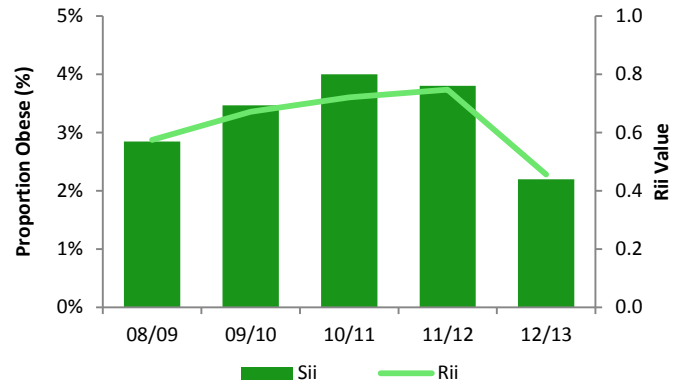
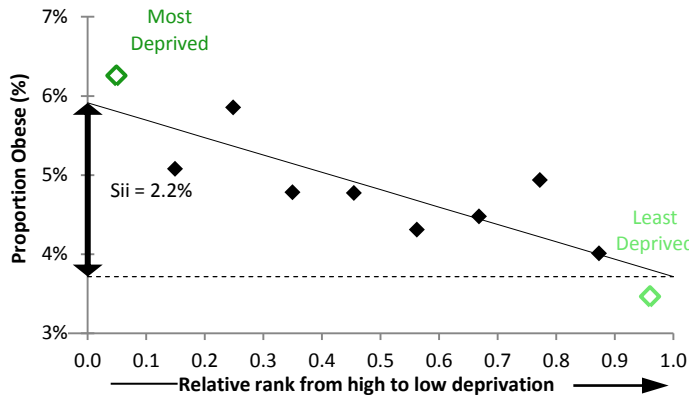
Year	Simple Gap	Sii	Rii
2009	29% (49%)	34%	0.77
2010	28% (46%)	32%	0.71
2011	31% (51%)	35%	0.78
2012	30% (52%)	34%	0.81
2013	34% (53%)	36%	0.79

Unit of Gap Measurement: Proportion breastfeeding



### 13.12 Diet & Dental Health

#### 13.12.1 Childhood Obesity - Primary 1

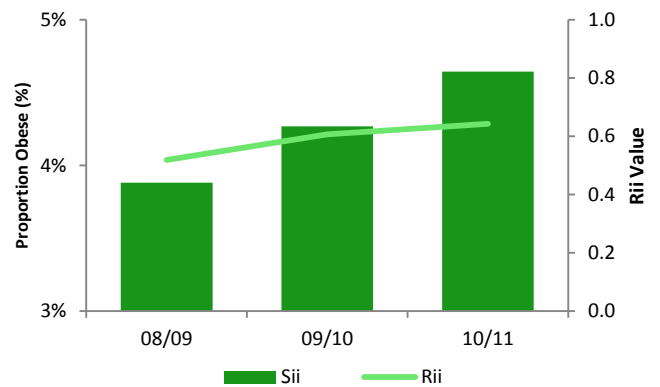
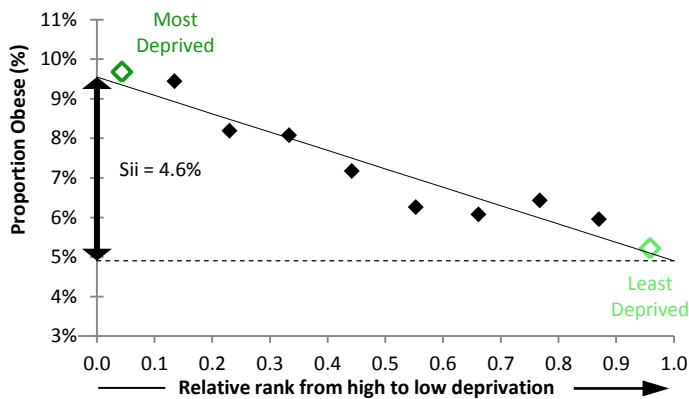


The Sii for childhood obesity among primary 1 children in 2012/13 shows an absolute deprivation gap of 2.2%. Despite an increase in the Rii between 2008/09 (0.58) and 2011/12 (0.75), the proportionate gap narrowed sharply in 2012/13 (0.46).

Year	Simple Gap	Sii	Rii
2008/09	2.6% (76%)	2.8%	0.58
2009/10	3.1% (88%)	3.5%	0.67
2010/11	4.3% (125%)	4.0%	0.72
2011/12	3.7% (135%)	3.8%	0.75
2012/13	1.9% (50%)	2.2%	0.46

Unit of Gap Measurement: Proportion obese (%)

#### 13.12.2 Childhood Obesity – Year 8



The Year 8 Childhood Obesity slope index of inequality shows an absolute gap of 4.6%.

Though the simple gap shows a slight narrowing of the gap between the 20% most and least deprived quintiles over the period, the relative index of inequality indicates an increase in the proportionate gap from 0.52 in 2010/11 to 0.64 in 2012/13.

Year	Simple Gap	Sii	Rii
2010/11	4.0% (74%)	3.9%	0.52
2011/12	3.1% (57%)	4.3%	0.61
2012/13	3.9% (70%)	4.6%	0.64

Proportion obese (%)

### 13.13 Indicators Ranked by Deprivation Inequality

The relative index of inequality (Rii) allows the size of the inequality between indicators of varying units to be compared and ranked. It is worth noting, however, that this method does not account for differences between the relative importance of these inequality gaps. For example, life expectancy gives a relatively low relative index of inequality value for both genders, but reducing this gap is still considered a high priority for government as a small gap can represent several years of life lost by each individual.

The relative slope of index indicates that, out of all the indicators analysed, alcohol related admissions show the highest level of inequality, with the absolute gap between the most and least deprived 2.08 times the regional average.

Admission and death rates from causes relating to drug and alcohol use all showed high levels of inequality across the population, alongside the self harm admission rate, teenage birth rate and smoking during pregnancy.

The table below shows all indicators where the deprivation gradient was analysed ranked according to their relative index of inequality, with an indication whether relative and simple gaps widened or narrowed significantly over the analysed period.

#### Key

◀▶ Widened

- No change / no clear trend

▶◀ Narrowed

Indicator	Simple Gap	Rii	Indicator	Simple Gap	Rii
1 Std. Admission Rate - Alcohol	▶◀ 2.08 ▶◀		21 Std. Admission Rate - Respiratory	- 0.70 -	
2 Std. Admission Rate - Self Harm	▶◀ 1.84 ▶◀		22 Std. Death Rate - Cancer (U75)	◀▶ 0.70 -	
3 Teenage Birth Rate	▶◀ 1.83 -		23 Std. Admission Rate - Emergency	- 0.65 -	
4 Std. Death Rate - Drugs	▶◀ 1.82 ▶◀		24 Y8 Obesity	▶◀ 0.64 ▶◀	
5 Std. Death Rate - Alcohol	▶◀ 1.80 ▶◀		25 P1 Obesity	▶◀ 0.46 ▶◀	
6 Std. Admission Rate – Drugs related mental health and behavioural disorders.	▶◀ 1.79 ▶◀		26 Low Birth Weight	◀▶ 0.44 -	
7 Std. Death Rate - Drugs Misuse	- 1.79 -		27 All Age All Cause Mortality - Male	◀▶ 0.43 ▶◀	
8 Smoking During Pregnancy	▶◀ 1.58 -		28 All Age All Cause Mortality - Female	◀▶ 0.33 -	
9 Std. Death Rate - Respiratory U75	◀▶ 1.42 ▶◀		29 Std. Admission Rate - All	◀▶ 0.32 ▶◀	
10 Suicide Rate	▶◀ 1.33 ▶◀		30 Std. Prescription Rate - Statins	◀▶ 0.32 ▶◀	
11 Std. Death Rate - Lung Cancer	◀▶ 1.24 -		31 Ambulance Response Time	- 0.29 -	
12 Std. Incidence Rate - Lung Cancer	- 1.22 -		32 Std. Admission Rate - Elective	◀▶ 0.27 ▶◀	
13 Std. Death Rate - Preventable	◀▶ 1.21 -		33 Std. Admission Rate - Circulatory (All Ages)	▶◀ 0.25 ▶◀	
14 Std. Death Rate - Circulatory (U75)	- 1.09 -		34 Std. Incidence Rate - Cancer	◀▶ 0.25 -	
15 Std. Death Rate - Avoidable	◀▶ 1.07 -		35 Std. Prescription Rate – Antihypertensive	◀▶ 0.25 ▶◀	
16 Std. Death Rate - Amenable	- 0.99 -		36 Infant Mortality	▶◀ 0.23 -	
17 Std. Death Rate - Smoking	◀▶ 0.98 ▶◀		37 Fire Response Time	- 0.20 -	
18 Potential Years of Life Lost	▶◀ 0.97 ▶◀		38 Std. Admission Rate - Day Cases	◀▶ 0.20 ▶◀	
19 Breastfeeding on Discharge	◀▶ 0.79 -		39 Life Expectancy - Male	- 0.11 -	
20 Std. Prescription Rate - Mood & Anxiety	▶◀ 0.75 ▶◀		40 Life Expectancy – Female	- 0.06 -	

# Appendices

## Sources

**Table A1 Indicators and Supplementary Information**

Information	Source
Deaths and births	General Register Office
Hospital Admissions	Information Analysis Directorate, DHSSPS
Prescriptions / Dental Statistics	Business Services Organisation
Cancer Incidence	NI Cancer Registry
Smoking in pregnancy, breastfeeding, low birth weight and childhood obesity	Child Health System, Public Health Agency
Quality and Outcomes Framework Prevalence Data	Information Analysis Directorate, DHSSPS
Fire response times	NI Fire and Rescue Service
Ambulance response times	NI Ambulance Service
NI Health Survey	Information Analysis Directorate, DHSSPS
Continuous Household Survey	Northern Ireland Statistics and Research Agency (NISRA)
NI Small Area Population Estimates	Northern Ireland Statistics and Research Agency (NISRA)
European Standard Population (ESP) 2013	Eurostat
Deprivation classification	NI Multiple Deprivation Measure 2010 (NISRA)
Urban-rural classification	"Report of the Inter-Departmental Urban-Rural Definition Group", NISRA 2005

## Indicators

*Disease classification* – The indicators below are classified using the International Classification of Disease, 10<sup>th</sup> revision (ICD-10). For a listing of ICD-10 codes see International Classification of Diseases for Oncology, 4<sup>th</sup> Edition, World Health Organisation, Geneva, 2012 [www.who.int/classifications/apps/icd/icd10online/](http://www.who.int/classifications/apps/icd/icd10online/).

### LIFE EXPECTANCY

*Life expectancy* – The expected years of life at time of birth based on mortality patterns in the period in question. It is based on the average death rates over a three year period. Presented separately for males and females.

*Healthy Life Expectancy (HLE)* – This is the average number of years a person can expect to live in good health. HLE provides an estimate of lifetime spent in ‘Very Good’ or ‘Good’ health, calculated using respondents’ perception of their own health according to the Health Survey Northern Ireland<sup>32</sup>.

*Disability Free Life Expectancy (DFLE)* – This is the average number of years a person can expect to live disability free. DFLE provides an estimate of lifetime spent free from a limiting persistent (twelve months or more) illness or disability, based upon a self-rated functional assessment of health recorded in the Health Survey Northern Ireland<sup>33</sup>.

*Standardised Death Rate (SDR) All Age All Cause (AAAC)* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) of all deaths regardless of age to the 2013 ESP.

### PREMATURE DEATHS

*Potential Years of Life Lost (PYLL)* – This is a summary measure of premature mortality which provides an explicit way of weighting deaths occurring at younger ages, which are, a priori, preventable. PYLL uses the average age-specific life expectancy for each five year age band as the age to which a person in that age band might be expected to live. The calculation of PYLL involves summing up deaths occurring at each age and multiplying this with the number of years a person of that age could have been expected to live.

*Standardised Death Rate (SDR) due to Amenable causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to amenable causes to the 2013 ESP. The various causes of death (ICD-10 classification) and associated age bands considered to be amenable to medical intervention are set out in Table A2.

*Standardised Death Rate (SDR) due to Preventable causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to preventable causes to the 2013 ESP. The various causes of death (ICD-10 classification) and associated age bands considered to be preventable by broad public health interventions are set out in Table A2.

*Standardised Death Rate (SDR) due to Avoidable causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to avoidable to the 2013 ESP. Avoidable causes of death are all those defined as preventable, amenable or both. The various causes of death (ICD-10 classification) and associated age bands considered to be avoidable are set out in Table A2.

<sup>32</sup> [http://www.dhsspsni.gov.uk/index/stats\\_research/stats-public-health.htm](http://www.dhsspsni.gov.uk/index/stats_research/stats-public-health.htm)

<sup>33</sup> [http://www.dhsspsni.gov.uk/index/stats\\_research/stats-public-health.htm](http://www.dhsspsni.gov.uk/index/stats_research/stats-public-health.htm)

## CIRCULATORY DISEASE

*Standardised Admission Rate (SAR) due to Circulatory disease* – This inequality comparison takes account of the different age-sex profiles in different areas. Three years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Circulatory admissions are classified using the ICD-10 codes I00-I99.

*Standardised Death Rate (SDR) under 75 years due to Circulatory disease* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to circulatory disease to the 2013 ESP. Circulatory deaths are classified using the ICD-10 codes I00-I99.

*Standardised Prescription rate of Anti-hypertensive drugs* – This is a comparison of the rate of people for whom anti-hypertensive drugs have been dispensed. This comparison takes account of the different age-sex profiles in different areas and results are standardised using the direct method to the 2013 ESP. The prescription data is extracted from the Electronic Prescribing Eligibility System (EPES), which allows the calculation of age standardised rates. The data provided only covers drugs dispensed in primary care and includes prescriptions issued by all types of prescribers including doctors, nurses and dentists, and all those issued and dispensed by pharmacists, dispensing doctors and appliance suppliers. Drugs prescribed and dispensed in hospital cannot be captured centrally due to the use of different IT systems. Drugs included are coded 2.2.1, 2.4, 2.5.5.1, 2.5.5.2 and 2.6.2 in the British National Formulary (BNF).

*Standardised Prescription rate of Statin drugs* – This is a comparison of the rate of people for whom statins have been dispensed. This comparison takes account of the different age-sex profiles in different areas and results are standardised using the direct method to the 2013 ESP. The prescription data is extracted from the Electronic Prescribing Eligibility System (EPES), which allows the calculation of age standardised rates. The data provided only covers drugs dispensed in primary care and includes prescriptions issued by all types of prescribers including doctors, nurses and dentists, and all those issued and dispensed by pharmacists, dispensing doctors and appliance suppliers. Drugs prescribed and dispensed in hospital cannot be captured centrally due to the use of different IT systems. Drugs included are coded 2.12 in the British National Formulary (BNF).

## RESPIRATORY DISEASE

*Standardised Admission Rate (SAR) due to Respiratory disease* – This inequality comparison takes account of the different age-sex profiles in different areas. Three years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Respiratory admissions are classified using the ICD-10 codes J00-J99.

*Standardised Death Rate (SDR) under 75 years due to Respiratory disease* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to respiratory disease to the 2013 ESP. Respiratory deaths are classified using the ICD-10 codes J00-J99.

## CANCER

*Standardised Incidence Rate (SIR) for Cancer* – This inequality comparison takes account of the different age-sex profiles in different areas. Seven years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Cancer deaths are classified using the ICD-10 codes C00-C97. For cancer incidence however, non-melanoma skin cancer (C44) has been excluded. This is due to the fact that non-melanoma skin cancer is quite common, in most cases easily treated and rarely fatal. Cancer incidence numbers are derived from the NI Cancer Registry's "live" database, which means the database is continuously updated. As a result, an earlier extract or an extract taken at a later date may supply slightly different results. Therefore, although the overall trend will be the same, previously published data and data published elsewhere may have rates that vary slightly to what is published here.

*Standardised Incidence Rate (SIR) for Lung Cancer* – This inequality comparison takes account of the different age-sex profiles in different areas. Seven years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Lung cancer is classified using the ICD-10 codes C33-C34. Cancer incidence numbers are derived from the NI Cancer Registry's "live" database, which means the database is continuously updated. As a result, an earlier extract or an extract taken at a later date may supply slightly different results. Therefore, although the overall trend will be the same, previously published data and data published elsewhere may have rates that vary slightly to what is published here.

*Standardised Death Rate (SDR) under 75 years due to Cancer* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to cancer to the 2013 ESP. Cancer deaths are classified using the ICD-10 codes C00-C97.

*Standardised Death Rate (SDR) due to Lung Cancer* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to lung cancer to the 2013 ESP. Lung cancer is classified using the ICD-10 codes C33 and C34.

### **ALCOHOL, SMOKING & DRUGS**

*Standardised Admission Rate (SAR) due to Alcohol related causes* – This is a comparison of alcohol related admission rates in an area with Northern Ireland as a whole. This comparison takes account of the different age-sex profiles in different areas. Three years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Alcohol related admissions are classified using the ICD-10 codes set out in Table A3.

*Standardised Death Rate (SDR) due to Alcohol related causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to alcohol related causes to the 2013 ESP. Alcohol related deaths are classified using the ICD-10 codes set out in Table A4.

*Standardised Death Rate (SDR) due to Smoking related causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to smoking related causes to the 2013 ESP. The proportion of each cause of death that can be attributed to smoking is set out in Table A5.

*Standardised Admission Rate (SAR) due to Drug related causes* – This is a comparison of drug related admission rates in an area with Northern Ireland as a whole. This comparison takes account of the different age-sex profiles in different areas. Three years have been aggregated to provide robust results and results are standardised using the direct method to the 2013 ESP. Drug related admissions are classified using the ICD-10 codes set out in Table A6.

*Standardised Death Rate (SDR) due to Drug related causes* – This is calculated by standardising (using the direct method) the average death rate in Northern Ireland (over a five year period) due to drug related causes to the 2013 ESP. Drug related deaths are classified using the ICD-10 codes set out in Table A7.

*Deaths due to Drug Misuse* – Deaths due to drug misuse in Northern Ireland are defined using the UK definition which includes 'deaths where the underlying cause is poisoning, drug abuse or drug dependence and where any of the substances controlled under the Misuse of Drugs Act (1971) are involved'. Data for five years have been aggregated in order to provide robust results. Deaths due to drug misuse are classified using the ICD-10 codes set out in Table A8.

## MENTAL HEALTH

*Standardised Admission Rate (SAR) for self-harm* – A comparison of the directly standardised admission rate for self-harm in an area to Northern Ireland as a whole. This comparison takes account of the different age-sex profiles in different areas. Data for five years have been aggregated to provide robust results and results are standardised to the 2013 ESP. This indicator was developed to complement the suicide information. However it does not provide a complete picture of the problem of self-harm (or parasuicide) as in many instances, self-harm does not result in admission to hospital. Admissions for self-harm are classified using the ICD-10 codes X60-84 and Y87.0.

*Crude Suicide Rate* – Suicides deaths in Northern Ireland are defined using the UK definition which includes deaths from Self-inflicted Injury (International Classification of Disease (ICD-10) codes X60-X84, Y87.0) as well as Events of Undetermined Intent (ICD-10 codes Y10-Y34, Y87.2). Data for three years have been aggregated in order to provide robust results. The suicide rates are not age standardised as, previously, it was found to make little or no difference whilst introducing a new confidence interval.

*Standardised Prevalence Rate for Mood and Anxiety disorders* – The number of individuals suffering from mood or anxiety disorders is estimated using prescription data extracted from the Electronic Prescribing Eligibility System (EPES), which allows the calculation of age standardised rates (using the direct method and standardising to the 2013 ESP). Drugs included in Mood & Anxiety Disorders are coded 4.1.2 and 4.3 in the British National Formulary (BNF).

## HOSPITAL ADMISSIONS

*Standardised Admission Rates (SAR) to hospital for ALL, Emergency, Elective and Day case admissions* – A comparison of the admission rate for all admissions within the Acute Services Programme of Care in an area to Northern Ireland as a whole. All mental health specialities have been excluded. This is standardised using the direct method to the 2013 ESP and is calculated for all admissions, emergency admissions only, elective admissions only and day case admissions only.

Note that ALL admissions includes elective admissions, day case admissions, emergency admissions and transfers between hospitals.

## PUBLIC SAFETY

*Median fire response times* – The time taken by the Northern Ireland Fire and Rescue Service (NIFRS) to respond to each incident is used as the basis of the analysis. The 'response time' is measured as the 'time of the call to NIFRS Regional Control Centre' to 'the time the 1<sup>st</sup> Appliance books in attendance' at the incident. In relation to the 1<sup>st</sup> appliance, NIFRS Emergency Response Standards are categorised by attendance to High (6 minutes), Medium (12 minutes) and Low (21 minutes). Response Areas as determined by a dwelling Risk Analysis. The median i.e. midpoint value is reported rather than the simple average as it is unaffected by atypically long or short response times.

*Median ambulance response times* – The time taken by the first ambulance to respond to each incident is used as the basis of the analysis. The median i.e. midpoint value is reported rather than the simple average as it is unaffected by atypically long or short response times. The calculations are based on the results from one month (August).

## **PREGNANCY & EARLY YEARS**

*Infant mortality rates* – The number of infant deaths per 1,000 live births. Infant deaths relate to all deaths in the first year of life.

*Smoking during pregnancy* – This is the proportion of all live births that were to mothers that reported smoking during pregnancy (taken from the Child Health System). As this indicator is self-reported, it may be subject to a degree of under-reporting.

*Teenage birth rates* – This crude rate is the number of births in an area to teenage mothers (i.e. between 13 and 19 years of age) expressed per 1,000 females. Figures are an average of three years data.

*Low birth weight* - This is the proportion of all live births where the birth weight of the child was less than 2500g (taken from the Child Health System).

*Breastfeeding on discharge from hospital* – Information on the proportion of mothers that were breastfeeding their child on discharge from hospital extracted from the Child Health System. The figures include mothers that were breastfeeding their child but also using complementary feeding as well.

## **DIET & DENTAL HEALTH**

*Childhood Obesity* – Information on the proportion of children who are classified as obese, extracted from the Child Health System (CHS). The information relates to the height and weight information of Primary 1 pupils (who were aged between 4.5 and 5.5 years at the time of measurement) and Year 8 pupils (who were aged between 11.5 and 12.5 years at the time of measurement). The height and weight information is converted into a Body Mass Index (BMI) score for each pupil. The BMI can be categorized using International Growth Charts which consider age and gender, allowing those who are either overweight or obese to be identified. Deprivation classifications are now analysed using the home postcode of the child, which is a more accurate measurement than school post code which was used in the analysis for previous reports.

*Standardised dental registration* – This is a measure of how much more (or less) likely an individual is to be registered with a dentist in a specific geographic area compared with the Northern Ireland average having taken into account the area's age and gender profile. This is standardised to the Medical Registration population using the indirect method.



## Background Notes

### 2.2 – Healthy Life Expectancy

In 2010, the data source was changed from the Continuous Household Survey (CHS) to the Health Survey Northern Ireland (HSNI). As self-reports of health tend to be generally lower in health surveys compared with general household surveys, this change in source may explain the slight decline in the prevalence of very good and good general health in recent years. The full impact of this change is apparent in the period 2010-12, where health data for all years for the period have been derived from the HSNI.

### 2.3 – Disability Free Life Expectancy

In 2010, the data source was changed from the Continuous Household Survey (CHS) to the Health Survey Northern Ireland (HSNI). As self-reports of health tend to be generally lower in health surveys compared with general household surveys, this change in source may explain the slight increase in the prevalence of limiting chronic illness in recent years. The full impact of this change is apparent in the period 2010-12, where health data for all years for the period have been derived from the HSNI.

## ICD – 10 tables

**Table A2: Amenable, Preventable & Avoidable Causes**

The table below lists the ICD-10 codes of all causes of death considered avoidable, with indication as to which are considered amenable, preventable or both.

Condition group and cause	ICD-10 codes	Age	Amenable	Preventable
<b>Infections</b>				
Tuberculosis	A15-A19, B90	0-74	•	•
Selected invasive bacterial and protozoal infections	A38-A41, A46, A48.1, B50-B54, G00, G03, J02, L03	0-74	•	
Hepatitis C	B17.1, B18.2	0-74	•	•
HIV/AIDS	B20-B24	All	•	•
<b>Neoplasms</b>				
Malignant neoplasm of lip, oral cavity and pharynx	C00-C14	0-74		•
Malignant neoplasm of oesophagus	C15	0-74		•
Malignant neoplasm of stomach	C16	0-74		•
Malignant neoplasm of colon and rectum	C18-C21	0-74	•	•
Malignant neoplasm of liver	C22	0-74		•
Malignant neoplasm of trachea, bronchus and lung	C33-C34	0-74		•
Malignant melanoma of skin	C43	0-74	•	•
Mesothelioma	C45	0-74		•
Malignant neoplasm of breast	C50	0-74	•	•
Malignant neoplasm of cervix uteri	C53	0-74	•	•
Malignant neoplasm of bladder	C67	0-74	•	
Malignant neoplasm of thyroid gland	C73	0-74	•	
Hodgkin's disease	C81	0-74	•	
Leukaemia	C91, C92.0	0-44	•	
Benign neoplasms	D10-D36	0-74	•	
<b>Nutritional, endocrine and metabolic</b>				
Diabetes mellitus	E10-E14	0-49	•	•
<b>Drug use disorders</b>				
Alcohol related diseases, excluding external causes	F10, G31.2, G62.1, I42.6, K29.2, K70, K73, K74 (excl. K74.3-K74.5), K86.0	0-74		•
Illicit drug use disorders	F11-F16, F18-F19	0-74		•
<b>Neurological disorders</b>				
Epilepsy and status epilepticus	G40-G41	0-74	•	

Condition group and cause	ICD-10 codes	Age	Amenable	Preventable
<b>Cardiovascular diseases</b>				
Rheumatic and other valvular heart disease	I01-I09	0-74	•	
Hypertensive diseases	I10-I15	0-74	•	
Ischaemic heart disease	I20-I25	0-74	•	•
DVT with pulmonary embolism	I26, I80.1-I80.3, I80.9, I82.9	0-74		•
Cerebrovascular diseases	I60-I69	0-74	•	
Aortic aneurysm and dissection	I71	0-74		•
<b>Respiratory diseases</b>				
Influenza (including swine flu)	J09-J11	0-74	•	•
Pneumonia	J12-J18	0-74	•	
Chronic obstructive pulmonary disorder	J40-J44	0-74		•
Asthma	J45-J46	0-74	•	
<b>Digestive disorders</b>				
Gastric and duodenal ulcer	K25-K28	0-74	•	
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis/lithiasis, pancreatitis, hernia	K35-K38, K40-K46, K80-K83, K85, K86.1-K86.9, K91.5	0-74	•	
<b>Genitourinary disorders</b>				
Nephritis and nephrosis	N00-N07, N17-N19, N25-N27	0-74	•	
Obstructive uropathy and prostatic hyperplasia	N13, N20-N21, N35, N40, N99.1	0-74	•	
<b>Maternal and infant</b>				
Complications of perinatal period	P00-P96, A33	All	•	
Congenital malformations, deformations and chromosomal anomalies	Q00-Q99	0-74	•	
<b>Unintentional injuries</b>				
Transport Accidents	V01-V99	All		•
Accidental Injury	W00-X59	All		•
<b>Intentional injuries</b>				
Suicide and self inflicted injuries	X60-X84, Y10-Y34	All		•
Homicide/Assault	X85-Y09, U50.9	All		•
Misadventures to patients during surgical and medical care	Y60-Y69, Y83-Y84	All	•	•

**Table A3: Admissions - Alcohol Related Causes**

ICD-10 code	Description
E24.4	Alcohol induced Pseudo-Cushing's syndrome
E51.2	Wernicke's Encephalopathy
F10	Mental and Behavioural disorders due to use of alcohol
G31.2	Degeneration of the nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K70	Alcoholic liver disease
K86.0	Alcohol-induced chronic pancreatitis
O35.4	Maternal care for (suspected) damage to foetus from alcohol
P04.3	Foetus and newborn affected by maternal use of alcohol
Q86.0	Foetal alcohol syndrome (dysmorphic)
T51.0	Toxic effect of ethanol
T51.1	Toxic effect of methanol
T51.9	Toxic effect of alcohol, unspecified
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol, undetermined intent
Y57.3	Alcohol deterrents
Y90	Evidence of alcohol involvement determined by blood alcohol level
Y91	Evidence of alcohol involvement determined by level intoxication
Z50.2	Alcohol rehabilitation
Z71.4	Alcohol abuse counselling and surveillance
Z72.1	Alcohol use

**Table A4: Deaths - Alcohol Related Causes**

ICD-10 code	Description
F10	Mental and Behavioural disorders due to use of alcohol
G31.2	Degeneration of the nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K70	Alcoholic liver disease
K73	Chronic hepatitis, not elsewhere defined
K74	Fibrosis and cirrhosis of liver ( Excluding K74.3-K74.5-Biliary cirrhosis)
K86.0	Alcohol induced chronic pancreatitis
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol, undetermined intent

**Table A5: Deaths - Smoking Related Causes**

Cause of Death	ICD-10 code	Attributable Percentage	
		Men	Women
<b>Cancer</b>			
Lung	C33 – C34	90%	79%
Upper respiratory	C32, C14.0	77%	58%
Oesophagus	C15	70%	72%
Bladder	C67	49%	20%
Kidney	C64	41%	7%
Stomach	C16	35%	10%
Pancreas	C25	26%	30%
Unspecified site	C80	33%	7%
Myeloid Leukaemia	C92	19%	10%
<b>Respiratory</b>			
Chronic obstructive lung disease	J44	87%	83%
Pneumonia 35-64	J18	33%	53%
Pneumonia 65+	J18	23%	13%
<b>Circulatory</b>			
Ischaemic heart disease 35-54	I20-I25	55%	63%
Ischaemic heart disease 55-64	I20-I25	41%	36%
Ischaemic heart disease 65-74	I20-I25	25%	18%
Ischaemic heart disease 75+	I20-I25	9%	5%
Cerebrovascular disease 35-54	I60-I69	56%	53%
Cerebrovascular disease 55-64	I60-I69	33%	38%
Cerebrovascular disease 65-74	I60-I69	16%	31%
Cerebrovascular disease 75+	I60-I69	4%	2%
Aortic Aneurysm	I71	64%	66%
Myocardial Degeneration	I51.5	27%	18%
Atherosclerosis	I70	21%	21%
<b>Digestive</b>			
Stomach/Duodenum Ulcer	K25-K26	53%	59%
<b>Disease Prevented by Smoking</b>			
Parkinson's Disease	G20	-51%	-30%
Endometrial Cancer	C54	N/A	-16%

**Table A6: Admissions - Drugs related mental health & behavioural disorders - Related Causes**

ICD-10 code*	Description
F11	Mental and Behavioural disorders due to use of opioids
F12	Mental and Behavioural disorders due to use of cannabinoids
F13	Mental and Behavioural disorders due to use of sedatives or hypnotics
F14	Mental and Behavioural disorders due to use of cocaine
F15	Mental and Behavioural disorders due to use of other stimulants including caffeine
F16	Mental and Behavioural disorders due to use of hallucinogens
F18	Mental and Behavioural disorders due to use of volatile solvents
F19	Mental and Behavioural disorders due to multiple drug use and use of other psychoactive substances

\*Primary or secondary diagnosis only.

**Table A7: Deaths - Drug Related Causes**

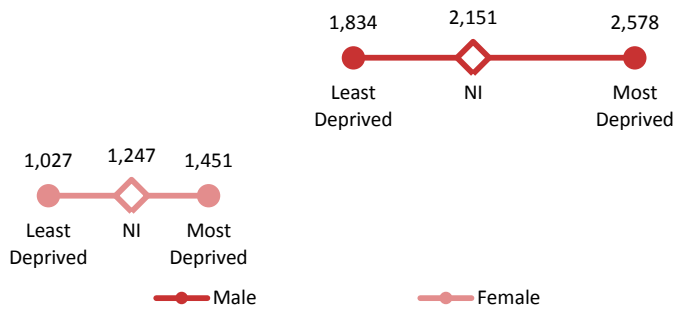
ICD-10 code	Description
F11-16, F18-F19	Mental and Behavioural disorders due to drug use (excluding alcohol and tobacco)
X40-44	Accidental poisoning by drugs, medicaments and biological substances
X60-X64	Intentional self-poisoning by drugs, medicaments and biological substances
X85	Assault by drugs, medicaments and biological substances
Y10-14	Poisoning by drugs, medicaments and biological substances, undetermined intent

**Table A8: Deaths due to Drug Misuse**

ICD-10 code	Description
F11-16, F19	Mental and Behavioural disorders due to drug use (excluding alcohol, tobacco and volatile substances)
Deaths due to the following categories <b>and</b> where a drug controlled under the Misuse of Drugs Act 1971 was mentioned;	
X40-44	Accidental poisoning by drugs, medicaments and biological substances
X60-X64	Intentional self-poisoning by drugs, medicaments and biological substances
X85	Assault by drugs, medicaments and biological substances
Y10-14	Poisoning by drugs, medicaments and biological substances, undetermined intent

## 5.5 Standardised Admission Rate (SAR) – Circulatory (U75)

### SAR - Circulatory by Gender & Deprivation, 2010/11-2012/13



The admission rate due to circulatory disease for males under 75 years old was 2,151 per 100,000 population, almost three quarters higher than that for females (1,247 admissions per 100,000 population).

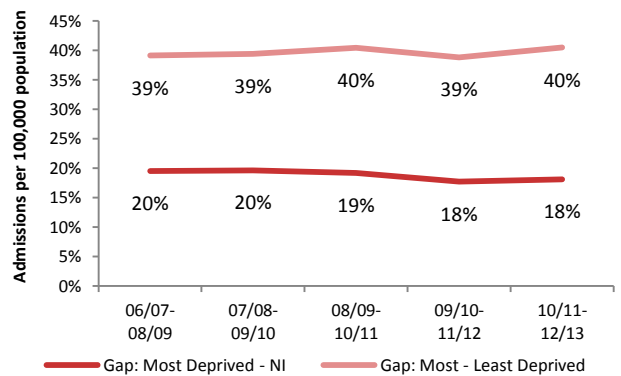
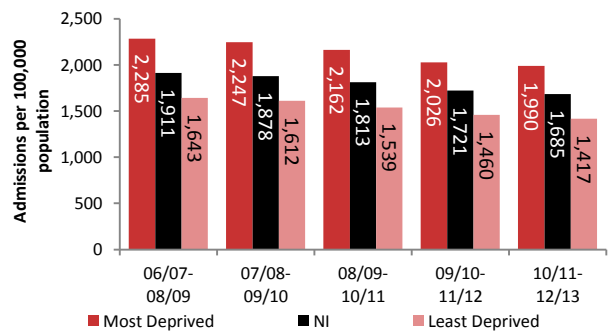
Within the most deprived areas, the male admission rate was 2,578 admissions per 100,000 population, almost one and a half times that for males (1,834 admissions per 100,000 population) and two and a half times that for females in the least deprived areas (1,027 admissions per 100,000 population).

### SAR – Circulatory: Deprivation Time Series

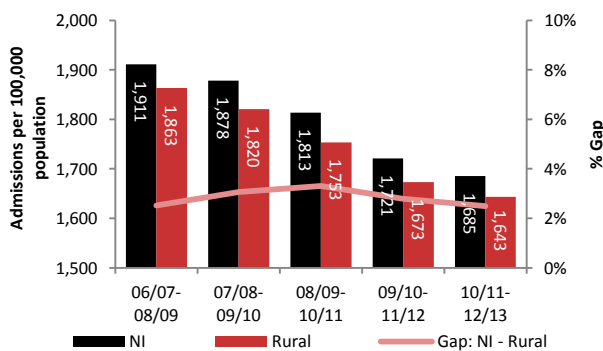
Circulatory admissions for those under 75 years of age decreased by more than a tenth over the period, from 1,911 admissions per 100,000 population in 2006/07-08/09 to 1,685 admissions per 100,000 population in 2010/11-2012/13.

During this time, the least deprived areas saw a drop in admission rates of 14%, similar to that in the most deprived areas.

The inequality gaps between the most-least deprived areas and between most deprived-NI remained similar over the period, and stood at 40% and 18% in 2010/11-2012/13 respectively.



### SAR - Circulatory: Rurality Time Series



Rural admissions fell by 12% since 2006/07-08/09, and stood at 1,643 admissions per 100,000 population in 2010/11-2012/13. The regional admission rate similarly declined over the period.

Across the time series, admission rates in rural areas have been around 2% lower than the regional average.

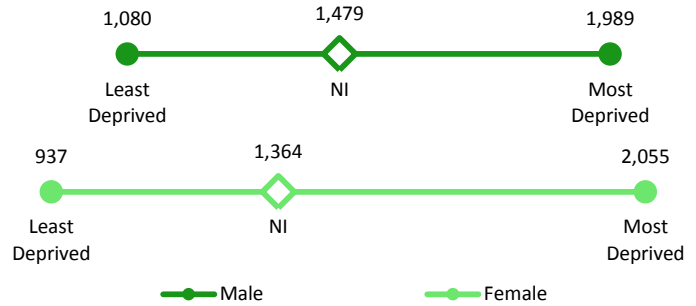
### 6.3 Standardised Admission Rate (SAR) –Respiratory (U75)

#### SAR – Respiratory (U75) by Gender & Deprivation, 2010/11-2012/13

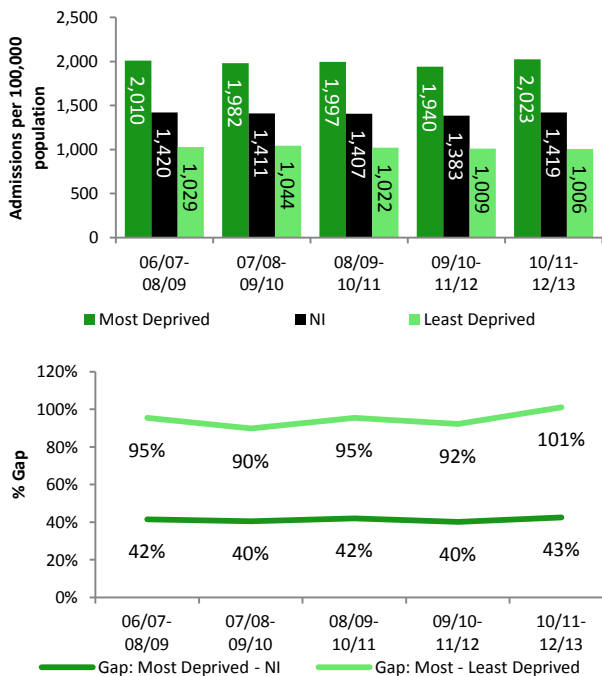
In 2010/11-2012/13, there were 1,479 under 75 year old males admitted for respiratory diseases per 100,000 population, 8.5% higher than for females in the same age-group (1,364 per 100,000 population).

Females in the most deprived areas had the highest admission rate (2,055 per 100,000 population), over double that for their counterparts in the least deprived areas (937 per 100,000 population).

Excluding those aged over 75 reduces the SAR for males by 29% and by 21% for females.



#### SAR – Respiratory (U75): Deprivation Time Series



Respiratory admission rates for those under 75 were similar in 2006/07-08/09 to that in 2010/11-2012/13 (1,419 admissions per 100,000 population).

The most deprived areas also showed a similar admission rate in 2010/11-2012/13 (2,022 admissions per 100,000 population), to that in 2006/07-08/09 (2,010 admissions per 100,000 population), while the least deprived areas saw a decrease in admissions of 2%, standing at 1,006 admissions per 100,000 population in 2010/11-2012/13.

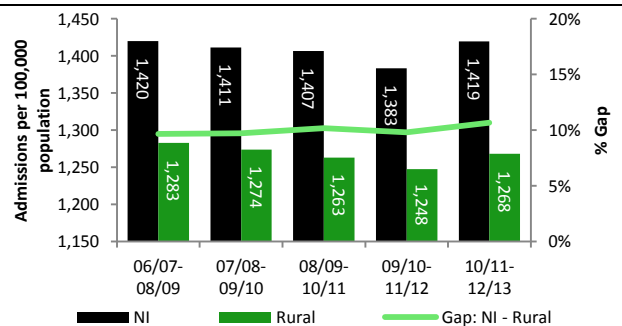
Due to the consistent rates regionally and in the most deprived areas, the gap between them remained similar, at 43%.

Due to the decrease in admission rates in the least deprived areas, the gap between the most-least deprived areas widened from 95% in 2006/07-08/09 to 101% in 2010/11-2012/13.

#### SAR - Respiratory (U75): Rurality Time Series

Admissions due to respiratory diseases among under 75 year olds in rural areas have remained broadly similar over the analysed period, from 1,283 admissions per 100,000 population in 2006/07-08/09 to 1,268 admissions per 100,000 population in 2010/11-2012/13.

The inequality gap also remained similar over the period, and stood at 11% in 2010/11-2012/13.







## Also available from the Health & Social Care Inequalities Monitoring System (HSCIMS)

### Health Inequalities

#### NI Health & Social Care Inequalities Monitoring System

##### Sub-regional – HSC Trusts 2012

Sub-regional analysis at HSC Trust level examining health inequality gaps within each trust as well as compared with the Northern Ireland average.

<http://www.dhsspsni.gov.uk/index/statistics/health-inequalities/sub-regional-health-inequalities.htm>

### Making Life Better

#### Monitoring the Wider Social Determinants of Health & Wellbeing

##### Key Indicators & Baselines 2014

Introducing and establishing baseline positions for the key indicators set out in the Making Life Better strategic framework.

<http://www.dhsspsni.gov.uk/index/statistics/health-inequalities/social-determinants-of-health.htm>

### Health Inequalities

#### NI Health & Social Care Inequalities Monitoring System

##### Life Expectancy Decomposition 2013

Analysis of changes in life expectancy and life expectancy gaps by cause of death and age, for NI overall, by deprivation and rurality as well as within each trust.

<http://www.dhsspsni.gov.uk/index/statistics/health-inequalities/life-expectancy-decomposition.htm>

### Health Inequalities

#### NI Health & Social Care Inequalities Monitoring System

##### Section 75 Analysis of Mortality Patterns 2003-07

Mortality analysis using longitudinal data from the Northern Ireland Mortality Study to provide robust assessments of the differences in the health outcomes across the various Section 75 equality groups in NI.

[http://www.dhsspsni.gov.uk/hscims\\_s75\\_analysis\\_of\\_mortality\\_patterns\\_2003-07.pdf](http://www.dhsspsni.gov.uk/hscims_s75_analysis_of_mortality_patterns_2003-07.pdf)

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<http://www.dhsspsni.gov.uk/index/statistics/health-inequalities.htm>