Burden of Disease in Scotland

Invited Chapter

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

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Introduction

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

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

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

- Fatal burden measured by **YLL** (years of life lost because of early death)

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

YLD + YLL = DALY

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

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Imagine a block of flats where 10 people live.

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

77.6 – 20
Life expectancy   current age

= 57.6
Years of life lost

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

89 – 80
Life expectancy   current age

= 9
Years of life lost

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

Seven weeks of illness with a high level of impairment.

= 0.02
Years lived with disability

One **60-year-old woman** had severe COPD that limited her a great deal all year round. This amounted to **0.41 lost years** of healthy life.
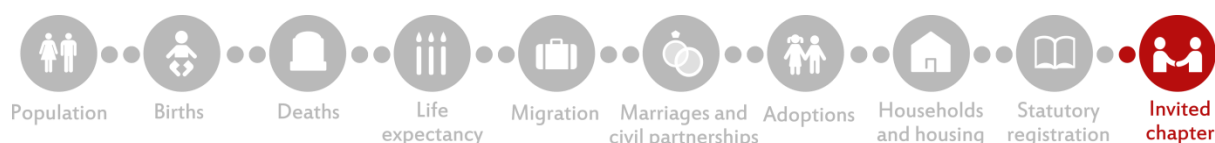
12 months lived with a severe condition and a high level of impairment.

= 0.41
Years lived with disability

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

57.6 + 9 + 0.02 + 0.41 = 67.03

In any given year, the DALY sums the years lost due to people dying early in that year (YLL) and the proportion of that year lost due to living in less than ideal health (YLD). The years spent in less than ideal health are calculated based on duration, severity and the level of disability, which varies by cause of disease or injury. So, in the
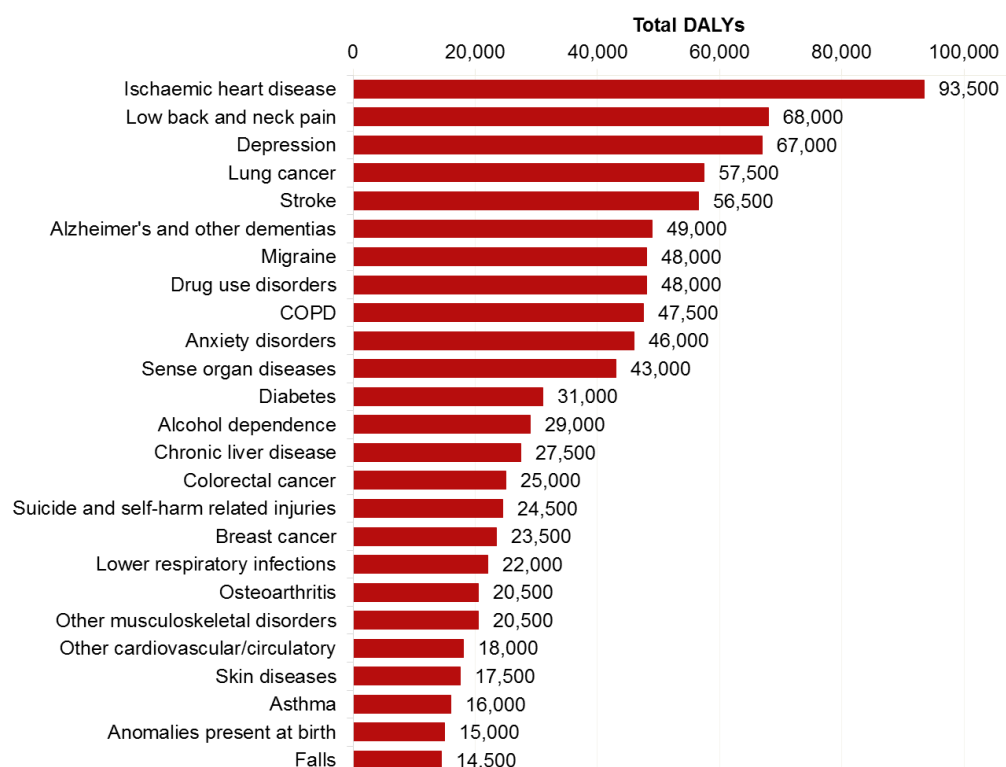
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example above there are 57.6 + 9 = 66.6 years lost due to people dying early and 0.02 + 0.41 = 0.43 of a year (approximately 5 months of the year) where the residents of the block of flats are living in less than ideal health.

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

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

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

Total DALYs

Disease	Total DALYs
Ischaemic heart disease	93,500
Low back and neck pain	68,000
Depression	67,000
Lung cancer	57,500
Stroke	56,500
Alzheimer's and other dementias	49,000
Migraine	48,000
Drug use disorders	48,000
COPD	47,500
Anxiety disorders	46,000
Sense organ diseases	43,000
Diabetes	31,000
Alcohol dependence	29,000
Chronic liver disease	27,500
Colorectal cancer	25,000
Suicide and self-harm related injuries	24,500
Breast cancer	23,500
Lower respiratory infections	22,000
Osteoarthritis	20,500
Other musculoskeletal disorders	20,500
Other cardiovascular/circulatory	18,000
Skin diseases	17,500
Asthma	16,000
Anomalies present at birth	15,000
Falls	14,500

Note: DALY figures rounded to nearest five hundred.

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

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

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

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

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

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

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

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- Streptococcal, severe and other sepsis related infections; (including gas gangrene and gangrene not elsewhere classified; toxic shock syndrome; staphylococcal infection, unspecified site);
- Pneumonitis due to solids and liquids;
- Other and unspecified diseases; including unspecified bacterial and infectious diseases, endocrine, nutritional and metabolic diseases; and mental and behavioural disorders.
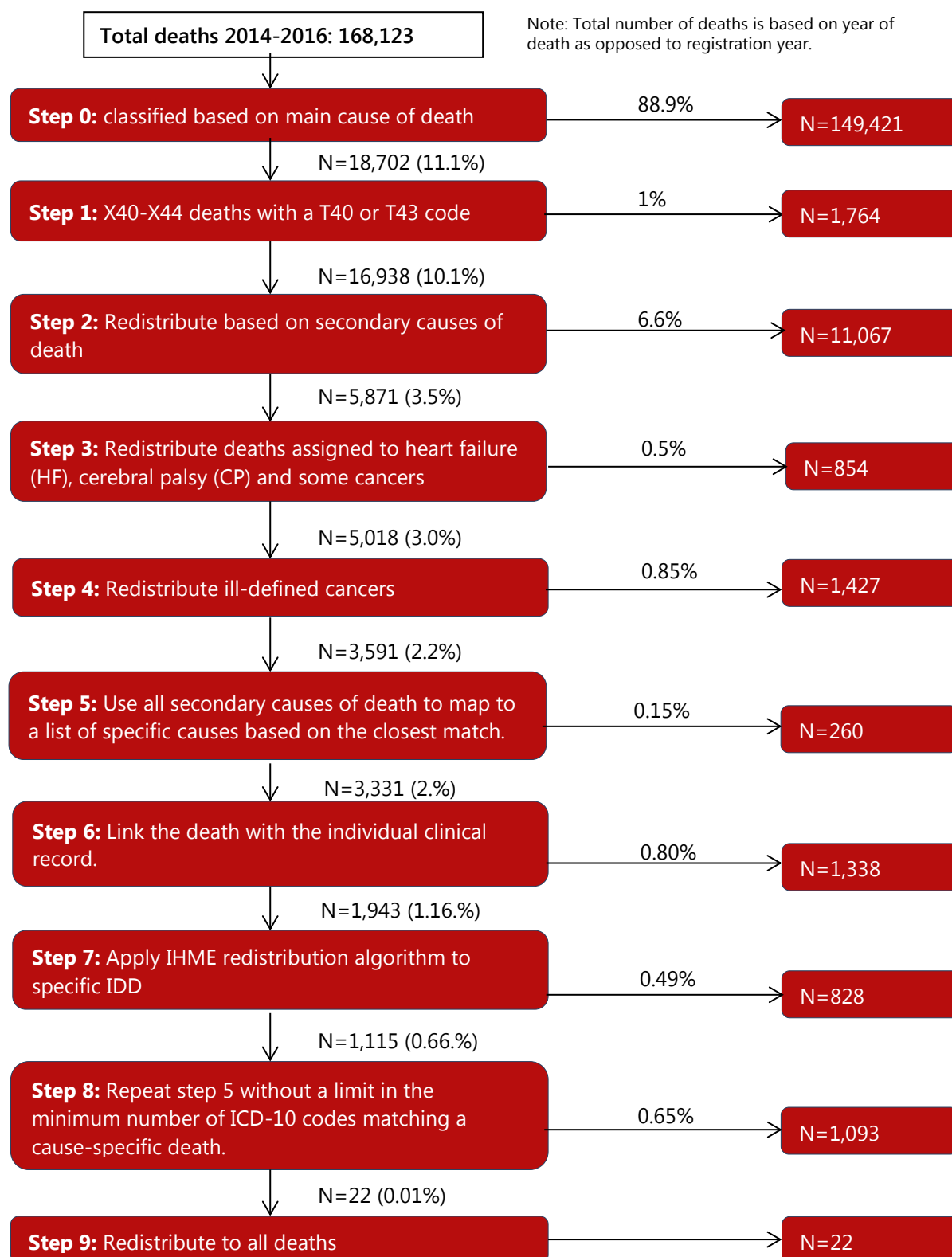
All deaths must be assigned to a specific cause in burden of disease studies. The Institute for Health Metrics and Evaluation (IHME) are the producers of the Global Burden of Disease study (GBD[2]), and they use an algorithm that defines a set of IDD types, each of which is redistributed to a number of meaningful causes using either fixed coefficients for the whole population or with different redistributions by age and/or gender strata. Where the cause of death is ill-defined the process aims to estimate the most likely detailed cause of death based on clinical knowledge and on information about the distribution of disease in a country. The IHME algorithm is based exclusively on the underlying cause of death recorded in the death certificate, alongside the age and gender of the deceased. Given that in Scotland the death certificate contains a number of contributory causes of death and that, in the case of the Scottish Burden of Disease study, we can link the death with individual clinical records, we redistribute IDD to specific causes using all ICD-10 codes available in the death certificate and, for a small number of cases, the information available in the individual clinical record.
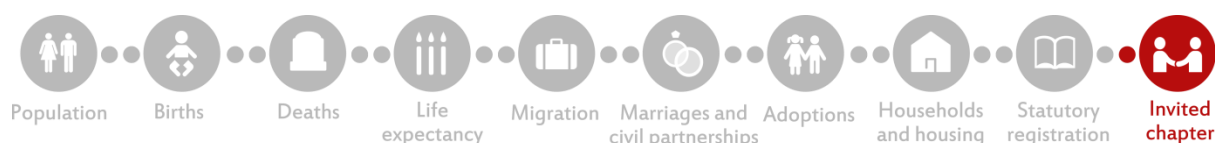
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[2] Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, Vos, Theo et al. The Lancet , Volume 390 , Issue 10100 , 1211 – 1259

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

Total deaths 2014-2016: 168,123

Note: Total number of deaths is based on year of death as opposed to registration year.

Step 0: classified based on main cause of death — 88.9% → N=149,421

N=18,702 (11.1%)

Step 1: X40-X44 deaths with a T40 or T43 code — 1% → N=1,764

N=16,938 (10.1%)

Step 2: Redistribute based on secondary causes of death — 6.6% → N=11,067

N=5,871 (3.5%)

Step 3: Redistribute deaths assigned to heart failure (HF), cerebral palsy (CP) and some cancers — 0.5% → N=854

N=5,018 (3.0%)

Step 4: Redistribute ill-defined cancers — 0.85% → N=1,427

N=3,591 (2.2%)

Step 5: Use all secondary causes of death to map to a list of specific causes based on the closest match. — 0.15% → N=260

N=3,331 (2.%)

Step 6: Link the death with the individual clinical record. — 0.80% → N=1,338

N=1,943 (1.16.%)

Step 7: Apply IHME redistribution algorithm to specific IDD — 0.49% → N=828

N=1,115 (0.66.%)

Step 8: Repeat step 5 without a limit in the minimum number of ICD-10 codes matching a cause-specific death. — 0.65% → N=1,093

N=22 (0.01%)

Step 9: Redistribute to all deaths — N=22

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

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

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

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

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

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

Health inequalities in the disease burden in Scotland

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

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

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

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Figure 10.2: Burden of disease by Scottish Index of Multiple Deprivation (SIMD 2016) decile, Scotland, 2014-16
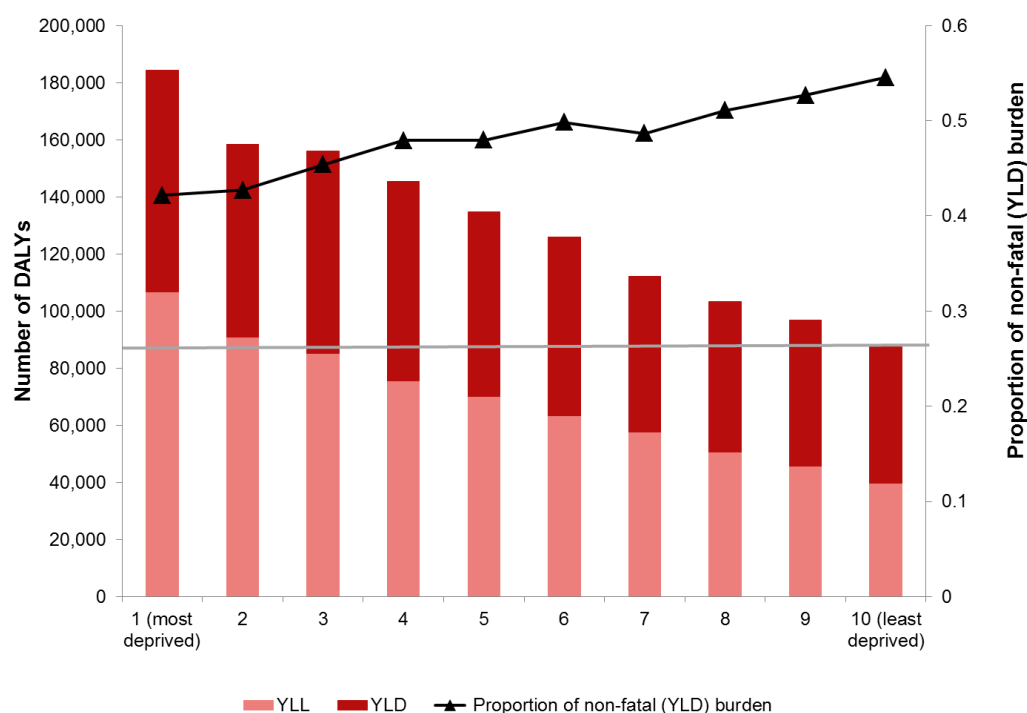
Generally, the non-fatal and fatal burden represent similar proportions of the overall number of DALYs. YLD is the component which is directly affecting a person's quality of life. Another way to represent a YLD is in terms of "burden free proportion of the year". In a situation of no ill-health each individual has a reference level of 1 year (52 weeks) spent in perfect health in the year. When looking across areas of deprivation we consider the 'excess' burden - that is, the total burden that would have been avoided if all deprivation deciles had the same age and gender rates of non-fatal burden as those in the (10%) least deprived areas of Scotland. This non-fatal burden we deem to be avoidable (although it might not seem realistic that we could achieve these levels for many decades). For these purposes, the non-fatal burden in the least deprived areas is set as the reference level of ill health.

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

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

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

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

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

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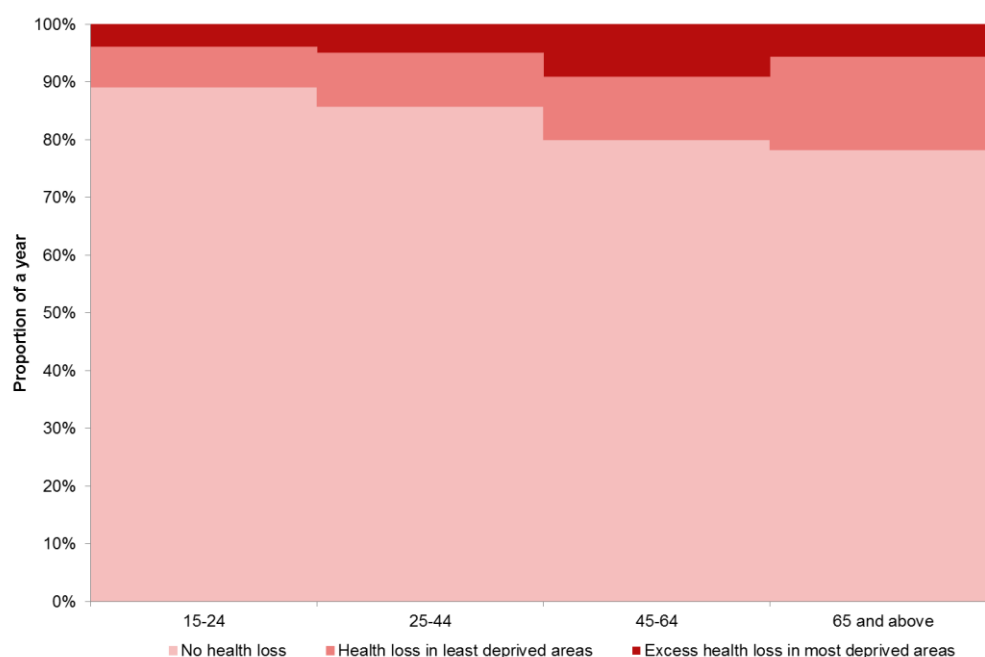
Figure 10.3: Burden of morbidity (YLD) in Scotland and time spent in excess ill health (in most deprived areas) by gender and age group, 2014-16

a) Men - YLD per person

b) Women - YLD per person

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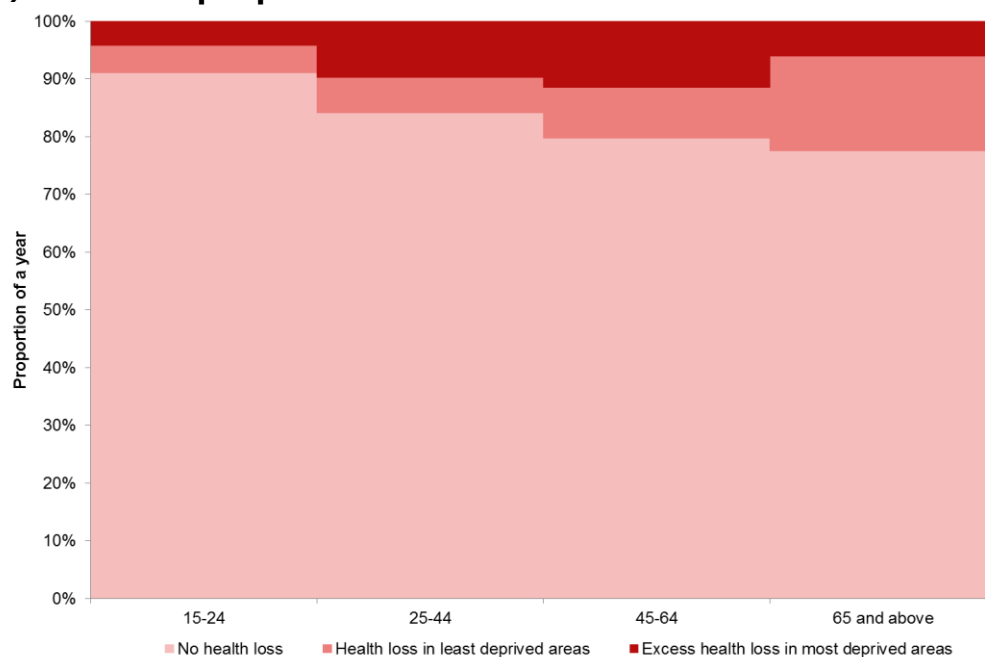
We can use statistical methods to explore the differences in DALY across the ten deprivation deciles in more detail, rather than focussing only on the extremes of the most and least deprived areas.

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

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

Inequalities in DALY by area deprivation

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

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

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

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

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

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

Figure 10.4. Average absolute inequality in age-standardised DALY per 100,000 population, Scotland, 2014-16
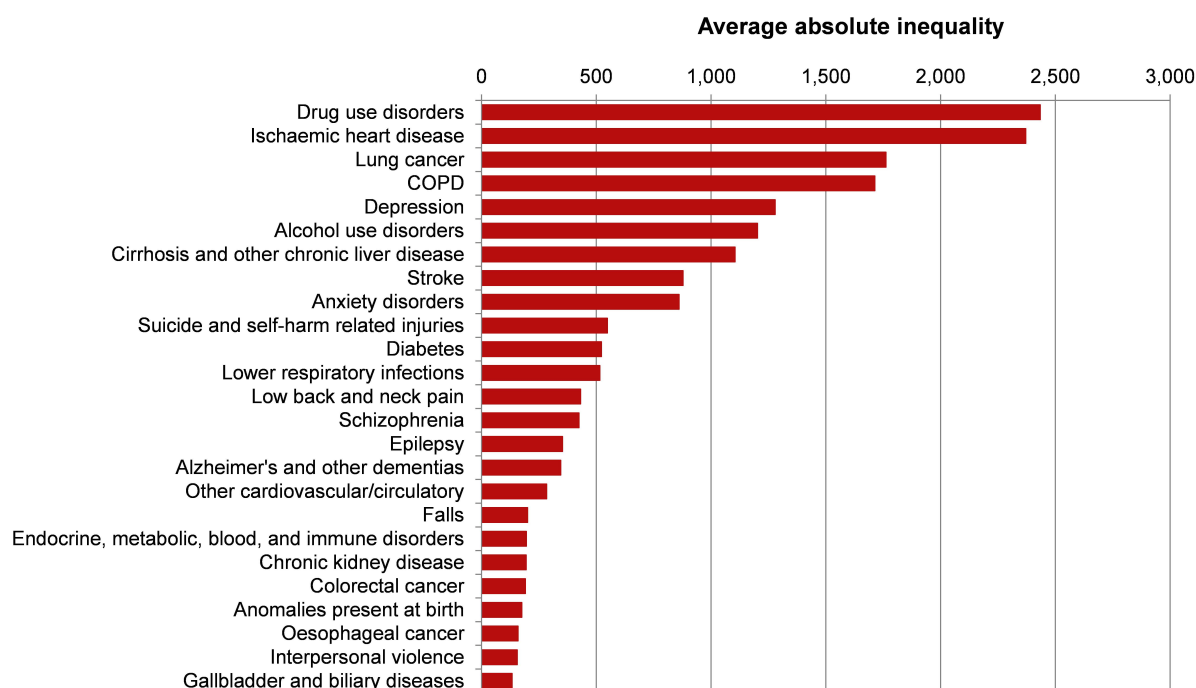
Absolute measures are sensitive to changes in the mean level of population health or changes in the frequency of the health problem being studied. If the mean level of health increases in the same proportion in all deprivation deciles, the absolute inequality will increase, whereas the relative differences remain constant. The Relative Index of Inequality (RII) takes into account the mean DALY and therefore looks only at the ratio rather than the count difference.

Figure 10.5 shows the relative inequality for the twenty largest contributors to the overall DALY in Scotland. The relative inequality was particularly high for drug use disorders, alcohol use disorders, chronic liver diseases, COPD and lung cancer, indicating significantly higher burden from these conditions in deprived areas in relation to less deprived areas.

> Drug use disorders have the highest relative and absolute inequalities, followed by alcohol use disorders and chronic liver disease.
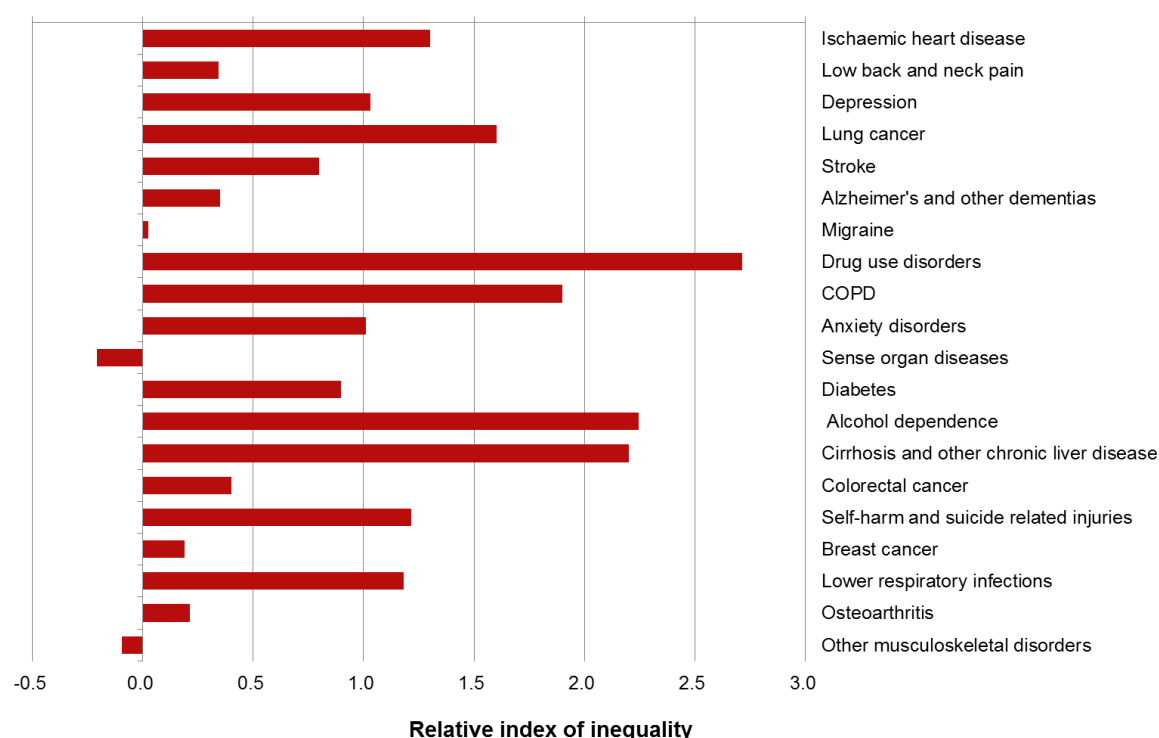
These five conditions are also major contributors to absolute inequalities in the disease burden. In contrast, neck and low back pain, and migraine, also major contributors to overall DALY, had relatively low relative inequalities indicating that

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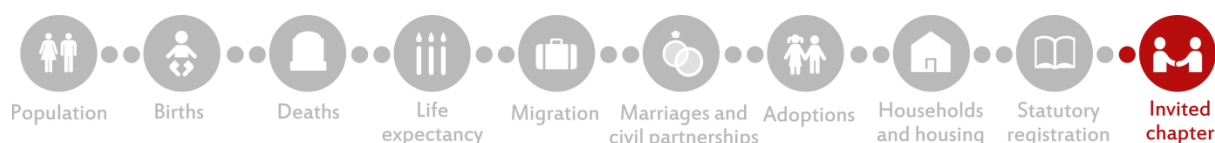
burden does not vary across deprivation groups. The relative inequalities for sense organ diseases and 'other musculoskeletal disorders' indicate a greater level of burden for these conditions in less deprived areas.

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

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

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Absolute Inequalities in DALY by gender and area deprivation

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

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

Table 10.4. Absolute Inequalities by gender and condition

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

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**Implications for policy and practice**

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

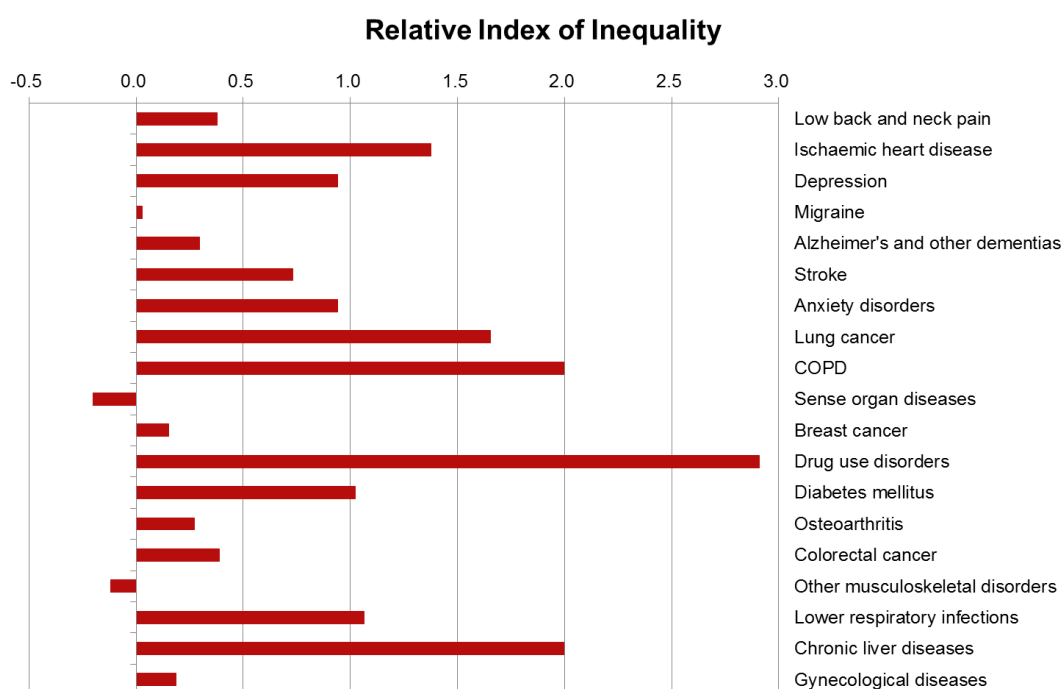## Relative Inequalities in DALY by gender and area deprivation

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

Figure 10.6 - The Relative Index of Inequality for the twenty largest contributors to DALY in men, Scotland, 2014-16
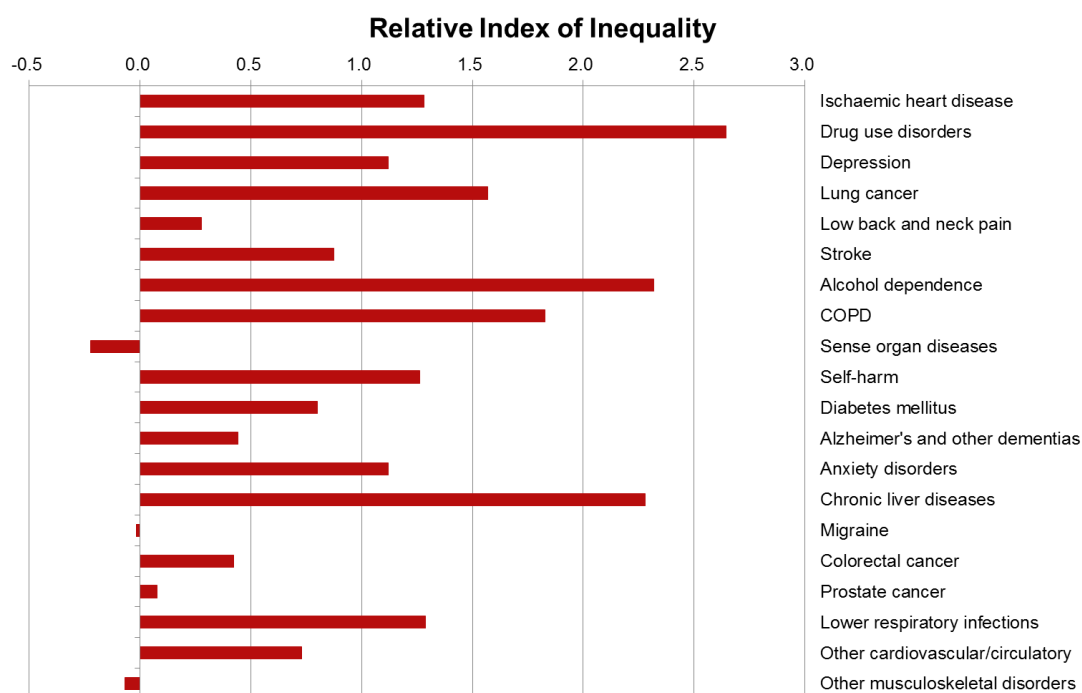
Figure 10.7. The Relative Index of Inequality for the twenty largest contributors to DALY in women, Scotland, 2014-16

Population · Births · Deaths · Life expectancy · Migration · Marriages and civil partnerships · Adoptions · Households and housing · Statutory registration · **Invited chapter**

Conclusions

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

What next?

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

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

http://www.healthdata.org/gbd

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

Population Births Deaths Life expectancy Migration Marriages and civil partnerships Adoptions Households and housing Statutory registration **Invited chapter**

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

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

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

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