Population Profile

NHS Tayside

Age Structure of Tayside Population

16% Children 62% Working age 22% Pensionable age

Life Expectancy at Birth

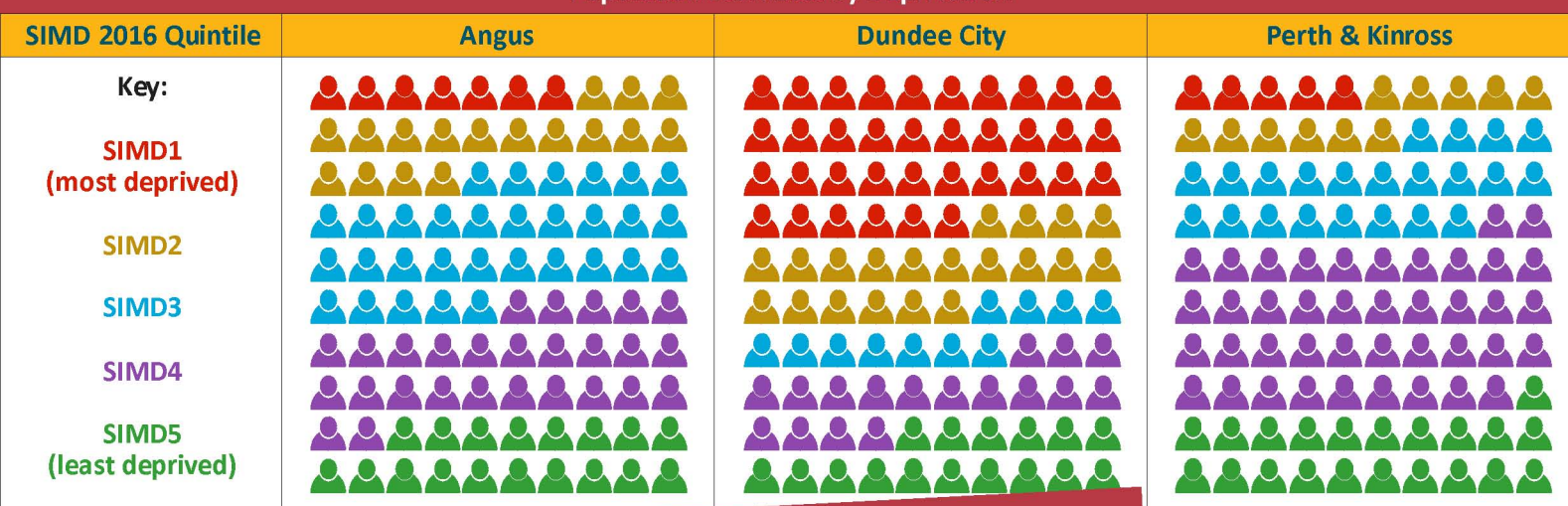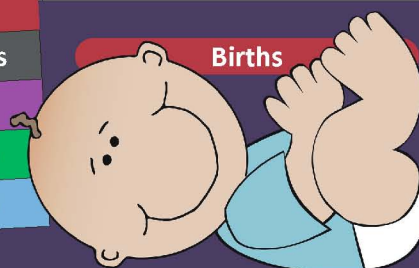|		
81.8 / 78.5	79.6 / 74.5	82.6 / 79.9
Angus	Dundee	Perth & Kinross

Population Estimates by Deprivation

SIMD 2016 Quintile	Angus	Dundee City	Perth & Kinross

Key:

SIMD1 (most deprived)

SIMD2

SIMD3

SIMD4

SIMD5 (least deprived)

Projected Populations   2016 → 2041

	All ages	Children	Working age	Pensionable age	75+ years
Angus	+ 2.2%	- 4.6%	- 2.3%	+ 18.2%	+ 75.4%
Dundee	+ 1.4%	- 2.3%	+ 0.7%	+ 7.3%	+ 45.6%
Perth & Kinross	+ 8%	- 2.4%	+ 2%	+ 30.1%	+ 87.3%

Births

% of babies born in area of highest deprivation (SIMD1)

Angus 10.5%
Dundee 48.6%
Perth & Kinross 9.3%
Tayside 25.2%

Health   Inequalities

Rates of CHD, COPD, diabetes and cancer in under 75's are all higher in Dundee City than in the other two areas

Hospitalisation for COPD is almost 10 times higher in SIMD1 than SIMD5

Hospitalisation and deaths from smoking, alcohol or drugs are higher in Dundee than in the rest of Tayside

Three quarters of deaths from suicides are males

Almost two thirds of adults in Tayside are overweight or obese

17.5% of Primary One children have been assessed as at risk of overweight or obesity

Content

Foreword

Population Profile
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Foreword

Welcome to Chapter four of my Annual Report for 2017/18. I hope you find it helpful and interesting. As always I would welcome any feedback. I am grateful to my colleagues for their hard work in preparing the Report.

The chapter presents a population profile of Tayside. It is deliberately high-level and broad-brush. My intention is to present some of the key population health data and intelligence which we have in the hope of encouraging readers to look at our website which contains a large amount of more detailed information, analysis and interpretation, or to contact our Population Health Intelligence Team for advice or further information.

The purpose of NHS Tayside and our partners is to improve the health and wellbeing of our population. We can only do that if we understand the nature and cause of health problems in the people of Tayside, how these are changing over time, whether what we are already doing is making a positive difference and what more needs to be done. Population health intelligence is one of the tools we have to help us do that.

The chapter describes the make up of the Tayside population and the different groupings such as males and females, older and younger, but has a particular focus on one of the key determinants of health and wellbeing – the wide disparities of relative affluence and relative poverty, and the impact these have on health inequalities. I have covered that many times in the past, but these statistics are a timely reminder that these inequalities are stubbornly persistent and require deliberate, ongoing and highly committed action to narrow the health and wellbeing gap between rich and poor.

I should finish with a 'health warning'. The chapter contains population projections well into the future. While these have some value, as the report points out they need to be interpreted with considerable caution. While projection techniques are improving all the time, and we hope are making the projections themselves more accurate, the history of population projections in Tayside at least is rather mixed, with anticipated increases and decreases often being at a scale not actually predicted, and sometimes in the opposite direction to that expected. Part of my job, and that of my public health colleagues, is to help our planning partners make sense of the rich seams of information available to us, including projections, in planning for a healthier future. For example, there is a clear consensus that there will be an increase in the number of older people over the next 25 years, but will the scale of that increase be similar to the population projections? The ongoing obesity epidemic introduces some doubt about that. As we now know, overweight and obesity are associated with

Foreword

significant increases in associated ill health (morbidity) and death (mortality). So the increases in the proportion of the population who are overweight or obese – currently two thirds of the adult population and predicted to be much more in future – are going to add to the disease burden in older people which is likely to impact on mortality and life expectancy, as well as impacting on the need for and use of services. This likelihood needs to be considered against the trend for many years of people living longer because they are healthier. To what extent will one offset the other? That is not at all clear, and deserves a much greater focus from public health and other researchers. Some authorities have predicted that the current generation of young and middle-aged adults will be the first to have a shorter life expectancy than their parents. We all hope that is not true, but if it is it will have major implications for society as a whole, and for all public and third sector organisations.

And now, as previously, read on........

Dr Drew Walker
Director of Public Health
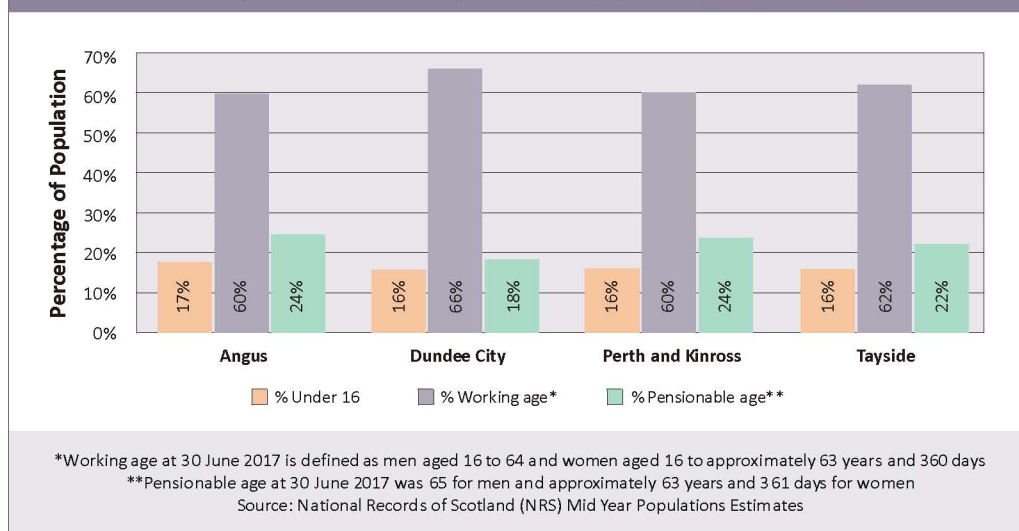October 2018

Population Profile

Population

Demographics

The demography of a population is an important factor in tackling health issues. Many illnesses, conditions and health related behaviours are associated with age, gender or other demographic characteristics. An awareness of population distributions and attributes helps identify those likely to experience health inequalities.

The estimated population of Tayside on 30th June 2017 was 416,090, a slight decrease of 380 (0.1%) from 2016. Similar in proportions to previous years, 48.7% of the population were males and 51.3% females. The distribution of the population across Tayside's three local authority areas was 116,280 (27.9%) in Angus, 148,710 in Dundee City (35.7%) and 151,100 (36.3%) in Perth & Kinross. The minority ethnic population makes up 3.2% (13,111 individuals) of the Tayside population, ranging from 1.3% in Angus to 6.0% in Dundee City.

 Chart 1 shows the age distribution of the population across Tayside. The proportion of children is comparable across Tayside and is also similar to Scotland as a whole. Within Tayside, Dundee City has a higher proportion of the population who are of working age and a lower proportion of older people than the other two local authority areas. This is reflected in the median age of the population which varies from 37 years old in Dundee City to 46 years in the other two areas. By comparison, the median age nationally is 42 years old.

Chart 1: Age structure of the Tayside resident population, as at June 30, 2017

*Working age at 30 June 2017 is defined as men aged 16 to 64 and women aged 16 to approximately 63 years and 360 days
**Pensionable age at 30 June 2017 was 65 for men and approximately 63 years and 361 days for women
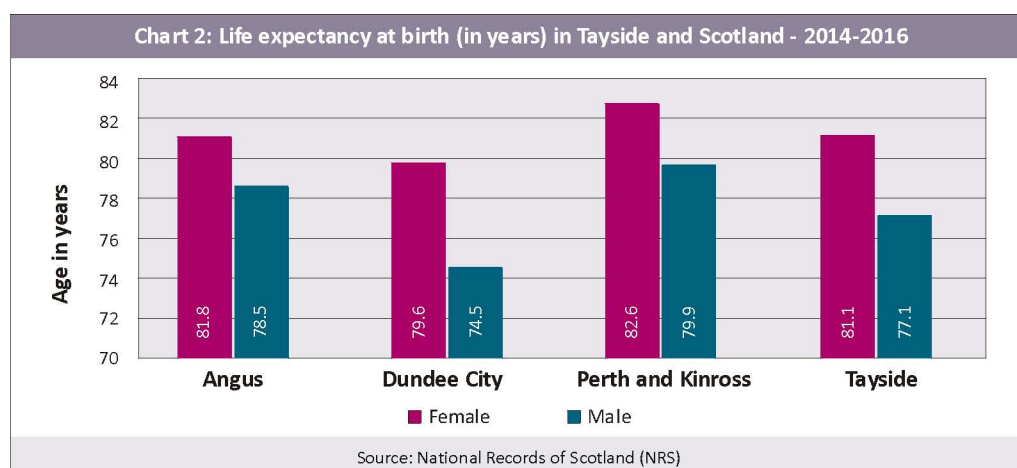Source: National Records of Scotland (NRS) Mid Year Populations Estimates

Population Profile

Life Expectancy

Life expectancy at birth is the average number of years a newborn infant can expect to live if current mortality rates continue to apply.

In Tayside, life expectancy at birth has increased over the last decade by 2.2 years in males and 1.3 years in females to 77.6 years and 81.4 years respectively in the most recent years (2014-2016). However, the pattern of inequality is clearly demonstrated in relation to life expectancy where men and women living in Dundee City have the lowest life expectancy of the Tayside areas and also lower compared to the national average.
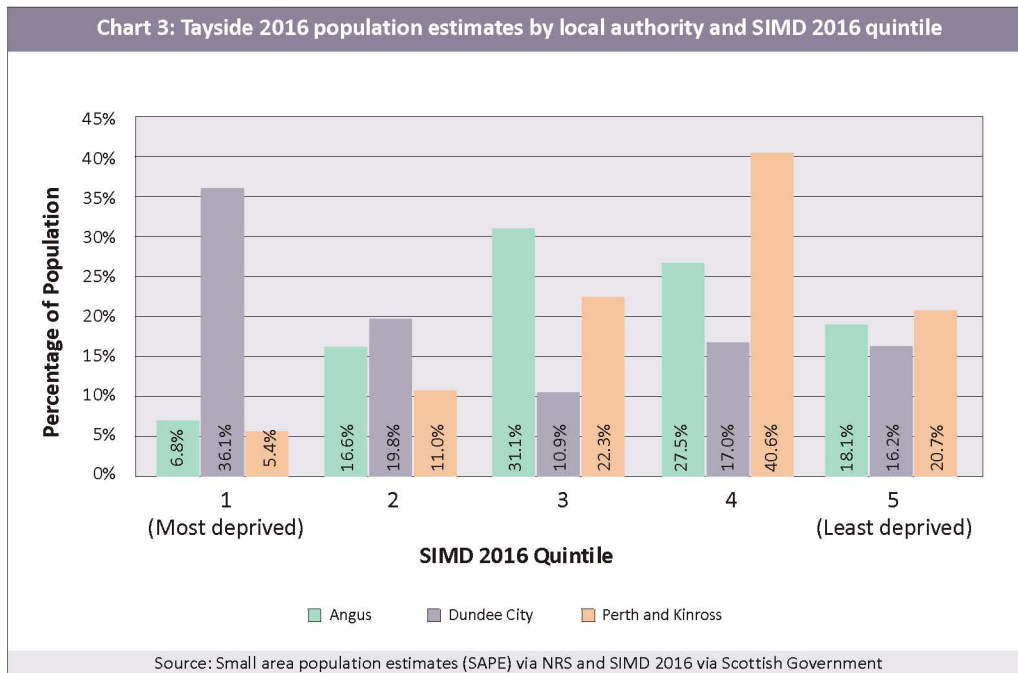
Chart 2: Life expectancy at birth (in years) in Tayside and Scotland - 2014-2016

	Female	Male
Angus	81.8	78.5
Dundee City	79.6	74.5
Perth and Kinross	82.6	79.9
Tayside	81.1	77.1

Source: National Records of Scotland (NRS)

Deprivation

Deprivation across Scotland is measured using the Scottish Index of Multiple Deprivation (SIMD). This is an area-based measure of deprivation, combining indicators across various domains to give a relative measure of deprivation for small geographies called datazones (areas containing approximately 500 – 1000 people) which are then ranked from most to least deprived. Data are often presented by quintiles.

In a standard population, 20% of the population would be expected to live within each quintile, with quintile 1 being the most deprived areas and quintile 5 the least deprived. However, across Tayside there are large variations between the differing levels of deprivation. Chart 3 displays the population proportions residing in each deprivation quintile for all three of Tayside's local authority areas and shows that across Tayside, Dundee has by far the greatest proportion living in areas within the 20% most deprived in Scotland.
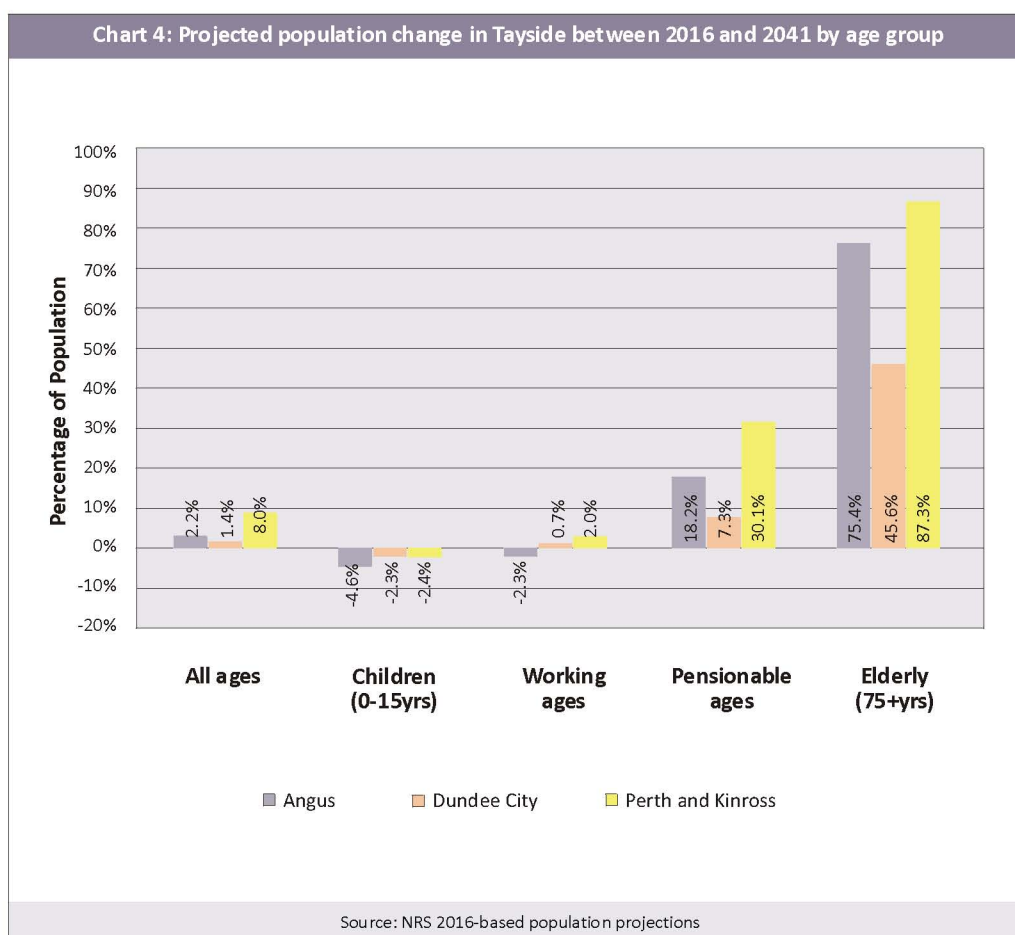
Population Profile

Chart 3: Tayside 2016 population estimates by local authority and SIMD 2016 quintile

Percentage of Population

SIMD 2016 Quintile	Angus	Dundee City	Perth and Kinross
1 (Most deprived)	6.8%	36.1%	5.4%
2	16.6%	19.8%	11.0%
3	31.1%	10.9%	22.3%
4	27.5%	17.0%	40.6%
5 (Least deprived)	18.1%	16.2%	20.7%

Source: Small area population estimates (SAPE) via NRS and SIMD 2016 via Scottish Government

Population Projections

The Tayside population is expected to increase by 4.0% over the twenty five years from 2016 to 2041 (based on the NRS 2016 population projections). This is lower than the expected increase of 5.3% for Scotland as a whole.

The predicted increase varies both within Tayside and when further examined by age and gender. Chart 4 compares the projected population for each of the three local authority areas by age group. In Angus, the overall population is thought to increase by 2.2% in the period to 2041 with only the pensionable age (and particularly those aged 75+ years) expected to increase while the population of children and those of working age are predicted to drop. The Dundee City population is expected to increase the least of the three areas at just 1.4%. A decrease in children will be offset by a small increase of working age and a larger (45.6%) expected increase in those aged 75 and over. Perth & Kinross is expected to grow by the largest amount at 8.0% and most notably, is predicted to see an 87.3% increase in the population of 75+ years.

It should be noted that over the shorter term, there have been considerable discrepancies between population projections and annual population estimates. Caution should therefore be exercised in the use of population projections for planning purposes.

Population Profile

Chart 4: Projected population change in Tayside between 2016 and 2041 by age group

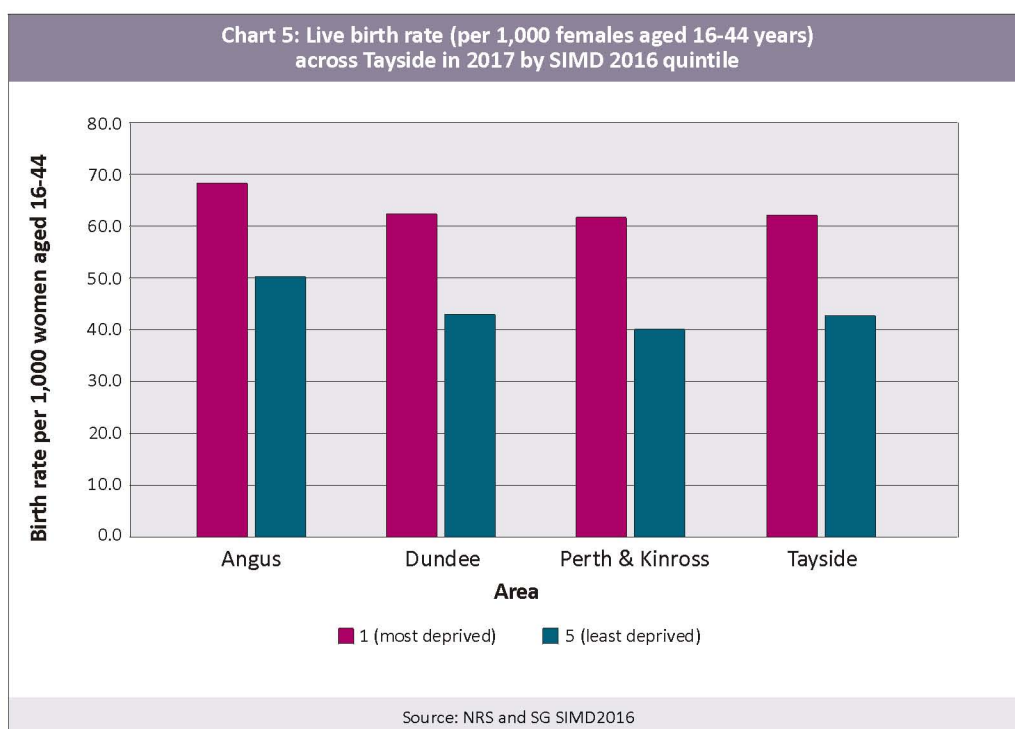Source: NRS 2016-based population projections

Births

Since 2008, birth rates in Tayside and Scotland have been decreasing overall. In 2017, there were 3,757 live births to women living in Tayside, a rate of 49.5 births per 1,000 female population aged 15-44 years and a decrease of 4.3% from the previous year.

Rates varied across Tayside from 45.7 in Dundee City to 55.9 per 1,000 females aged 15-44 years in Angus. While Dundee City, Perth & Kinross and indeed Scotland as a whole saw a decrease in births between 2016 and 2017, the number of Angus births increased by 2.8% (from 1,025 to 1,054).

A quarter of births in Tayside in 2017 (948 babies) were to mothers living in the most deprived quintile of deprivation. Chart 5 compares the proportion of births (note this is per 1,000 women aged 16-44 years) in the most deprived areas with the least deprived areas. In Dundee City, almost half 48.6% or 725 babies born in the area were born to mothers living in the most deprived areas of the City.

Population Profile

Chart 5: Live birth rate (per 1,000 females aged 16-44 years) across Tayside in 2017 by SIMD 2016 quintile

Source: NRS and SG SIMD2016

Ill health

Many patterns of diseases and conditions demonstrate inequalities between genders, age groups or geographical areas. It is estimated that one in four adults (aged 16+ years) report some form of long term condition (LTC), health problem or disability and by the age of 65 nearly two thirds will have developed a LTC[1]. Examples of common LTCs include diabetes mellitus (type 1 or 2), coronary heart disease (CHD), cancer and chronic obstructive pulmonary disease (COPD). Some of these people will need to be hospitalised at some point (either as an emergency or elective patient) as a result of their LTC.

Chart 6 compares the age standardised rates in 2011/12 and 2017/18 for those Tayside residents aged under 75 years who were discharged from hospital with a diagnosis of diabetes mellitus (type 1 or 2), COPD and CHD. Note that around 90% of diabetes cases are type 2 which is associated with preventable factors The chart also shows the rate of cancer registrations for the calendar years 2011 and 2016.

Dundee City has higher rates than either Angus or Perth & Kinross in all of the conditions examined. While there have been some fluctuations in the rates over time in each area, the rate of COPD and diabetes has increased in the time period considered in all three Tayside areas.

[1] Improving the Health and Wellbeing of People with Long Term Conditions in Scotland: A National Action Plan (www.gov.scot/Publications/2009/12/03112054/0

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Chart 6: Age standardised rates for those aged under 75 years for selected conditions in Tayside 2011/12 and 2017/18 (cancer registrations compare calendar years 2011 and 2016)

Notes: Diabetes mellitus defined by ICD10 codes E10-E14. Cancer defined by ICD10 codes C00-C96 excl C44. COPD defined by ICD10 codes J40-J44. CHD defined by ICD10 codes I20-I25. Source: SMR01, SMR06 and NRS
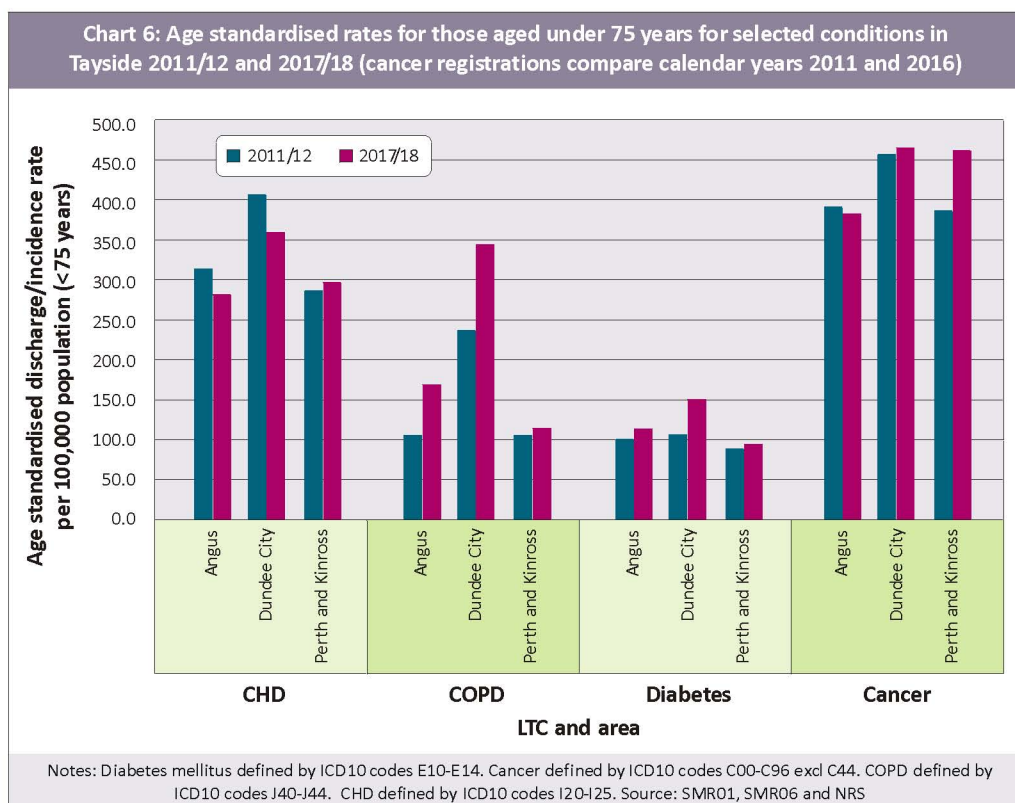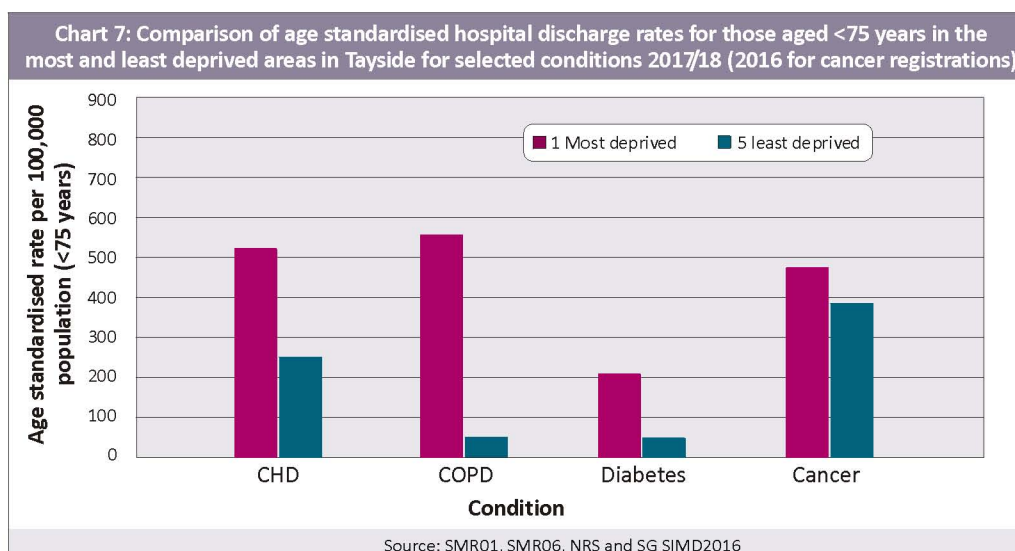
Chart 7 shows the clear inequality gradient that exists when the hospital discharge rates for these selected conditions for those aged under 75 are examined by deprivation. This is particularly evident for COPD where rates in the most deprived areas are almost 10 times higher than those in the least deprived. This is likely to be associated with the historical differences in smoking rates when most and least deprived areas are compared.

Chart 7: Comparison of age standardised hospital discharge rates for those aged <75 years in the most and least deprived areas in Tayside for selected conditions 2017/18 (2016 for cancer registrations)

Source: SMR01, SMR06, NRS and SG SIMD2016

Population Profile

Health risk behaviours

A number of behavioural factors are known to influence the health of the population. These include substance misuse, poor diet and nutrition, lack of physical activity, poor sexual health and tobacco use.

Table 1 summarises the prevalence and rate of selected health risk behaviours and compares the three Tayside local authority areas with the national average for the most recent data available. While Tayside as a whole shows favourable rates compared to the Scottish average, there is large variation across the region and strong links with deprivation for these indicators. Dundee City shows much higher rates than the rest of Tayside and for all but one indicator, shows much higher rates than those for Scotland.

Table 1: Various health risk behaviours in Tayside and Scoltand				
Health risk behaviour	Angus	Dundee City	Perth & Kinross	Scotland
Smoking prevalence (% of adults aged 16+ years 2016)	16.2	22.4	17.5	19.6
Estimated smoking attributable deaths (per 100,000 popn 2013/14)	290.5	404.9	278.5	366.8
Alcohol related hospital stays (per 100,000 popn 2016/17)	364.4	659.2	396.6	680.8
Deaths from alcohol conditions (per 100,000 popn 2012-16)	16.8	29.3	16.6	22.0
Drug relatedhospital stays (per 100,000 popn 2014/15 - 2016/17)	81.8	240.2	88.6	146.9
Drug related deaths (per 100,000 popn 2013-2017)	11.3	25.1	6.9	13.6
Source: ScotPHO Health and Wellbeing Profiles (Tayside) and NRS				

In Tayside, more than 66% of adults are overweight or obese and in 2016/17 17.5% of Primary 1 school children were assessed as at risk of overweight, obese and severely obese. Being obese or overweight increases the risk of developing a range of serious diseases including type 2 diabetes, hypertension, heart disease and some cancers; as well as contributing to premature death.

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The proportion of adults using active travel to work vary across Tayside with those in Angus and Perth & Kinross more likely to walk or cycle (17.0% and 16.3% respectively) than Dundee City residents (12.9%) and the national average (14.9%).

Mental Health

Over the last 10 years, age standardised rates of psychiatric hospitalisation have consistently been higher in Tayside than the national average. However, despite some fluctuations, the Tayside rates have decreased over time from 424.0 per 100,000 in 2002 to 342.6 per 100,000 population in 2014 with rates within Tayside varying from 321.2 in Perth and Kinross to 386.3 in Dundee City.

> Although Tayside prescribing rates are comparable to the national average (18.5% in 2016), the rates vary within Tayside from 16.4% in Perth and Kinross to 21.4% in Dundee City.

Rates of hospital discharge for those with a specific diagnosis of depression have also decreased over time with a corresponding increase in prescribing rates of drugs for anxiety/depression/psychosis. This may mean that these conditions are being managed in the community. Prescribing data show that rates of prescribing of drugs for these conditions has risen over the last five years in Tayside from 16.3% in 2012 of the population to 18.8% in 2016. Although Tayside prescribing rates are comparable to the national average (18.5% in 2016), the rates vary within Tayside from 16.4% in Perth and Kinross to 21.4% in Dundee City.

With some fluctuations, the number of suicides in Tayside has reduced over time. However, on average between 2012 and 2016, there were 51 deaths per year by intentional self-harm, an age standardised rate of 14.2 per 100,000 population. Approximately three quarters of these deaths were males. For the same time period, the rate of suicide in Dundee was higher at 16.4 per 100,000 population, once again showing inequality within the area.
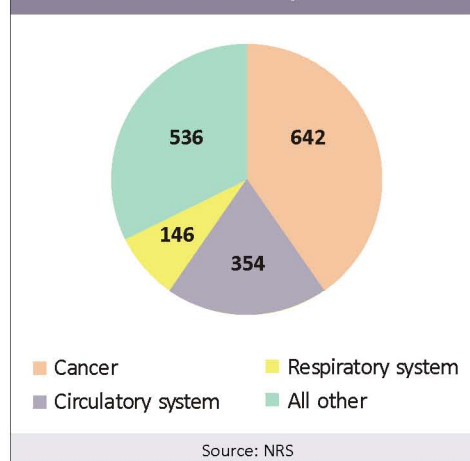
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Mortality

Death rates vary across age groups and different geographical areas. Premature mortality rates (those dying under the age of 75 years) are far higher in Dundee City than the rest of Tayside and Scotland as a whole (see Chart 8). Despite some fluctuations, premature mortality rates have decreased overall since 2006 but while rates dropped in the most recent year in Angus, Dundee City and indeed Scotland as a whole, they increase slightly in Perth & Kinross.

Chart 8: Premature (<75 years) mortality in Tayside and Scotland - 2006-2017

Source: NRS
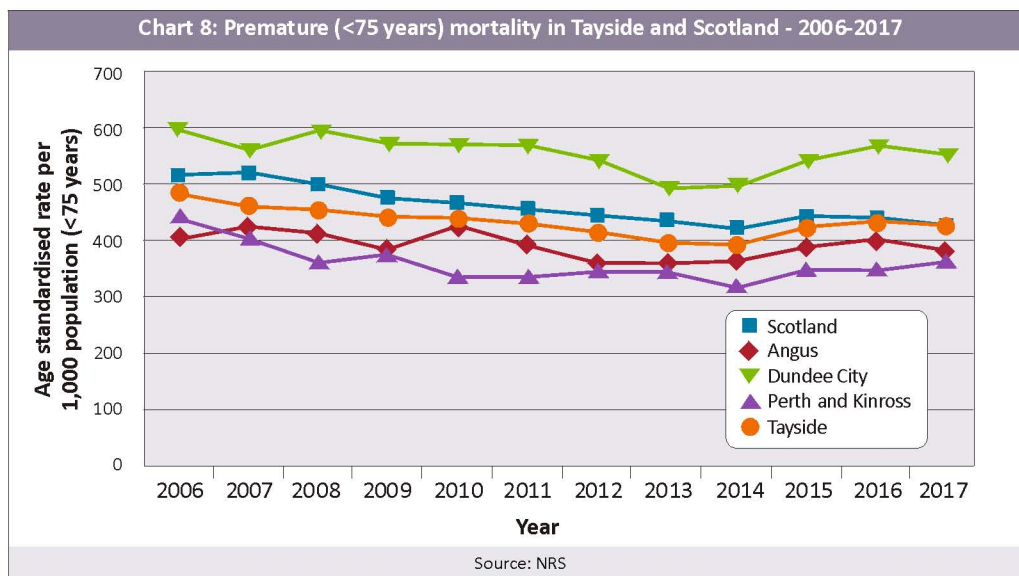
Cancer, diseases of the circulatory (includes CHD and stroke) and respiratory systems account for the majority (68.1%) of premature deaths across Scotland. Mortality rates of these diseases have decreased over time and with the exception of cancer, Tayside rates have consistently been lower than the Scottish average. There is however large variation within Tayside with Dundee City having above average rates for each of these causes.
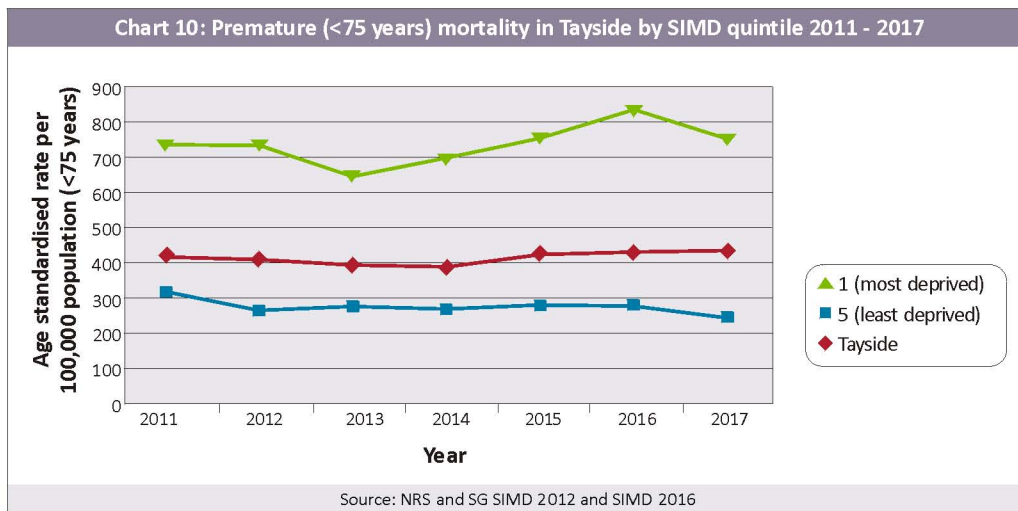
Chart 9 shows the 1,678 premature deaths in Tayside in 2017 by category of death.

Chart 9: Premature (<75 years) mortality by cause of death in Tayside - 2017

Source: NRS

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Analysis of premature death by deprivation shows a clear inequality gradient. Chart 10 compares the rate of the most and least deprived communities in Tayside with the average rate. Between 2011 and 2017, there has been a widening of the gap between the most and least deprived quintiles due to an increase in rates in the most deprived areas being accompanied by a reduction in the least deprived rate.

Chart 10: Premature (<75 years) mortality in Tayside by SIMD quintile 2011 - 2017

Source: NRS and SG SIMD 2012 and SIMD 2016

NHS
Tayside

Director of Public Health Annual Report 2017/18

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