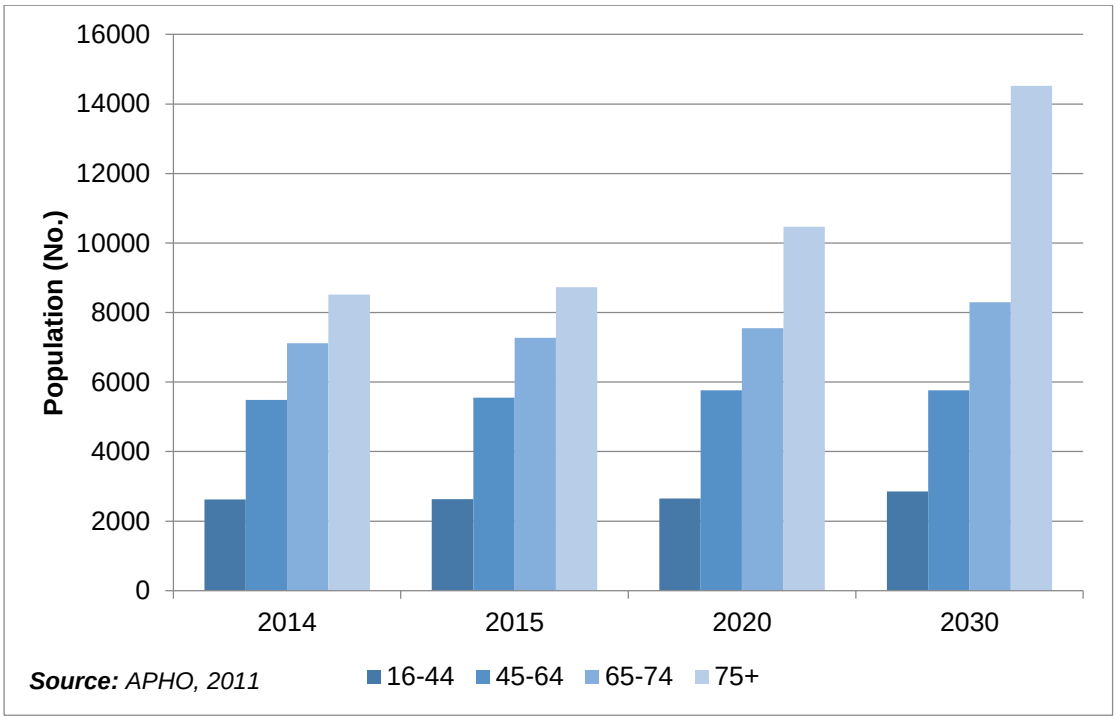
Disease Prevalence Models

It is worth noting that a number of assumptions were made in creating the following prevalence models. Also they are based on old mid-year estimates (previous to 2010) and therefore may now be different. It is important to remember that the prevalence figures generated by the models are estimates of the expected prevalence of disease. For a full list of caveats, please refer to the APHO website http://www.apho.org.uk/diseaseprevalencemodels

Cardiovascular Disease

According to the disease prevalence models, cardiovascular disease is set to increase at a rate of 1.05% annually for people aged 16 and over. By 2030, a predicted 25,897 people will have cardiovascular disease. Figure 1 shows the predicted increase across the different age groups, showing the over 75 age group as having the fastest growing rate at 4.4% annually, reaching 14,525 over 75s with the disease by 2030. This is nearly 40% of all people in North Somerset over the age of 75 years.

Figure 1: Predicted prevalence of cardiovascular disease in North Somerset, by age categories, 2014-2030.



Source: *APHO, 2011*

Both the individual diseases that make up cardiovascular disease (stroke and coronary heart disease) show increases in prevalence (Table 1). Although there are greater numbers of people with coronary heart disease than stroke, the predicted increase is similar at 1.05% for people aged 16 and over.

Title:	North Somerset JSNA – Disease Prevalence Models		
Owner:	Nina Robery	**Version Date:**	Jul 2015
Version:	1.0	**Review Date:**	Jul 2016

Table 1: Predicted prevalence of coronary heart disease and stroke in North Somerset, by gender and age, 2014-2030.

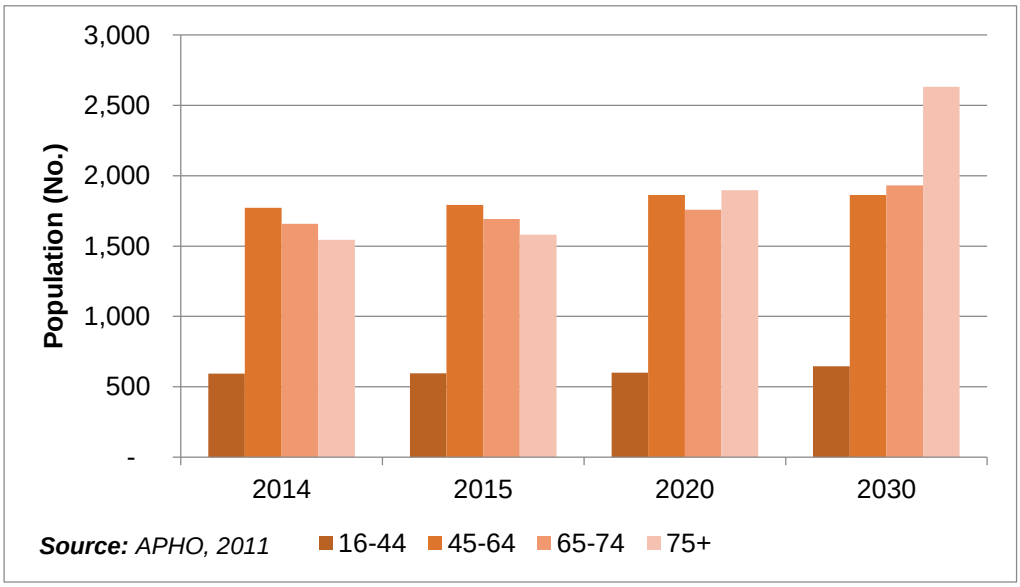
	Coronary Heart Disease					Stroke				
	2014	**2015**	**2020**	**2030**	**AGR**	**2014**	**2015**	**2020**	**2030**	**AGR**
Males	6,421	6,508	6,837	7,560	1.11	2,339	2,371	2,491	2,754	1.11
Females	4,552	4,605	4,801	5,263	0.98	2,453	2,482	2,587	2,836	0.98
Persons	11,004	11,137	11,667	12,849	1.05	4,787	4,844	5,075	5,589	1.05
16-44	284	285	287	309	0.55	204	205	207	223	0.55
45-64	3,169	3,209	3,332	3,332	0.32	1,007	1,020	1,059	1,059	0.32
65-74	3,908	3,992	4,144	4,554	1.03	1,581	1,615	1,676	1,842	1.03
75+	4,576	4,690	5,623	7,802	4.41	2,346	2,405	2,883	4,001	4.41

AGR – Annual Growth Rate
Source: *APHO, 2011*

Chronic Obstructive Pulmonary Disease

A greater number of males suffer from chronic obstructive pulmonary disease, but the predicted annual increase for males and females over 16 years old is similar; 1.11% and 0.98% respectively. Consequently by 2030, there could be as many as 4,000 males and just over 2,000 females with chronic obstructive pulmonary disease. In the over 75 age category there is a particular increase from 2020 to 2030 in prevalence (Figure 2), from 1,897 in 2020 to 2,632 in 2030 having the disease.

Figure 2: Predicted prevalence of chronic obstructive pulmonary disease in North Somerset, by age categories, 2014-2030.



Source: *APHO, 2011*

Title:	North Somerset JSNA – Disease Prevalence Models		
Owner:	Nina Robery	**Version Date:**	Jul 2015
Version:	1.0	**Review Date:**	Jul 2016

Hypertension (high blood pressure)

As the population increases so too does the prevalence of people with hypertension. With high blood pressure comes many issues, including artery damage and narrowing of blood vessels, which increases your risk of diseases such as coronary heart disease and stroke. Hypertension is linked to lifestyle choices, including lack of physical activity and poor diet. The prevalence of this risk factor increases with age (Table 2), particularly in the over 75 age group, an estimated 71% of all over 75s will have high blood pressure, which given the associated diseases of having hypertension, indicates this as an area of concern.

Table 2: Predicted prevalence of hypertension in North Somerset, by age categories, 2014-2030.

	2014	2015		2020		2030	
Age Group	No.	No.	% Increase from baseline	No.	% Increase from baseline	No.	% Increase from baseline
16-44	6,425	6,448	0.35	6,497	0.19	6,993	0.55
45-64	22,855	23,143	1.26	24,032	0.86	24,032	0.32
65-74	16,705	17,066	2.16	17,715	1.01	19,467	1.03
75+	15,756	16,148	2.49	19,363	3.82	26,865	4.41

Source: *APHO, 2011*

Diabetes and Obesity

The latest report from the journal of Diabetic Medicine, projected that the NHS's annual spending on diabetes in the UK will increase from £9.8 billion to £16.9 billion over the next 25 years. This increase would mean that the NHS would be spending 17% of its entire budget on the condition. As table 3 shows, the prevalence of diabetes is set to increase and so too obesity (Table 4). With an estimated 16,300 people predicted to have diabetes and the same for obesity by 2020.

Table 3: Predicted prevalence of diabetes in North Somerset, 2015-2030

Year	Number	Prevalence	Lower uncertainty limit	Upper uncertainty limit
2015	14,437	7.6%	5.6%	11.7%
2020	16,334	8.0%	5.9%	12.3%
2025	18,333	8.4%	6.1%	12.9%
2030	20,483	8.8%	6.4%	13.6%

Source: *APHO, 2011*

Table 4: Predicted prevalence of obesity in North Somerset, 2015-2020

Year	Obesity continues to rise at current rate		2010 obesity levels maintained	
	Number	Prevalence	Number	Prevalence
2015	14,437	7.6%	14,341	7.6%
2020	16,334	8.0%	15,864	7.8%

Source: *APHO, 2011*

Dementia

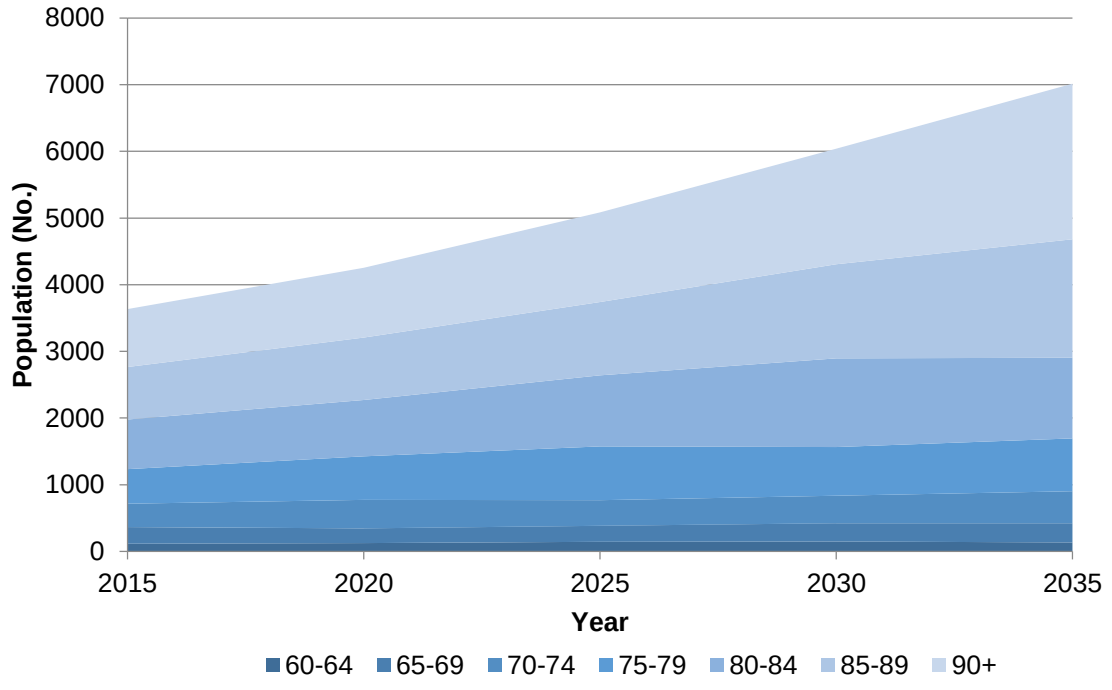
In North Somerset, it is estimated that 1.79% of people are living with dementia, which is higher than the England average (Department of Health, 2014). Table 5 below shows the predicted increase in the prevalence of dementia over the next 20 years for males and females. What is clear is that many more females will develop dementia and the older ages are at a greater risk. Currently, it suggests that in 2015, 3,634 people will have dementia and by 2035 this will increase to 7,012 people; this is represented in the figure below (Figure 3). This is important to highlight as a public health concern as dementia costs the UK economy approximately £23 billion per year, which is higher than both cancer (£12 billion per year) and heart disease (£8 billion per year) combined (Alzheimer's Society, 2014).

Table 5: Projected Prevalence of Dementia in North Somerset by gender, 2015-2035

Age Group	2015		2020		2025		2030		2035	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
60-64	56	60	59	65	70	74	72	77	67	70
65-69	105	139	93	122	99	133	119	149	122	157
70-74	177	180	211	225	186	201	202	219	239	249
75-79	217	310	276	376	334	475	297	422	323	462
80-84	299	445	350	491	453	608	556	772	515	702
85-89	242	545	302	606	378	707	513	869	634	1111
90+	181	660	271	759	384	924	520	1188	723	1518
Total	1276	2339	1562	2645	1904	3123	2278	3696	2623	4269

Based on the 2014 consensus estimates of the population prevalence (%) of late-onset dementia
Source: *Alzheimer's Society, 2014*

Figure 3: Projected Prevalence of dementia in North Somerset, 2015-2035.



Source: *Alzheimer's Society, 2014*

Version Control

Date	Author	Version	Amended Sections	Summary of Change	Changes to Recommendations
Jul 15	Nina Robery	V 1.0	All updated	Disease Prevalence Models for CVD, COPD, CHD, Hypertension, Obesity, Diabetes and Dementia	

Title:	North Somerset JSNA – Disease Prevalence Models		
Owner:	Nina Robery	**Version Date:**	Jul 2015
Version:	1.0	**Review Date:**	Jul 2016