# Supporting evidence for the North of Scotland Regional Clinical Strategy<sup>1</sup>

# North of Scotland demographics

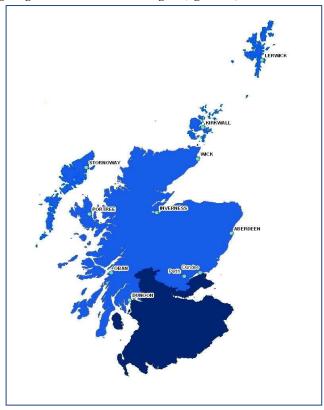
#### 1. Introduction

This document describes the demographics of the North of Scotland and has been prepared as part of ongoing work by the North of Scotland Planning Group to develop a Regional Clinical Strategy for the North of Scotland. The strategy will describe the vision and plans for effective regional working and delivery of high-quality, sustainable services across the North of Scotland. This document aims to support the development of the strategy and begins by describing the geographical area covered by the North of Scotland NHS Boards before summarising the current population estimates and also the population projections up to the year 2037. Although it has primarily been prepared to support the development of the Regional Clinical Strategy, it is hoped the document will provide a useful resource to support other planning activity across the North of Scotland.

#### 2. Area description

As shown in the map below, the North of Scotland region incorporates the following NHS Boards – NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles. It is acknowledged that the NHS Board boundaries, in addition to the number of Scottish territorial boards, may change in the future but the following document is based on the current situation.

Figure 1: Map of Scotland highlighting the North of Scotland region (light blue)



<sup>&</sup>lt;sup>1</sup> This paper was prepared on behalf of the North of Scotland Public Health Network (NoSPHN). Comments are welcome to <u>jennywares@nhs.net</u> or <u>pip.farman@nhs.net</u>.

The North of Scotland region spans a huge geographical area covering 54,344 square kilometres and accounting for 70% of Scotland's land mass.<sup>1</sup>

Table 1: Area (square kilometres) covered by the North of Scotland NHS Boards (Data sourced from NRS)<sup>1</sup>

NHS Board	Area (square kilometres)
NHS Grampian	8,736
NHS Highland (Highland + Argyll & Bute)	32,566 (25,657 + 6,909)
NHS Tayside	7,527
NHS Orkney	989
NHS Shetland	1,467
NHS Western Isles	3,060
North of Scotland (total)	54,344
Scotland (total)	77,910

The North of Scotland region includes a large number of inhabited and uninhabited islands. At the time of the 2011 census there were 93 inhabited islands (including those joined to the mainland by causeways or bridges). The total population of these islands was 103,700 which equated to 2% of the population of Scotland. The population of each of the islands ranged from just one person living on each of Danna, Eilean da Mheinn, Inchfad, Inner Holm and Soay to over 21,000 people living on Lewis and Harris.<sup>2</sup>

The large geographical area covered by the North of Scotland NHS Boards equates to significant distances and thus travel times between different areas within the region. This is illustrated within the table below:<sup>3</sup>

Table 2: Distances and travel times between some of the different regions within the North of Scotland

Area	Area	Distance	Drive time	Flight time
Aberdeen	Edinburgh	127 miles	2 hours 33 minutes	n/a
Inverness	Glasgow	169 miles	3 hours 11 minutes	n/a
Lerwick	Glasgow	317 miles	n/a	1 hour 30 minutes
Stornoway	Inverness	94 miles	n/a	40 minutes
Wick	Campbeltown	297 miles	6 hours 56 minutes	n/a

Having said this, the use of travel times between areas does not provide the complete picture and can considerably underestimate total journey times as illustrated within the following scenarios. Depending upon timings it may not be possible to undertake the return journey on the same day necessitating an overnight stay which thus incurs additional time and expense.

# Patient 1: Rhenigidale, Western Isles to Raigmore Hospital, Inverness

For an individual living in Rhenigidale, it would take 56 minutes by car to travel to Stornoway Airport. At least one hour would then need to be left to allow sufficient time to check in. The flight time from Stornoway Airport to Inverness Airport is 40 minutes. It would then take a further 35 minutes to travel by bus to Raigmore Hospital from the airport.

Therefore, for an individual with an appointment at Raigmore Hospital, a minimum of almost three and a half hours travelling time (one-way) would be required.

#### Patient 2: Melvich, Sutherland to the Aberdeen Royal Infirmary

For an individual from Melvich, it would take 52 minutes to travel to Wick train station by car. The train from Wick to Aberdeen would take approximately seven hours. It would then take a further 10 minutes to travel by taxi to Aberdeen Royal Infirmary.

The journey for a patient travelling to Aberdeen Royal Infirmary from Melvich would therefore require at least eight hours travelling time in addition to an overnight stay.

#### 3. Population estimates (mid-2015)

#### 3.1 Background to the mid-year population estimates

The decennial census is the source of the most authoritative population estimates. The most recent UK census was undertaken in 2011. In the years between each census, the National Records of Scotland (NRS) produce annual updates which incorporate the population change in the preceding 12 months in order to determine the annual mid-year estimates. The factors contributing to population change, and thus accounted for as part of the calculation of the mid-year estimates, are births, deaths and migration. The most recent published population estimates were for mid-2015.

## 3.2 Mid-2015 population estimates by NHS Board<sup>1</sup>

The mid-2015 population estimate for Scotland across all ages was 5,373,000. There was a fairly even gender split with 48.6% of the population being male (n=2,610,469) and 51.4% female (n=2,762,531).

Across the North of Scotland this equates to a population estimate of 1,395,800 with 687,155 males (49.2%) and 708,645 females (50.8%). Despite covering almost 70% of Scotland's land mass, the North of Scotland region accounts for only 26% of the total Scotlish population. The breakdown by North of Scotland NHS Board and by gender is shown below in table 3.

Table 3: Mid-2015 population estimate by NHS Board plus breakdown by gender (Data sourced from NRS¹)

NHS Board	Population	Male		Female	
	estimate	Population	Proportion	Population	Proportion
		estimate		estimate	
NHS Grampian	587,820	291,775	49.6%	296,045	50.4%
NHS Highland	321,000	157,652	49.1%	163,348	50.9%
Highland	234,110	114,677	49.0%	119,433	51.0%
Argyll and Bute	86,890	42,975	49.5%	43, 915	50.5%
NHS Tayside	415,040	201,786	48.6%	213,254	51.4%
NHS Orkney	21,670	10,785	49.8%	10,885	50.2%
NHS Shetland	23,200	11,783	50.8%	11,417	49.2%
NHS Western Isles	27,070	13,374	49.4%	13,696	50.6%
North of Scotland (total)	1,395,800	687,155	49.2%	708,645	50.8%
Scotland (total)	5,373,000	2,610,469	48.6%	2,762,531	51.4%

# 3.3 Mid-2015 population estimates by age-group<sup>1</sup>

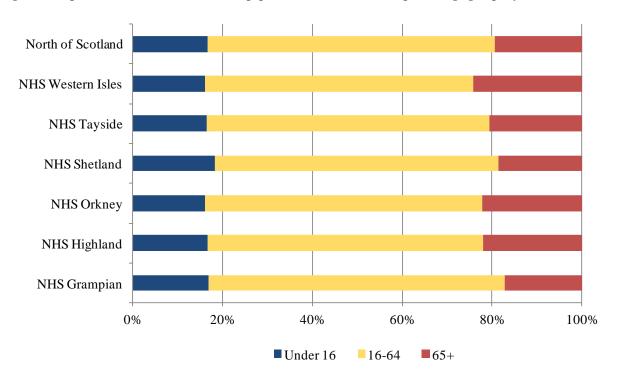
Data produced by NRS are available by single year of age for each NHS Board and administrative area. The information was collated to illustrate the mid-2015 population estimates within the following agegroups: under 16 years, 16-64 years and over 65 years as shown within table 4.

Table 4: Mid-2015 population estimate for specific age-groupings across the North of Scotland Boards (Data sourced from  $NRS^1$ )

NHS Board	Under 16		16-64		65+		
	Population	%	Population	%	Population	%	Total
	estimate		estimate		estimate		population
NHS Grampian							
	99,209	16.9	388,085	66.0	100,526	17.1	587,820
NHS Highland	53,248	16.6	197,351	61.5	70,401	21.9	321,000
Highland	39,956	17.1	145,077	62.0	49,077	21.0	234,110
A&B	13,292	15.3	52,274	60.2	21,324	24.5	86,890
NHS Orkney	3,489	16.1	13,367	61.7	4,814	22.2	21,670
NHS Shetland	4,254	18.3	14,619	63.0	4,327	18.7	23,200
NHS Tayside	68,070	16.4	261,779	63.1	85,191	20.5	415,040
NHS Western							
Isles	4,348	16.1	16,161	59.7	6,561	24.2	27,070
North of							
Scotland (total)	232,618	16.7	891,362	63.9	271,820	19.5	1,395,800
Scotland (total)	912,262	17.0	3,477,740	64.7	982,998	18.3	5,373,000

Figure 2 illustrates the proportion of the estimated mid-2015 population within each of the specified agegroups by NHS Board.

Figure 2: Proportion of the estimated mid-2015 population within each of the specified age-groups by NHS Board



For the North of Scotland as a whole, the majority of the population was aged between 16 and 64 years with 63.9% (n=271,820) of the population within this working age-group. 16.7% of the population was aged under 16 years and 19.5% of the population was aged over 65 years.

This trend was seen within all of the North of Scotland NHS Boards albeit to differing degrees. NHS Western Isles had the smallest proportion of their total population aged within the 16-64 age group with 59.7% (n=16,161) within this age-grouping. NHS Grampian had the largest proportion of their total population aged within the 16-64 age-group with 66% (n=388,085) of the population within this age-grouping.

The proportion of the population aged under 16 years ranged from 15.3% for Argyll & Bute to 18.3% for NHS Shetland. Similarly, the proportion of the population aged over 65 years ranged from 17.1% (n=587,820) in NHS Grampian to 24.5% (n=86,890) in Argyll & Bute.

Table 5 shows the proportion of the estimated mid-2015 population within each of the NHS Boards for specific age-groups.

The greatest proportion of the estimated mid-2015 population fell within the 0-15 year age-group for all of the NHS Boards with proportions ranging from 16.1% for both NHS Orkney and NHS Western Isles and 18.3% for NHS Shetland.

Unsurprisingly, the smallest proportion of the population fell within the 85+ year age-group with proportions ranging from 2.1% for both NHS Grampian and NHS Shetland and 3.1% for NHS Western Isles.

Table 5: Proportion (%) of the estimated mid-2015 population within specific age-groups by NHS Board (Data sourced from  $NRS^1$ )

	Proportion (%) by age-group								
NHS Board	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
NHS Grampian	16.9	11.6	14.5	13.1	14.4	12.3	9.5	5.5	2.1
NHS Highland	16.6	9.7	10.6	11.4	15.4	14.5	12.4	7.0	2.5
Highland	17.1	9.5	11.1	11.7	15.4	14.3	11.9	6.6	2.4
Argyll and Bute	15.3	10.0	9.3	10.6	15.4	14.9	13.8	7.9	2.8
NHS Orkney	16.1	9.5	10.5	11.3	15.8	14.6	12.5	7.1	2.6
NHS Shetland	18.3	10.3	11.7	12.8	15.0	13.2	10.8	5.8	2.1
NHS Tayside	16.4	12.0	12.6	11.2	14.4	12.9	11.0	6.8	2.7
NHS Western Isles	16.1	8.5	9.5	11.8	15.3	14.7	13.2	7.9	3.1
North of Scotland (total)	16.7	11.2	12.8	12.1	14.7	13.1	10.8	6.3	2.4
Scotland (total)	17.0	11.4	13.2	12.5	14.9	12.7	10.1	6.0	2.2

Figure 3 (overleaf) illustrates the trends graphically. NHS Tayside, NHS Shetland and NHS Grampian tend to have a greater proportion of their populations within the younger age groups (aged less than 35 years) whereas NHS Western Isles, NHS Orkney and NHS Highland tend to have a greater proportion of their populations within the 65+ year age group.

18% 16% 14% 12% 10% 8% 6% 4% 2% 0% NHS Highland NHS Shetland NHS Tayside NHS Grampian NHS Orkney NHS Western Isles NHS Board **45-54** ■0-15 **16-24** 25-34 **35-44 55-64** 65-74 75-84 **85**+

Figure 3: Proportion of the estimated mid-2015 population within each of the specified age-groups by NHS Board

#### 3.4 Deprivation

One of the tools for assessing deprivation in Scotland is the Scottish Index of Multiple Deprivation (SIMD). The SIMD links routinely collected data from multiple domains, such as health, income and employment, within small areas referred to as datazones. The datazones are then ranked from the most deprived (ranked 1) to the least deprived (ranked 6,505).

One of the criticisms of the SIMD is that it may not accurately identify deprivation in rural areas given that datazones within more rural areas cover far larger areas than those within urban areas leading to a greater mix of deprived and less deprived individuals. Furthermore, rural deprivation tends to be more spatially dispersed than in urban areas. Having said this, the SIMD still provides a useful indication of deprivation in rural areas although further work is being undertaken to review how it can better support the identification of issues within rural areas.<sup>4</sup>

Figure 4 illustrates the distribution of the 15% most deprived datazones in Scotland. As shown, all of the four local authorities with none of their population living in the 15% most deprived datazones are within North of Scotland NHS Boards, namely Eilean Siar, Moray, Orkney Islands and Shetland Islands.

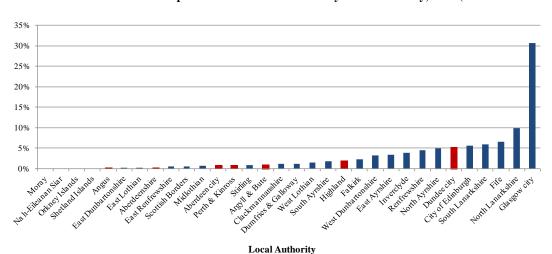
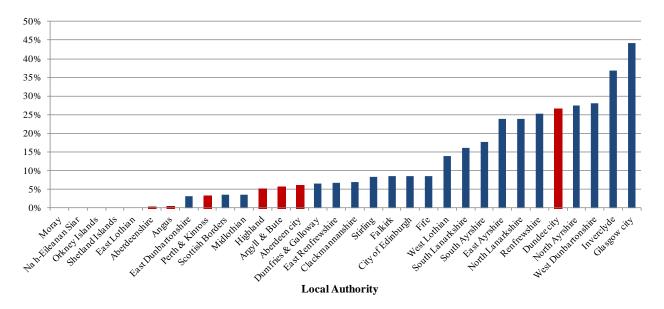


Figure 4: Distribution of the 15% most deprived datazones in Scotland by Local Authority, 2016 (sourced from ScotPHO<sup>5</sup>)

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Figure 5 illustrates the proportion of datazones within each Local Authority that are within the 15% most health deprived in Scotland. Over a quarter (27%) of datazones in Dundee city are within the 15% most deprived datazones in relation to health whereas Orkney, Shetland, Na h-Eileanan Siar and Moray have none of their datazones in the 15% most health deprived.

Figure 5: Proportion of datazones within each Local Authority that are within the 15% most health deprived in Scotland, 2016 (data sourced from ScotPHO<sup>5</sup>)



#### 4. Population projections

#### 4.1 Population projections<sup>6</sup>

(all ages)

NRS has also calculated population projections up to 2037. These give an indication of future trends in population by age and sex. For Scotland as a whole, the projected population in 2037 is 5,780,371 which is a 9% increase from baseline population figures for 2012.

Across the North of Scotland, the projected population in 2037 is 1,540,239. The gender split between males and females within the North of Scotland population is expected to stay fairly static.

	2012		2027		2037				
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
North of	1,377,280	675,492	701,788	1,482,259	731,547	750,712	1,540,239	762,068	778,171
Scotland		(49.0%)	(51.0%)		(49.4%)	(50.6%)		(49.5%)	(50.5%)

Table 6: Population projections for the North of Scotland region by gender (Data sourced from NRS<sup>6</sup>)

The population projections for each of the NHS Boards within the North of Scotland are shown for specified age-groups within the following tables and figures. For the majority of the NHS Boards in the North of Scotland the population is projected to increase by 2037. Having said this, two NHS Boards are projected to decrease in population size by 2037 (NHS Highland and NHS Western Isles).

Table 7: Population projections for NHS Grampian by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	573,420	616,440	639,183	679,490
0-15	97,323	108,691	112,211	116,425
16-29	110,565	103,028	103,488	114,509
30-49	159,448	167,070	176,472	178,861
50-64	112,043	120,126	116,626	115,920
65-74	51,467	62,597	65,731	71,765
75+	42,574	54,928	64,655	82,010

Figure 6: Population pyramids for the NHS Grampian population  $(2012 \ and \ 2027)$ 

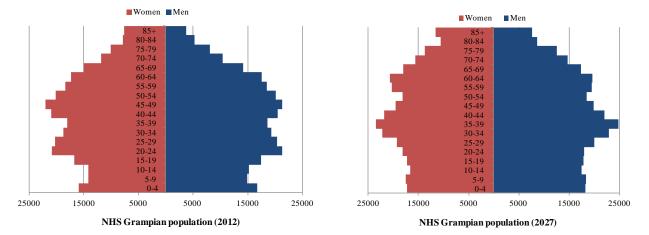


Table 8: Population projections for NHS Highland by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	319,810	322,251	322,761	318,676
0-15	54,950	52,561	51,636	49,423
16-29	47,138	44,138	41,415	39,668
30-49	81,798	71,684	73,246	70,473
50-64	70,721	72,251	66,773	57,425
65-74	36,640	42,452	43,562	45,102
75+	28,563	39,165	46,129	56,585

Figure 7: Population pyramids for the NHS Highland population (2012 and 2027)

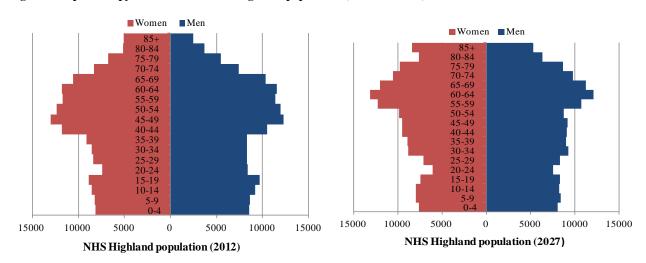


Table 9: Population projections for NHS Orkney by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	21,530	22,136	22,496	22,724
0-15	3,572	3,621	3,652	3,463
16-29	3,306	2,736	2,505	2,687
30-49	5,504	5,244	5,563	5,328
50-64	4,698	4,875	4,594	4,137
65-74	2,601	2,841	2,903	3,119
75+	1,849	2,819	3,279	3,990

Figure 8: Population pyramids for the NHS Orkney population (2012 and 2027)

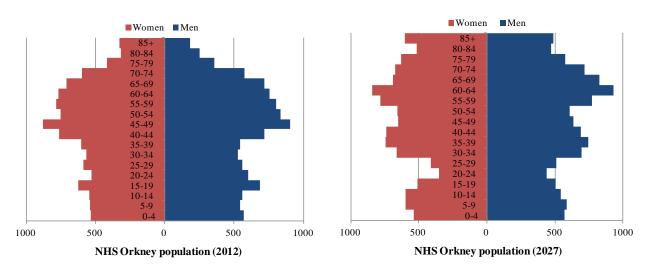


Table 10: Population projections for NHS Shetland by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	23,210	24,207	24,671	25,147
0-15	4,404	4,314	4,329	4,281
16-29	3,691	3,400	3,141	3,053
30-49	6,333	5,933	6,008	5,832
50-64	4,800	5,271	5,212	4,758
65-74	2,302	2,830	2,999	3,346
75+	1,680	2,459	2,982	3,877

Figure 9: Population pyramids for the NHS Shetland population (2012 and 2027)

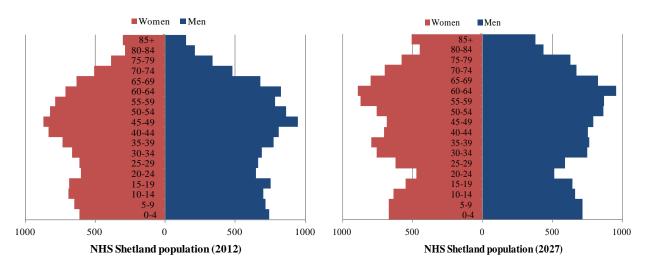


Table 11: Population projections for NHS Tayside by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	411,750	434,282	447,137	469,606
0-15	68,676	72,406	75,848	79,478
16-29	76,842	76,422	74,181	78,126
30-49	103,850	103,613	112,381	118,278
50-64	82,032	86,498	80,142	74,211
65-74	42,570	47,995	50,545	53,546
75+	37,780	47,348	54,040	65,967

Figure 10: Population pyramids for the NHS Tayside population (2012 and 2027)

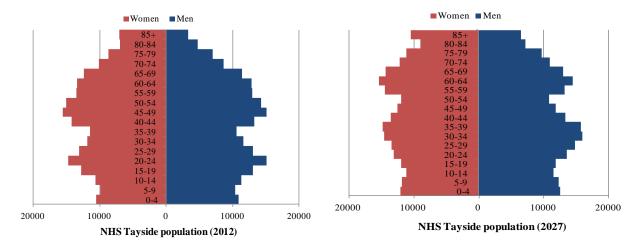
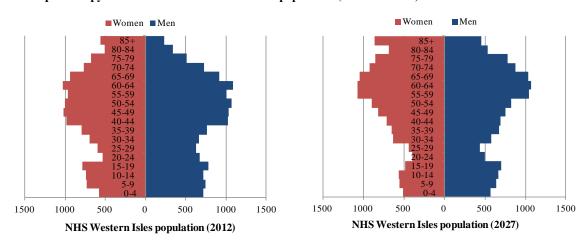


Table 12: Population projections for NHS Western Isles by age-group (Data sourced from NRS<sup>6</sup>)

	2012	2022	2027	2037
All Ages	27,560	26,469	26,011	24,596
0-15	4,574	3,999	3,756	3,311
16-29	3,667	2,989	2,714	2,293
30-49	6,986	5,798	5,520	4,807
50-64	6,157	6,300	5,974	5,049
65-74	3,344	3,776	3,884	4,101
75+	2,832	3,607	4,163	5,035

Figure 11: Population pyramids for the NHS Western Isles population (2012 and 2027)



# 4.2 Projected percentage population change (2012 based projections)<sup>6</sup>

The percentage population change for each of the NHS Boards for the next two decades is shown in table 13 and figure 12.

 $Table \ 13: Percentage \ population \ change \ (all \ ages) \ across \ the \ North \ of \ Scotland \ NHS \ Boards \ (Data \ sourced \ from \ NRS^6)$ 

Area	2017	2022	2027	2032	2037
NHS Grampian	3.5	7.5	11.5	15.2	18.5
NHS Highland	0.3	0.8	0.9	0.6	-0.4
Highland	1.4	2.8	3.9	4.5	4.5
Argyll & Bute	-2.5	-4.8	-7.2	-10.1	-13.5
NHS Orkney	0.8	2.8	4.5	5.3	5.5
NHS Shetland	2.1	4.3	6.3	7.7	8.3
NHS Tayside	2.4	5.5	8.6	11.5	14.1
NHS Western Isles	-2.3	-4.0	-5.6	-7.9	-10.8

20% 15% 10% 5% 0% -5% -10% -15% 2017 2022 2027 2032 2037 Grampian ---Highland **★**Orkney Shetland **Tayside** Western Isles

Figure 12: Percentage population change (all ages) across the North of Scotland NHS Boards, 2017-2037 <sup>6</sup>

As illustrated within table 13 and figure 12, the majority of the North of Scotland NHS Boards are projected to increase in population size over the next two decades. The percentage increase varies by NHS Board from a 5.5% projected increase for NHS Orkney to a projected 18.5% increase across NHS Grampian. As mentioned earlier, two boards within the North of Scotland, NHS Highland and NHS Western Isles, are projected to decrease in population size with percentage reductions of 0.4% and 10.8% respectively. Furthermore, there is quite a stark contrast within the two council areas encompassed by NHS Highland with the population of Highland Council area projected to increase by 4.5% whereas the population of Argyll & Bute Council area is projected to decrease by 13.5%.

In addition to the data pertaining to all age-groups, datasets have been produced for specific age-groups. Table 14 illustrates the population projections by NHS Board for children aged 0-15 years, those of working ages, those of pensionable ages and those aged more than 75 years. The trends are illustrated graphically in subsequent figures.

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	Children (0-15)		Working Ages		Pensionable Ages		75+					
Area	2017	2027	2037	2017	2027	2037	2017	2027	2037	2017	2027	2037
NHS Grampian	4	15	20	4	10	15	2	14	29	10	52	93
NHS Highland	-4	-6	-10	1	-2	-7	3	14	25	14	61	98
NHS Orkney	-3	2	-3	1	0	-1	3	16	29	24	77	116
NHS Shetland	-3	-2	-3	2	3	0	6	24	44	19	78	131
NHS Tayside	-0	10	16	4	8	11	-0	9	20	9	43	75
NHS Western Isles	-7	-18	-28	-2	-8	-19	1	9	20	11	47	78

Western Isles Tayside Shetland NHS Board Orkney Highland Grampian Scotland 10% -20% -10% 20% 30% 40% 50% 60% 70% 80% Projected percentage change in population by 2027

Figure 13: Projected percentage change in population by 2027 by NHS Board (Data sourced from NRS<sup>6</sup>)

# 4.2.1. Child population (0-15 years)

**1**75+

Pensionable Ages

By 2037 the projected population of those aged 0-15 years is expected to decrease in the majority of the North of Scotland NHS Boards. This population group is only expected to increase in two NHS Boards, NHS Grampian and NHS Tayside with projected population changes of 20% and 16% respectively.

■Working Ages

■ Children (0-15)

All ages

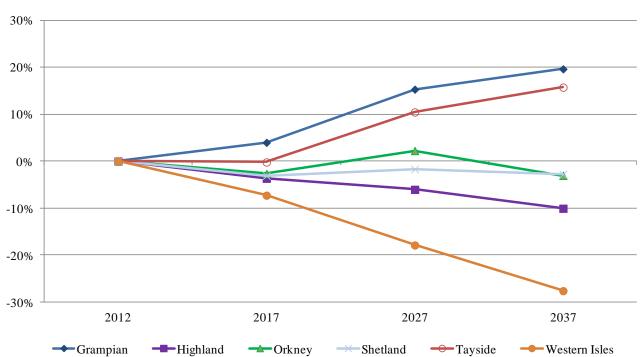


Figure 14: Projected percentage population change between 2012 and 2037 for those aged 0-15 years by NHS Board<sup>6</sup>

#### 4.2.2. Working age population

By 2037, the projected population of those of a working age is expected to decrease in the majority of the North of Scotland NHS Boards. As per the trends seen within the child population, both NHS Grampian and NHS Tayside are the two North of Scotland NHS Boards which are expected to have an increase in this population group with projected percentage changes of 15% and 11% respectively.

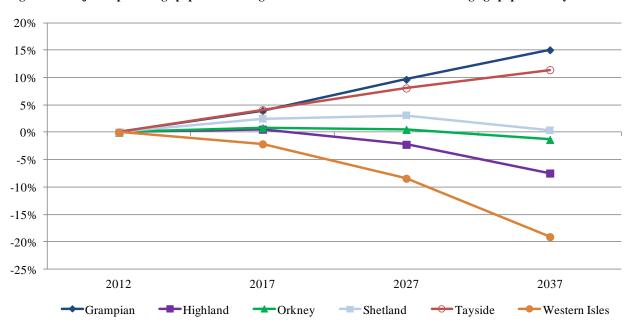


Figure 15: Projected percentage population change between 2012 and 2037 for the working age population by NHS Board<sup>6</sup>

## 4.2.3. Pensionable age

The State Pension Age (SPA) is changeable; between 2012 and 2018 the SPA will change from 65 years for men and 61 years for women, to 65 years for both sexes. There will then be a further change between 2019 and 2020 where the SPA will increase from 65 years to 66 years for both men and women. The SPA will then increase again to 67 years for both men and women between 2034 and 2036.

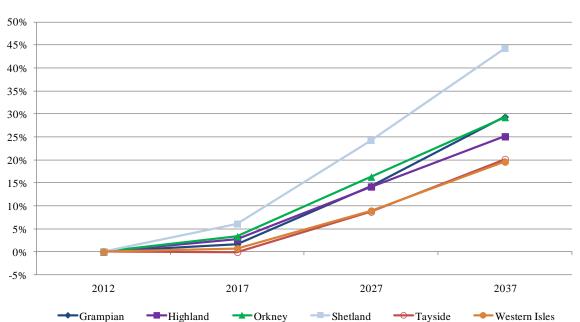


Figure 16: Projected percentage population change by 2037 for those of a pensionable age by NHS Board<sup>6</sup>

As illustrated within figure 16, the projected population of those of a pensionable age is expected to increase in all of the North of Scotland NHS Boards. The projected percentage population increase varies from 20% for both NHS Tayside and NHS Western Isles to 44% for NHS Shetland.

## 4.2.4. Population aged over 75 years

Over the next two decades the population aged over 75 years is projected to increase dramatically for each of the North of Scotland NHS Boards. The projected percentage population increase varies from 75% for NHS Tayside to 131% for NHS Shetland.

140% 120% 100% 80% 60% 40% 20% 0% 2012 2017 2027 2037 -Grampian ---Highland ----Shetland Western Isles Orkney Tayside

Figure 17: Projected percentage population change by 2037 for those aged over 75 years by North of Scotland NHS Board<sup>6</sup>

#### 4.2.5 Population aged 65 years and over by 2022

Population projections have been reviewed specifically in relation to individuals aged 65 years and above for the next five years to 2022.

Table15: Projected population aged 65 years and over by the year 2022 by North of Scotland NHS Board (Data sourced from  $NRS^6$ )

Area	2012			2022			
	Persons	Males Females I		Persons	Males	Females	
NHS Grampian	94,041	41,745	52,296	117,525	54,494	63,031	
NHS Highland	65,203	29,309	35,894	81,617	37,570	44,047	
NHS Orkney	4,450	2,085	2,365	5,660	2,745	2,915	
NHS Shetland	3,982	1,859	2,123	5,289	2,583	2,706	
NHS Tayside	80,350	35,110	45,240	95,343	42,939	52,404	
NHS Western Isles	6,176	2,710	3,466	7,383	3,347	4,036	

Table 16: Projected population aged 65 years and over by the years 2017 and 2022 plus percentage change from baseline by North of Scotland NHS Board (Data sourced from NRS<sup>6</sup>)

Area	2012 baseline population	Projected population aged 65+ (2017)	opulation aged change from		Percentage change from 2012 baseline	
NHS						
Grampian	94,041	105,759	12.5%	117,525	25.0%	
NHS						
Highland	65,203	73,972	13.4%	81,617	25.2%	
NHS Orkney	4,450	5,063	13.8%	5,660	27.2%	
NHS Shetland	3,982	4,668	17.2%	5,289	32.8%	
NHS Tayside	80,350	88,071	9.6%	95,343	18.7%	
NHS Western						
Isles	6,176	6,832	10.6%	7,383	19.5%	

# 5. Proportion of households headed by someone over 60<sup>7</sup>

Across Scotland, there are projected increases in the numbers of households headed by people in almost all age groups although, due to the ageing population, the greatest increases are for households headed by someone aged 65 or over. As shown within table 15, the increase is particularly marked for those aged 75 years and over. All NHS Boards are expected to experience a projected increase in the percentage of households headed by someone over 75 years by 2037. For data pertaining to 2012, the percentage of households headed by someone aged over 75 varied from 12% for NHS Shetland to 16% for NHS Western Isles. However for 2037, the projected percentage of households headed by someone aged 75 years and over varies from 19.3% for NHS Grampian to 29% for NHS Western Isles.

Table 15: Projected percentage of households by NHS Board and by age group, 2012 and 2037 (Data sourced from NRS<sup>7</sup>)

Area	2012		2037			
	60-74	75+	60-74	75+		
NHS Grampian	21.7	12.3	21	19.3		
NHS Highland	26.5	14.5	25.5	27.5		
NHS Orkney	26	14	22	26		
NHS Shetland	24	12	26	22		
NHS Tayside	23.3	14.3	20.3	21		
NHS Western Isles	28	16	29	29		

Figure 18 illustrates the increase in the percentage of households headed by someone aged over 60 years by 2037. As shown, two NHS Boards, NHS Highland and NHS Western Isles, are expected to have more than 50% of their households headed by someone aged over 60 years by 2037.

70% 60% 50% 40% 30% 20% 10% 0% **NHS** Grampian NHS Highland NHS Orkney NHS Shetland NHS Tayside NHS Western Isles **2**012 **2**037

Figure 18: Projected percentage of households aged over 60 years by NHS Board, 2012 and 2037  $^{7}$ 

#### 6. Data limitations

There are some limitations of the findings detailed in this report. Firstly, projected percentage changes in population size are highly dependent upon the denominator and this must be considered when comparing NHS Boards with such variable population sizes.

Furthermore, population projections are trend-based and so assumptions for future levels of deaths, births and migration are based on observed levels for the previous five years. As such, it is not possible to assess the impact of any future policy initiatives or social and economic changes. Lastly, as with any projection, the further they are taken into the future the less reliable the projection.

#### **References:**

<sup>&</sup>lt;sup>1</sup> National Records of Scotland. *Mid-2015 population estimates Scotland and corrected population estimates for mid-2012, mid-2013 and mid-2014*. 2016. Available from: <a href="http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population-population-estimates/mid-year-population-estimates/mid-2015-and-corrected-mid-2012-to-mid-2014/list-of-tables (Accessed 4<sup>th</sup> September 2016)</a>

<sup>&</sup>lt;sup>2</sup> National Records of Scotland. *Scotland's Census 2011: Inhabited islands report*. Edinburgh: National Records of Scotland; 2015.

<sup>&</sup>lt;sup>3</sup> Distance Calculator and Driving Directions UK. 2015. Available from: http://distancecalculator.globefeed.com/UK Distance Calculator.asp (Accessed 4th September 2016)

<sup>&</sup>lt;sup>4</sup> Scottish Government. *Income*, *employment and access deprived rural datazones*. 2011. Available from: <a href="http://www.gov.scot/Topics/Statistics/SIMD/deprivedruralpaper">http://www.gov.scot/Topics/Statistics/SIMD/deprivedruralpaper</a> (Accessed 24th October 2016)

<sup>&</sup>lt;sup>5</sup> Scottish Public Health Observatory. *Deprivation: data*. 2016. Available from: <a href="http://www.scotpho.org.uk/life-circumstances/deprivation/data">http://www.scotpho.org.uk/life-circumstances/deprivation/data</a> (Accessed 24th October 2016)

<sup>&</sup>lt;sup>6</sup> National Records of Scotland. *Sub-National Population Projections*. 2016. Available from: <a href="http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population-projections/sub-national-population-projections">http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-projections/sub-national-population-projections</a> (Accessed 4<sup>th</sup> September 2016)

<sup>&</sup>lt;sup>7</sup> National Records of Scotland. *Household Projections for Scotland*, 2012-based. 2016. Available from: <a href="http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/household-projections/household-projections-for-scotland-2012-based">http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/household-projections-for-scotland-2012-based</a> (Accessed 6th September 2016)