



Skye and Lochalsh

Population health status

Paper 5 of a population needs assessment for Skye and Lochalsh

Epidemiology and Health Science Team

Directorate of Public Health

NHS Highland

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The Epidemiology and Health Science team are part of the Directorate of Public Health of NHS Highland and provide specialist skills in the areas of epidemiology, evaluation and the evidence base for public health functions.

Epidemiology and Health Science Team
Directorate of Public Health
NHS Highland
Larch House
Stoneyfield Business Park
Inverness
IV2 7PA

Telephone: 01463 704813

Email: c.hunterrowe@nhs.net

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Introduction

This is the fifth report in a series that will contribute to a population needs assessment in relation to adult health and social care services for Skye and Lochalsh. Reference is also made to the area of South West Ross that includes Lochcarron.

A core component of any needs assessment is a clear understanding of the underlying population health status that reflects the context in which health and social care services need to operate. The aim of this report is to give an overview of health issues relating to the population of Skye and Lochalsh using available data and evidence. Context is given by providing comparisons to the Highland and national Scottish values, or by including trends over time.

The first report in the series looked at the demography and population dynamics of the area using available population estimates and projections.¹ The second report reviewed the social context of the population health of the area through the lens of deprivation.² The seasonal population visiting Skye and Lochalsh and the associated impact on health service activity was reviewed in the third report.³ The fourth report provided an overview of mortality trends and main causes of death in the area.⁴

Further details of these reports are available in the Project Initiation Document (PID).⁵

The timescale for the epidemiological and comparative part of the needs assessment is from April to June 2019.

Background

The aim of this report is to bring together epidemiological information from a variety of sources in order to give an overview of the health issues of people resident in Skye and Lochalsh. This report provides:

- An overview of population health status, including life expectancy, self-reported health, limiting long-term conditions, disability, the prevalence of chronic conditions and clinical risk factors in the Skye and Lochalsh area
- Estimates of the prevalence of multimorbidity and multiple complex needs based on the scientific literature for Skye, Lochalsh and West Ross
- Projections of future morbidity patterns, highlighting the key themes of dementia, frailty and dependency, and end of life care.

All the data presented in this report are residence-based to aid public health interpretation and understanding. Published indicators are used wherever possible, using data available from a range of sources, including Scotland's Census and the Scottish Public Health Observatory.

Prevalence modelling is also used to estimate the number of people with a particular condition where direct evidence is not available. This technique applies estimates from surveys or published studies to the Skye and Lochalsh population and can also be adapted to predict future numbers. Modelled estimates and projections become less reliable in small populations⁶ therefore results are only provided for the Skye, Lochalsh and West Ross area overall.

Key Points

- Current life expectancy for males in Skye and Lochalsh varies between 78.5 years in Skye North East and 83.1 years in Skye North West. For females the lowest life expectancy is 82.3 years in Skye North East and the highest is 85.6 years in Lochalsh. No areas in Skye and Lochalsh have a life expectancy estimate significantly lower (worse) than the Highland or Scotland estimate.
- The majority (84 percent) of adults in Skye and Lochalsh self-report their health as 'good' or 'very good'. Four percent reported their health as 'bad' or 'very bad'. Self-reported health is similar across all areas of Skye and Lochalsh and to the overall Highland figure.
- Almost one third (30 percent) of all adults in Skye and Lochalsh have at least one self-reported long-term condition. The most common specified conditions are deafness or partial hearing loss (7 percent), physical disability (6 percent) and mental health conditions (3 percent).
- The most common health conditions on General Practice disease registers are hypertension (16 percent), asthma (7 percent), depression (5 percent), diabetes (5 percent) and coronary heart disease (5 percent).
- Single disease registers do not reflect the prevalence of multimorbidity, which is the coexistence of two or more long-term health conditions. Multimorbidity is common, with one in four adults estimated to be affected. The prevalence of multimorbidity substantially increases with age. There will be an increasing need for the prevention and management of complex multimorbidity in mid and later life.
- Population based prevalence estimates suggest that currently 410 people in Skye, Lochalsh and West Ross are living with dementia, 2 percent of the population. Dementia prevalence estimates for Skye, Lochalsh and West Ross are significantly higher than the overall Highland rate because of higher proportion of older people in the area.
- The number of people with frailty in Skye, Lochalsh and West Ross is estimated to be 910 people, 14 percent of the population aged 60 years and over.
- Over the period 2013 to 2017, four in every five deaths of Skye and Lochalsh residents were likely to have benefitted from palliative care, 105 people each year. Over half of Skye and Lochalsh residents (52 percent) died in hospital, 28 percent died at home and 19 percent died in a care home.
- Increasing life expectancy and the growing numbers of older people, particularly those aged 80 years and over, indicate that increasing numbers of people with complex multimorbidity, frailty, dementia and end of life care needs should be anticipated. Projections for Skye and Lochalsh suggest that numerically they will at least double in the next 20 years.
- The health and wellbeing of future cohorts of older people will be influenced by people's life circumstances and lifestyle factors across the life course. Positive changes in risk factors associated with many health conditions, including poverty and inequality, high body mass index, physical inactivity, diet and smoking at all stages of life can prevent or delay the onset of disease and improve resilience to ill-health.

Life Expectancy

Life expectancy at birth is an estimate of the number of years a newborn child would live if they experienced current local mortality rates throughout their life.⁷ Life expectancy is a broad indicator of the overall health of a population, and used to monitor health and health inequalities.

Life expectancy in Scotland has steadily improved over time for both men and women, though recent research suggests gains in life expectancy trends have stalled in Scotland and some other high income countries in recent years.⁸ Scotland has the lowest life expectancy among the UK constituent countries: life expectancy at birth in 2015-2017 was 2.2 years lower for men and 1.8 years lower for women than that observed in the UK overall.⁹ In Highland life expectancy at birth has improved at a faster rate than either the UK or Scottish average, increasing by 5.1 years for men and 4.0 years for women over 20 years (Table 1).

Table 1: Change in life expectancy at birth over 20 years; UK, Scotland and Highland; 1995-1997 to 2015-2017

Time Period	United Kingdom		Scotland		Highland	
	Males	Females	Males	Females	Males	Females
1995-97	74.2	79.4	72.2	77.9	72.6	78.6
2015-17	79.2	82.9	77.0	81.1	77.8	82.6
Difference	4.9	3.5	4.8	3.2	5.1	4.0

Data source: Office for National Statistics (National Life Tables for UK and constituent countries)¹⁰, National Records of Scotland (Abridged life tables, by sex, age and council area, Scotland 1995-1997 to 2015-2017)^{11,12}

Estimated life expectancy at birth for men and women in the Skye, Lochalsh and South West Ross (SLSWR) area for the five year period 2013-2017 is shown in Table 2. Male life expectancy in Skye South (81.7 years) and Skye North West (83.1 years) is statistically significantly higher than the overall Highland rate (77.9 years) in this time period. For females, Lochalsh (85.6 years) had a significantly higher life expectancy than the Highland average (82.9 years). Skye North East had the lowest life expectancy for both males (78.5 years) and females (82.3 years) in this period.

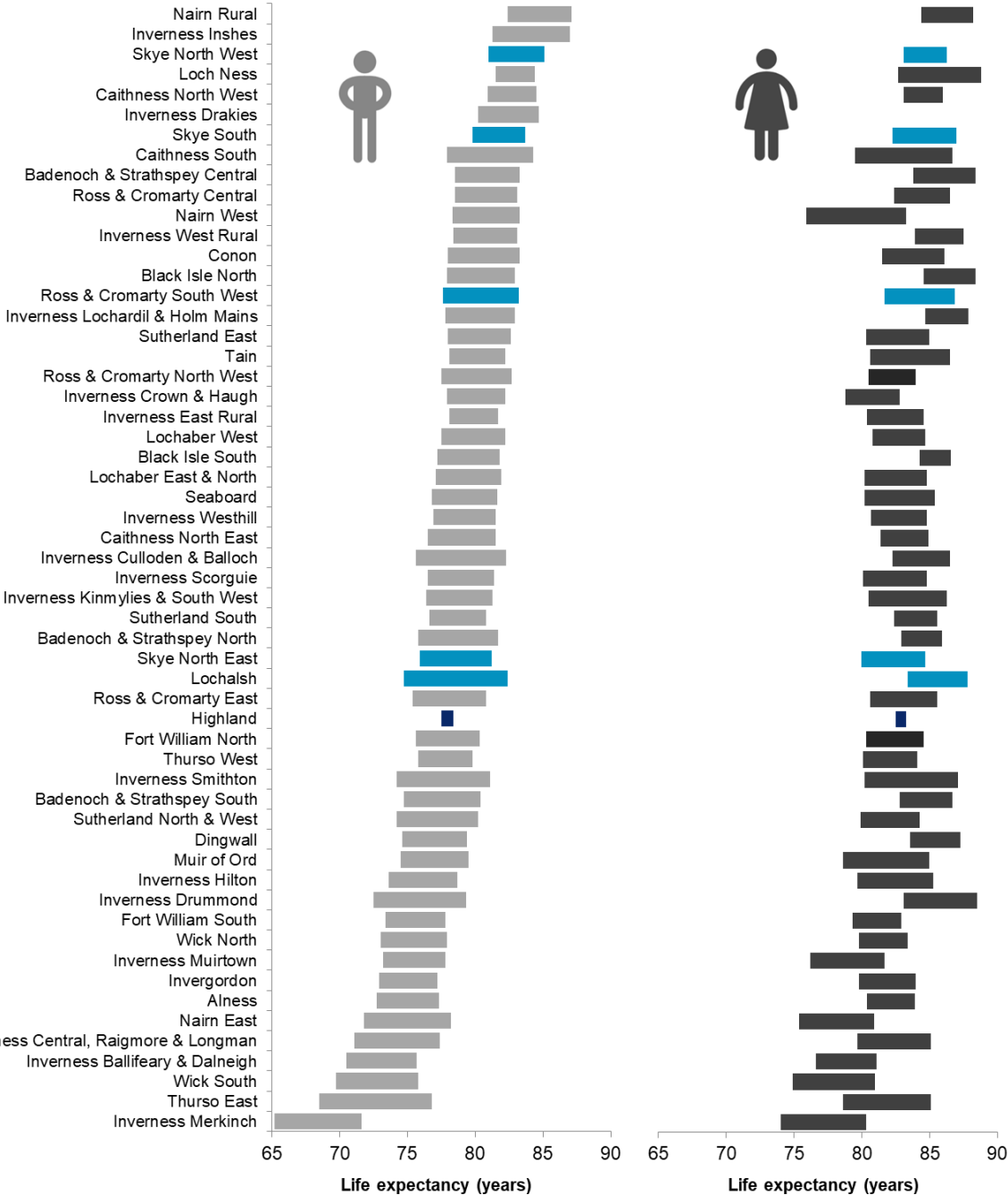
Table 2: Estimated life expectancy at birth (years) by selected intermediate zone, Highland and Scotland; 2013 to 2017

Area	Males	95% Confidence intervals	Females	95% Confidence intervals
Lochalsh	78.5	(74.7, 82.4)	85.6	(83.4, 87.8)
Skye South	81.7	(79.8, 83.7)	84.7	(82.3, 87.0)
Skye North East	78.5	(75.9, 81.2)	82.3	(80.0, 84.7)
Skye North West	83.1	(81.0, 85.1)	84.7	(83.1, 86.3)
Ross & Cromarty South West	80.4	(77.6, 83.2)	84.3	(81.7, 86.9)
Highland	77.9	(77.5, 78.4)	82.9	(82.5, 83.3)
Scotland	77.1	(77.0, 77.2)	81.1	(81.1, 81.2)

Data source: Scottish Public Health Observatory online profiles tool.¹³ Figures highlighted in bold are statistically higher compared to Highland at the 95% confidence level.

A comparison of life expectancy at birth for all intermediate zones in Highland for the period 2013-2017 is shown in Figure 1. The width of the bars illustrates the confidence intervals around each estimate, with the areas of SLSWR highlighted in blue. There are important inequalities in life expectancy among intermediate zones in Highland. For males the gap in life expectancy between the lowest and the highest areas is 16.3 years, whereas the difference for females is 9.3 years. The areas of Skye North West and Skye South have some of the highest male and female life expectancies of all areas in Highland.

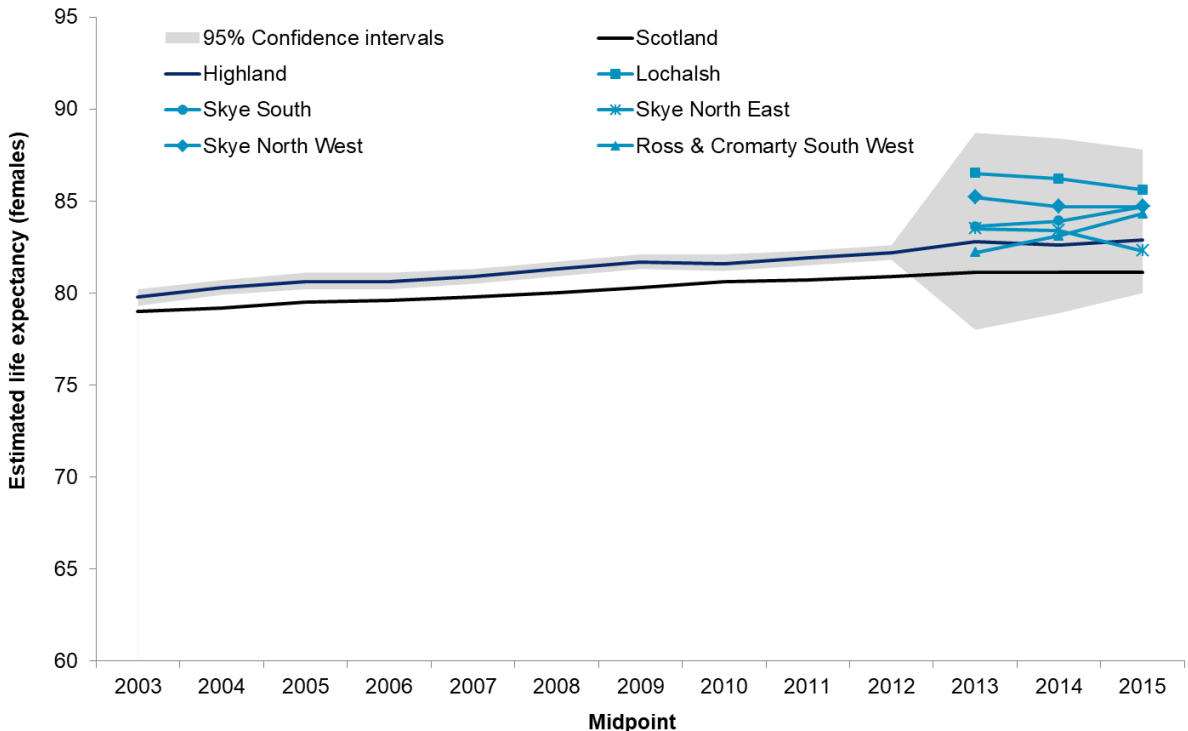
Figure 1: Estimated life expectancy at birth (years) by intermediate zone; Highland, 2013 to 2017



Data source: Scottish Public Health Observatory online profiles tool¹³

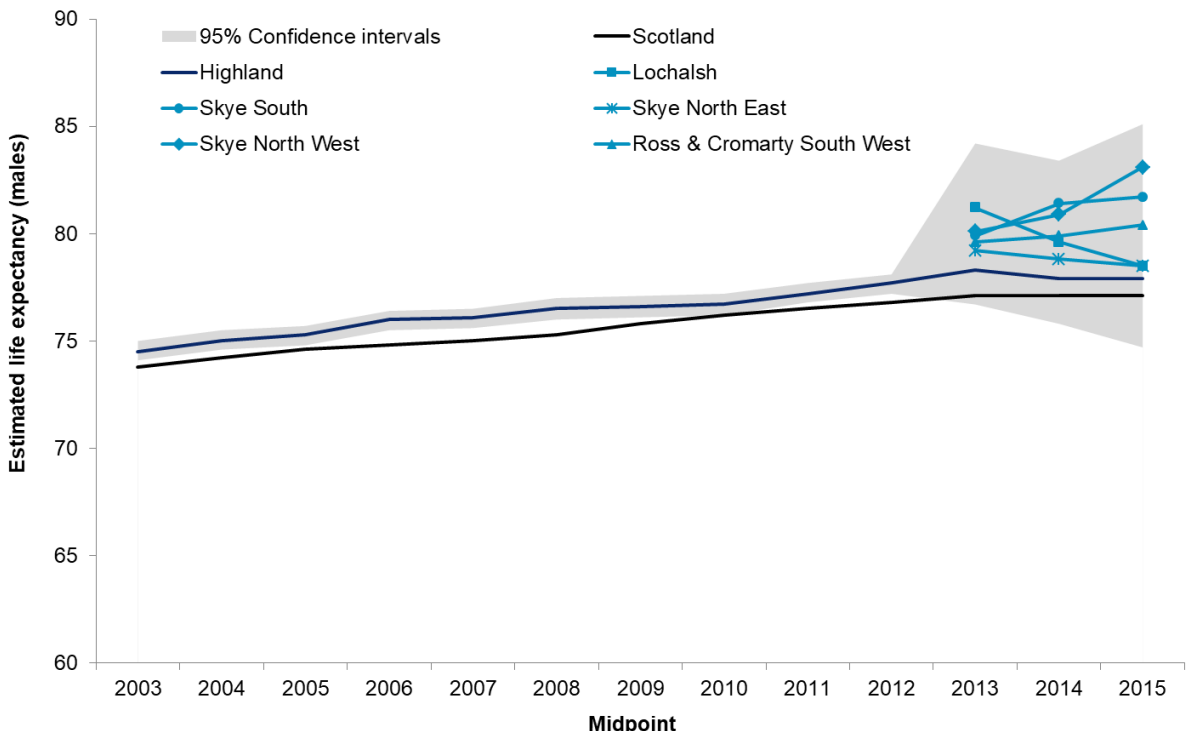
Female values for Inverness Inshes and Inverness Drakies not shown due to small number of events in the five year period

Figure 2: Trend in female estimated life expectancy at birth (years), Skye and Lochalsh and Highland, 2003-2005 to 2013-2017



Data source: Scottish Public Health Observatory online profiles¹³

Figure 3: Trend in male estimated life expectancy at birth (years), Skye and Lochalsh and Highland, 2003-2005 to 2013-2017



Data source: Scottish Public Health Observatory online profiles¹³

The long term trends in life expectancy for females (Figure 2) and males (Figure 3) are shown above. The data for areas in Skye and Lochalsh are only available for a shorter time period, and pooled over a five year time period. The shaded areas represent the 95% confidence intervals around the Highland estimate from midpoint 2003 to 2012, and then around the small area estimates from midpoint 2013 onwards.

The trend data show that both male and female life expectancy has been improving over time, with the estimate for Highland consistently above the estimate for Scotland overall. There is some evidence that life expectancy gains have stalled since 2012-2014, particularly for males. There is a national programme of work currently underway to investigate the nature of these trends.¹⁴ The data also show that life expectancy estimates for the areas in Skye and Lochalsh are much more variable. There are no areas in Skye and Lochalsh which have a life expectancy estimate significantly lower (worse) than the Highland or Scotland estimate.

Self-assessed general health

Population measures of self-reported health are used as a general indicator of the burden of disease, reflecting subjective experiences of both diagnosed and undiagnosed physical and mental health conditions.¹⁵ Self-assessed general health asks individuals to rate their general health status on a five-point scale: very good, good, fair, bad or very bad. Evidence from the Scottish Health Survey reports that self-assessed general health is a good predictor of future use of health and care services, with the proportion of adults self-assessing their health as 'bad' or 'very bad' increasing significantly with age and levels of area deprivation.¹⁵

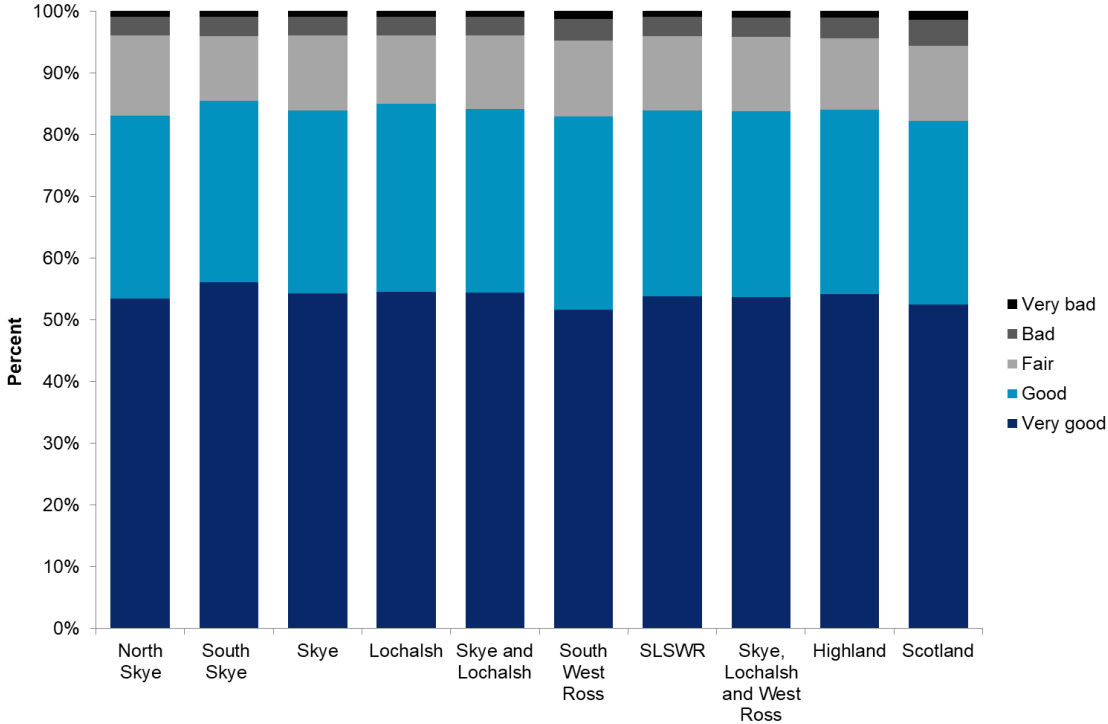
The general health status of the population of Skye and Lochalsh is available from self-reported health status collected as part of the 2011 Census. At the point of survey the proportion of adults rating their health as 'good' or 'very good' in Skye and Lochalsh was 84 percent and the proportion of adults rating their health as 'bad' or 'very bad' was four percent (Table 3). There are no significant differences in self-assessed health between any of the areas within SLSWR and Highland overall (Figure 4).

Table 3: Number and proportion of residents by self-assessed health status, by selected area in SLSWR; 2011

Area	Very good		Good		Fair		Bad		Very bad	
North Skye	3,616	(53%)	2,006	(30%)	881	(13%)	206	(3%)	58	(1%)
South Skye	1,911	(56%)	1,004	(29%)	358	(10%)	107	(3%)	30	(1%)
Skye	5,527	(54%)	3,010	(30%)	1,239	(12%)	313	(3%)	88	(1%)
Lochalsh	1,478	(55%)	823	(30%)	303	(11%)	79	(3%)	26	(1%)
Skye and Lochalsh	7,005	(54%)	3,833	(30%)	1,542	(12%)	392	(3%)	114	(1%)
South West Ross	1,552	(52%)	943	(31%)	369	(12%)	105	(3%)	39	(1%)
SLSWR	8,557	(54%)	4,776	(30%)	1,911	(12%)	497	(3%)	153	(1%)

Data source: Census 2011 Table QS302SC,¹⁶ aggregated 2011 data zones

Figure 4: Self-assessed general health for selected areas of SLSWR, Highland and Scotland; 2011



Data source: Census 2011 Table QS302SC¹⁶, aggregated 2011 data zones

Overall prevalence of long-term health conditions

The National Institute for Clinical Excellence define a long-term health condition as one which has lasted or is expected to last at least 12 months. Conditions can include: defined physical and mental health conditions such as diabetes or schizophrenia, ongoing conditions such as learning disability, symptom complexes such as frailty, sensory impairment such as sight or hearing loss, and problem substance use.¹⁷

The extent of long-term health conditions in the population of Skye and Lochalsh is available from self-reported health status collected as part of the 2011 Census, which asked respondents how they rate their health at the point of survey. In total, 3,802 residents of Skye and Lochalsh reported that they had one or more long-term health condition, 29.5 percent of the total population of the area (Table 4).

The prevalence of long-term health conditions from the 2011 Census reported in North Skye (30.3 percent of the population), South Skye (28.6 percent) and Lochalsh (28.8 percent) are not significantly different. North Skye has a greater number of people with long-term health conditions, reflecting the population distribution outlined in the needs assessment demography report.¹

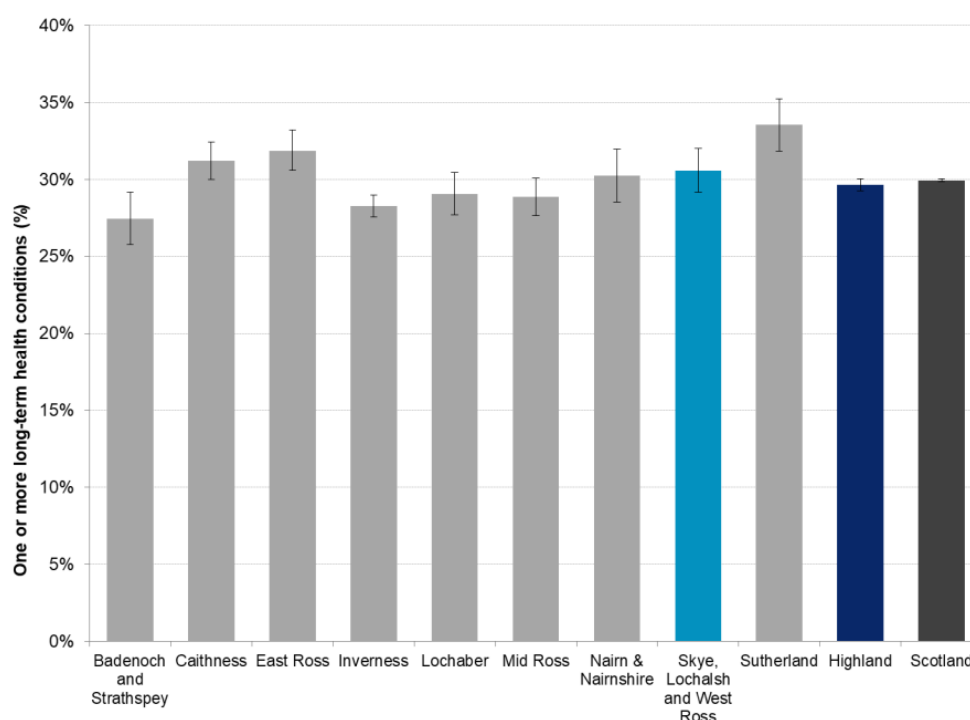
Table 4: Number and proportion of residents with one or more long-term health condition in selected areas of SLSWR; 2011

Area	Number with no conditions	Number with one or more condition	Percent with one of more condition	95% Confidence Intervals
North Skye	4,719	2,048	30.3%	27.9%, 32.7%
South Skye	2,436	974	28.6%	25.2%, 31.9%
Skye	7,155	3,022	29.7%	27.8%, 31.6%
Lochalsh	1,929	780	28.8%	25.1%, 32.6%
Skye and Lochalsh	9,084	3,802	29.5%	27.8%, 31.2%
South West Ross	1,998	1,010	33.6%	30.0%, 37.2%
SLSWR	11,082	4,812	30.3%	28.7%, 31.8%

Data source: Census 2011 Table QS304SC,¹⁶ aggregated 2011 data zones

An analysis of the self-reported prevalence of long-term health conditions for each of the nine community partnerships in the Highland Health and Social Care Partnership (HSCP) is shown in Figure 5. The prevalence of long-term health conditions seen for the population of Skye, Lochalsh and West Ross (30.6 percent) is similar to the overall Highland and Scotland picture. The prevalence of long term health conditions is known to increase with age and area deprivation¹⁸, so these patterns largely reflect the older populations resident in rural areas and areas with concentrated levels of multiple deprivation.

Figure 5: Proportion of residents with one or more long-term health condition, by community partnership area, Highland and Scotland; 2011



Data source: Census 2011 Table QS304SC,¹⁶ aggregated 2011 data zones, best fit to community partnership area

Prevalence of specific health conditions

The 2011 Census data also provides more detailed estimates of the prevalence of specific individual health conditions. People who reported having a long-term health condition were asked to record it against a number of categories: deafness or partial hearing loss, blindness or partial sight loss, a learning disability, a learning difficulty, a developmental disorder, a physical disability, and a mental health condition.

In Skye and Lochalsh, deafness or partial hearing loss is the most prevalent condition, with 932 (7.3 percent) of residents reporting this condition (Table 5, Table 6). The data also show that 768 (6.0 percent) reported having a physical disability, 388 (3.0 percent) had a mental health condition, 275 (2.1 percent) were blind or partially sighted and 248 (1.9 percent) had a learning difficulty. The proportions reporting each condition were broadly similar across each area of Skye and Lochalsh and the overall Highland average.

Table 5: Number of residents with a specified long-term health condition in selected areas of SLSWR; 2011

Area	Deafness or partial hearing loss	Blindness or partial sight loss	Learning disability	Learning difficulty	Developmental disorder	Physical disability	Mental health condition
North Skye	492	146	8	121	8	415	195
South Skye	241	67	4	60	4	206	119
Skye	733	213	12	181	12	621	314
Lochalsh	199	62	4	67	4	147	74
Skye and Lochalsh	932	275	16	248	16	768	388
South West Ross	273	77	4	62	4	220	83
SLSWR	1,205	352	20	310	20	988	471
Highland	16,337	5,347	1,176	4,802	1,622	14,205	8,446

Data source: Census 2011 Table QS304SC,¹⁶ aggregated 2011 data zones

Table 6: Proportion of residents with a specified long-term health condition in selected areas of SLSWR; 2011

Area	Deafness or partial hearing loss	Blindness or partial sight loss	Learning disability	Learning difficulty	Developmental disorder	Physical disability	Mental health condition
North Skye	7.3%	2.2%	0.1%	1.8%	0.1%	6.2%	2.9%
South Skye	7.1%	2.0%	0.1%	1.8%	0.1%	6.0%	3.5%
Skye	7.2%	2.1%	0.1%	1.8%	0.1%	6.1%	3.1%
Lochalsh	7.3%	2.3%	0.1%	2.5%	0.1%	5.4%	2.7%
Skye and Lochalsh	7.3%	2.1%	0.1%	1.9%	0.1%	6.0%	3.0%
South West Ross	9.1%	2.6%	0.1%	2.1%	0.1%	7.3%	2.8%
SLSWR	7.6%	2.2%	0.1%	2.0%	0.1%	6.2%	3.0%
Highland	7.0%	2.3%	0.5%	2.1%	0.7%	6.1%	3.6%

Data source: Census 2011 Table QS304SC,¹⁶ aggregated 2011 data zones

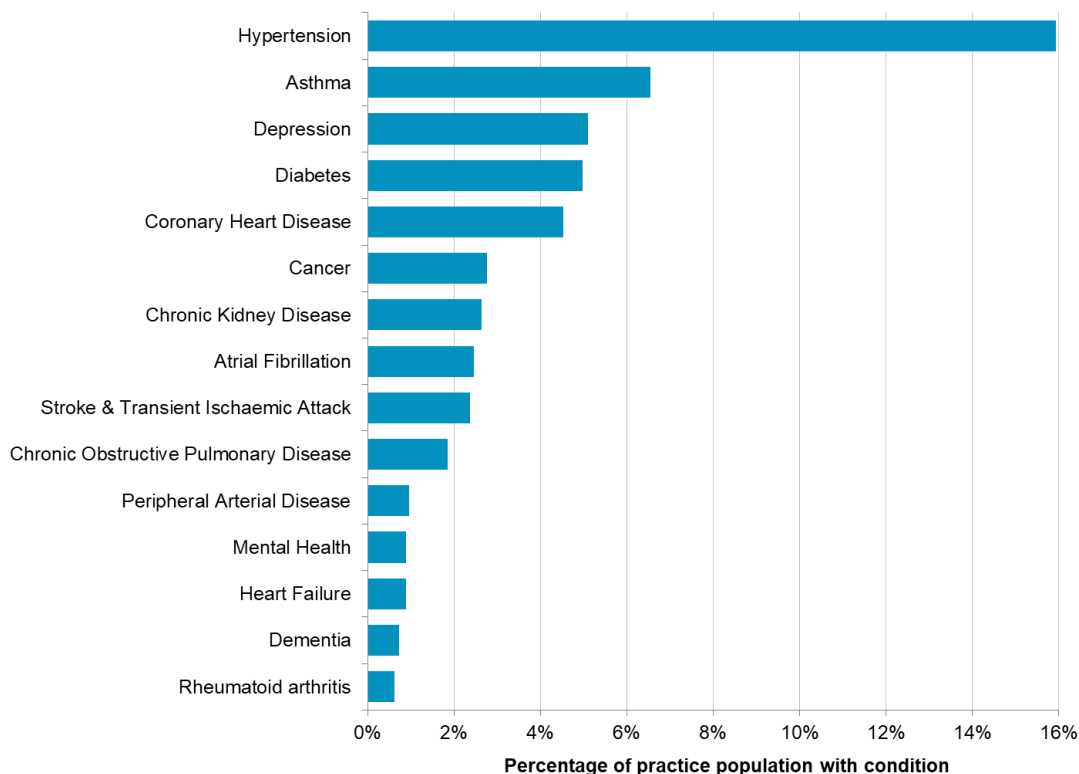
Primary Care based prevalence estimates

Information on the prevalence of some of the most common individual health conditions in Skye and Lochalsh is also available from diagnoses recorded by GP Practices on their disease registers. Disease registers were published as part of the Quality & Outcomes Framework (QOF) until 2016.

It is reported that the QOF gives reliable estimates of prevalence for conditions which are managed mainly by the GP or practice nurse, but are likely to under-represent the true prevalence for conditions where people do not always consult their doctor, for example diabetes and dementia.¹⁹ Furthermore, the reported prevalence figures take no account of differences between practice populations in terms of underlying demographic or other factors that influence the prevalence of different health conditions.

Overall prevalence rates for selected health conditions for people registered with a Skye and Lochalsh GP practice are shown in Figure 6. Of the conditions shown, hypertension has the highest overall prevalence at 16 percent, followed by asthma (7 percent), depression (5 percent), diabetes (5 percent) and coronary heart disease (5 percent).

Figure 6: Proportion of practice population with selected health conditions, Skye and Lochalsh; 2016



Data source: QOF Calculator Database, ISD Scotland²⁰

Prevalence estimates as at 1st April 2016. Number of patients on each individual condition register, shown as a crude prevalence rate per 100 practice population

The number of adults diagnosed with each health condition, and the corresponding prevalence rate, for each GP practice in Skye and Lochalsh are provided in more detail in Table 7.

Table 7: Number and prevalence rate of adults diagnosed with selected health conditions by GP practice, Skye and Lochalsh, 2016

Health Condition	Carbost Medical Practice	Dunvegan Medical Practice	Glenelg Health Centre	Kyle Medical Practice	Portree Medical Centre	South Skye Practices
Asthma	47 (7%)	116 (7%)	25 (9%)	157 (6%)	353 (6%)	171 (6%)
Atrial Fibrillation	17 (3%)	56 (3%)	7 (3%)	77 (3%)	121 (2%)	49 (2%)
Cancer	22 (3%)	46 (3%)	11 (4%)	99 (4%)	114 (2%)	74 (3%)
Chronic Kidney Disease	12 (2%)	36 (2%)	10 (4%)	115 (5%)	130 (2%)	47 (2%)
Chronic Obstructive Pulmonary Disease	7 (1%)	26 (2%)	8 (3%)	55 (2%)	101 (2%)	49 (2%)
Coronary Heart Disease	28 (4%)	80 (5%)	19 (7%)	124 (5%)	219 (4%)	132 (5%)
Dementia	5 (1%)	13 (1%)	0 (0%)	16 (1%)	58 (1%)	*
Depression	57 (9%)	153 (9%)	11 (4%)	121 (5%)	291 (5%)	44 (2%)
Diabetes	38 (6%)	79 (5%)	14 (5%)	102 (4%)	284 (5%)	143 (5%)
Heart Failure	8 (1%)	16 (1%)	5 (2%)	26 (1%)	35 (1%)	*
Hypertension	104 (16%)	292 (17%)	44 (16%)	397 (16%)	866 (16%)	415 (15%)
Mental Health	6 (1%)	9 (1%)	*	19 (1%)	67 (1%)	*
Osteoporosis	*	*	0 (0%)	8 (0%)	5 (0%)	0 (0%)
Peripheral Arterial Disease	*	11 (1%)	6 (2%)	22 (1%)	58 (1%)	30 (1%)
Rheumatoid arthritis	*	11 (1%)	0 (0%)	12 (0%)	45 (1%)	*
Stroke & Transient Ischaemic Attack	19 (3%)	45 (3%)	*	69 (3%)	126 (2%)	56 (2%)

Data source: QOF Calculator Database, ISD Scotland²⁰

Prevalence estimates as at 1st April 2016, Number of Patients on each individual condition register and crude prevalence rate per 100 practice population

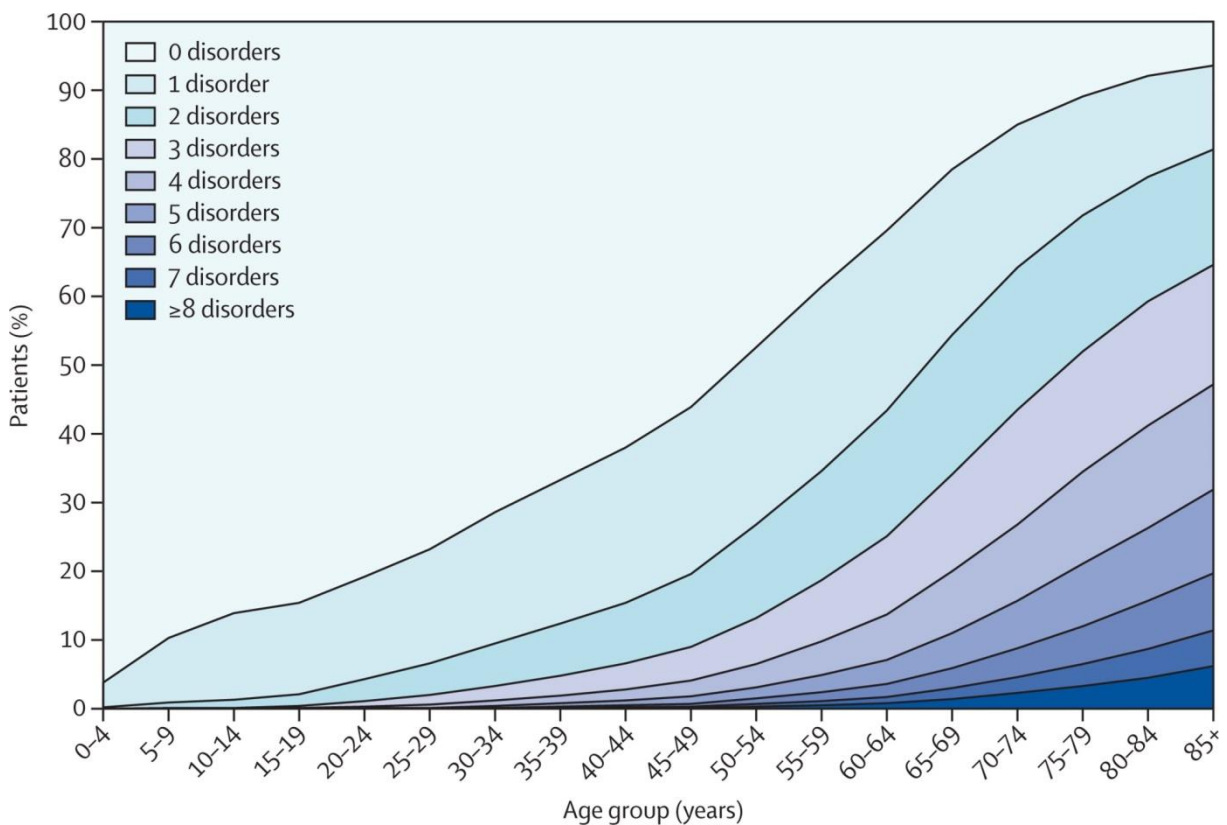
"*" indicates values that have been suppressed due to the potential risk of disclosure in the ISD Scotland publication

Multimorbidity

Multimorbidity refers to the coexistence of two or more long-term health conditions within an individual. The estimates of disease prevalence outlined in the previous section of this report focus on single conditions, whereas in practice many people have multiple health conditions, requiring continuity and coordination of care.

Research set in Scottish general practice reported that the number of health conditions and prevalence of multimorbidity increases with age and socio-economic deprivation.²¹ Multimorbidity is common, affecting one in four people. Figure 7 shows that by the age of 50 over half of people had at least one health condition and by the age of 85 the majority (81 percent) were multimorbid. Research also shows that the prevalence of mental health conditions in an individual increases with the number of physical health conditions they have.²² Although information on multimorbidity in the Skye and Lochalsh population is not currently available, it is reasonable to assume that a similar health pattern will occur.

Figure 7: Prevalence of multiple chronic conditions in Scotland by age



Data Source: Barnett et al.²¹

Projections of multimorbidity, based on the Population Ageing and Care Simulation study in England, suggest that there will be greater numbers of older people with multimorbidity in the future.²² Furthermore, the authors report that the prevalence of complex multimorbidity (four or more conditions) will increase, and that the majority of people with four or more conditions will also have mental ill-health. Population ageing outlined in the needs assessment demography report,¹ suggest there is an increasing need for the prevention and management of complex multimorbidity in mid and later life.

Dementia

Dementia is the term used to describe a variety of conditions which result in the progressive decline in a person's mental functions. The main types of dementia include dementia due to Alzheimer's disease, vascular dementia and dementia with Lewy bodies. Mixed dementia, with features of more than one type is also common, especially in older adults, while frontotemporal dementia is a less common form but relatively more frequent before old age.^{23,24}

Dementia is a major cause of disability and dependency among older people and the risk of developing dementia increases exponentially with age. Symptoms can range from some memory loss and confusion to complete dependence on others for all aspects of personal care. Classification into mild, moderate and severe dementia on the basis of dependency in daily living is important. People with mild impairment can live independently in the community, whereas those with severe dementia are likely to require a higher level of service support. Research commissioned by the Alzheimer's Society estimates the severity of dementia at any point in time as 55.4% mild, 32.1% moderate and 12.5% severe dementia.²⁵

Establishing the number of people with dementia is difficult. A definitive diagnosis can be hard to make in the earlier stages of the condition, and many people with undiagnosed dementia will be able to live at home with the support of family members or carers.²³ The analysis provided in this report is based upon the European Collaboration on Dementia (EuroCoDe) study and endorsed by Alzheimer Scotland.^{26,27}

Table 8: Estimated number and percentage of people with dementia in Highland by community partnership area and disease severity, 2017

Area	Persons with dementia	Prevalence (%)	Estimated dementia severity		
			Mild	Moderate	Severe
Badenoch and Strathspey	260	1.9%	140	80	30
Caithness	500	2.0%	280	160	60
East Ross	410	1.8%	230	130	50
Inverness	1,340	1.6%	740	430	170
Lochaber	350	1.8%	190	110	40
Mid Ross	510	1.9%	280	160	60
Nairn & Nairnshire	300	2.3%	170	100	40
Skye, Lochalsh & West Ross	410	2.1%	230	130	50
Sutherland	330	2.6%	180	110	40
Highland HSCP	4,410	1.9%	2,440	1,420	550

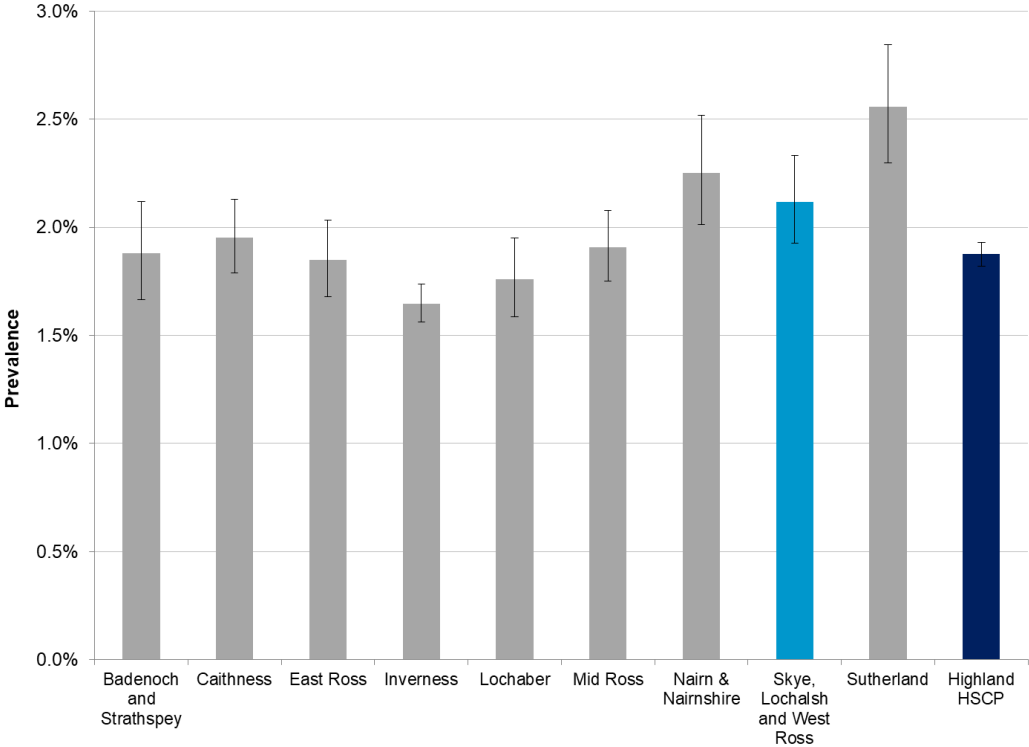
Data Source: EuroCoDe²⁶ and Harvey²⁸ age-sex specific dementia prevalence rates applied to National Records of Scotland Small Area Population Estimates 2017, best fit to community partnership area

Estimates of the number of people with dementia in each of the Highland community partnership areas are shown in Table 8. The area of Skye, Lochalsh and West Ross is estimated to have 410 people living with dementia, a prevalence rate of 2.1 percent of the population. Estimated dementia severity, based upon the proportions reported by the

Alzheimer’s Society, suggests 230 people have mild dementia, 130 people have moderate dementia and 50 people have severe dementia.

Figure 8 shows that the estimated prevalence of dementia is significantly higher than the overall Highland rate in Skye, Lochalsh and West Ross, Sutherland and Nairn and Nairnshire. These differences largely reflect the age structure of the population in each area.

Figure 8: Estimated prevalence of dementia in Highland by area, 2017



Data Source: EuroCoDe²⁶ and Harvey²⁸ age-sex specific dementia prevalence rates applied to National Records of Scotland Small Area Population Estimates 2017, best fit to community partnership area

While age is the strongest known risk factor for cognitive decline, dementia is not an inevitable consequence of ageing. World Health Organisation guidelines highlight that the proactive management of modifiable risk factors can delay or slow onset or progression of the disease.²⁹

Frailty

Frailty is the term used to describe a health state related to the ageing process in which multiple body systems gradually lose their in-built reserves.³⁰ Characteristics can include unintentional weight loss, reduced muscle strength, exhaustion, reduced walking speed and low levels of activity.³¹ There is evidence that older people with frailty are vulnerable to a sudden change in their physical and mental health and wellbeing and a range of adverse outcomes including falls, delirium and fluctuating levels of disability.³⁰ It is estimated that around 14 percent of people aged 60 years or over have frailty, rising to 65 percent in those aged 90 years or over.³²

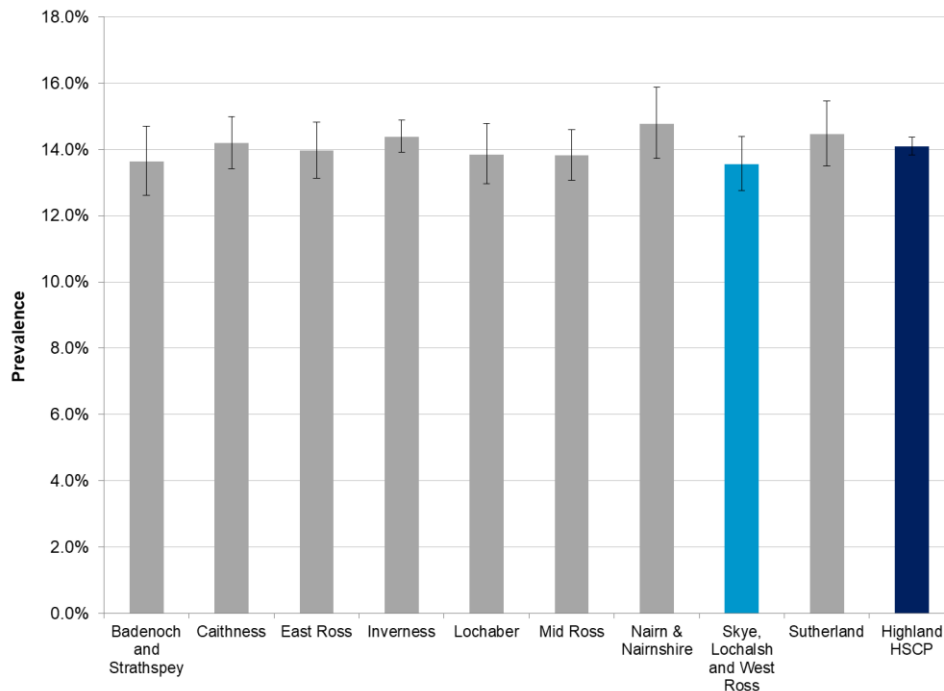
Estimates of the expected number of people with frailty living in the community in Highland are shown in Table 9. In Skye, Lochalsh and West Ross there are an estimated 910 frail older people living in the community, equivalent to 13.5 percent of the general population aged 60 years and over. The estimated frailty rate for Skye, Lochalsh and West Ross at the current point in time is not significantly different to Highland overall (Figure 9) and reflects the current balance of people in different age bands.

Table 9: Estimated number and percentage of people aged 60 years and over with frailty living in the community in Highland by area, 2017

Area	Population aged 60 years and over	Estimated number with frailty	Prevalence (%)
Badenoch and Strathspey	4,183	570	13.6%
Caithness	7,614	1,080	14.2%
East Ross	6,446	900	14.0%
Inverness	19,883	2,860	14.4%
Lochaber	5,562	770	13.8%
Mid Ross	7,963	1,100	13.8%
Nairn & Nairnshire	4,199	620	14.8%
Skye, Lochalsh & West Ross	6,717	910	13.5%
Sutherland	4,914	710	14.4%
Highland	67,481	9,510	14.1%

Data Source: Gale C et al.³² age-sex specific community frailty prevalence rates applied to National Records of Scotland Small Area Population Estimates 2017, best fit to community partnership area

Figure 9: Estimated prevalence of frailty in Highland by area, 2017



Data Source: Gale C et al.³² age-sex specific community frailty prevalence rates applied to National Records of Scotland Small Area Population Estimates 2017, best fit to community partnership area

End of Life Care

The profile of deaths in Skye and Lochalsh described in the needs assessment mortality report demonstrates the importance of end of life care, a theme demonstrated in “*Realistic Medicine*”, the 2017 report from the NHS Highland Director of Public Health.³³ The majority of deaths in Skye and Lochalsh are among older people, from a range of chronic conditions including cancers, heart diseases, cerebrovascular disease (stroke) and respiratory conditions.⁴ Many deaths follow a period, sometimes prolonged, of illness and/or frailty, which has implications for the type of care that may be required.

The National Institute for Clinical Excellence (NICE) have described end of life care as the care of people who are likely to die within the next 12 months.³⁴ This includes people whose death is imminent (expected within a few hours or days), people with advanced, progressive, incurable conditions and people with life-threatening acute conditions.

The Scottish Action Plan for palliative and end of life care also identified three trajectories to death, apart from sudden deaths.³⁵ These are a short period of decline (e.g. some cases of cancer), a long term illness with intermittent serious episodes (e.g. heart or other organ failure), and a prolonged dwindling (e.g. physical or cognitive frailty). This suggests that many deaths can be anticipated, enabling a planned approach to end of life care in ways which reflect, as far as possible, the needs and wishes of patients, carers and their families. Published research defines a set of diagnoses which are likely to require palliative care (see Appendix One).³⁶

Estimates of the number of people who had conditions that were likely to require palliative care, based on analysis of local mortality data, are shown in Table 10. In Skye and Lochalsh there were 524 deaths between 2013 and 2017 that could have benefitted from palliative care. This is equivalent to 105 people each year, or four in every five deaths (79.8 percent) in the Skye and Lochalsh area.

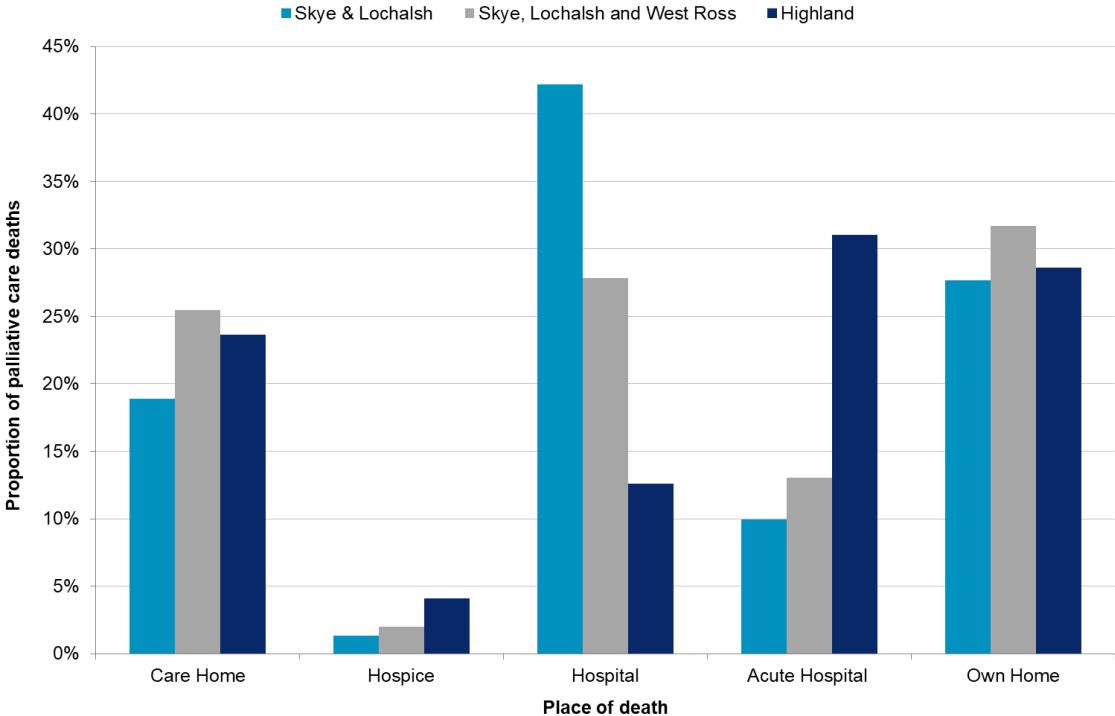
Table 10: Estimated number of people with potential palliative care needs by area, 2013-2017

Area	Number of deaths (5 year total)	Number of deaths (annual)	Percent of all deaths	95% Confidence Intervals
Skye and Lochalsh	524	105	79.8%	73.5%, 85.7%
Skye, Lochalsh and West Ross	845	169	79.6%	74.8%, 84.3%
Highland	9,219	1,844	76.3%	74.9%, 77.6%

Data source: Murtagh et al.³⁶ Selected International classification of Diseases 10th revision (ICD-10) diagnosis codes applied to National Records of Scotland (NRS) mortality records

The place of death for people with potential end of life care needs is shown in Figure 10. In Skye and Lochalsh, the most common place of death was a community or general hospital (42 percent), followed by home (28 percent), a care home (19 percent) and an acute hospital (10 percent). People in Skye and Lochalsh were more likely to die in a hospital; 52 percent compared to 44 percent in Highland overall.

Figure 10: Place of death for people with potential end of life care needs by selected area, 2013- 2017



Data source: Murtagh et al.³⁶ Place of death for selected International classification of Diseases 10th revision (ICD-10) diagnosis codes applied to National Records of Scotland (NRS) mortality records

Projections of future needs

This section outlines projections for a number of the health conditions discussed in this report. Increasing life expectancy and the growing numbers of older people, particularly those aged 80 years and over, suggest that increasing numbers of people with complex multimorbidity, frailty, dementia and end of life care needs should be anticipated.

The projections provided in this section are based upon the Highland Council population projection for Skye and Lochalsh, and assume that current prevalence rates for each condition by age and gender will apply over the next 10 to 25 years.

Table 11 shows that in Skye and Lochalsh the number of people with dementia is expected to grow by 80 percent from 250 people in 2016 to 450 people in 2031. The number of people with frailty is projected to increase by 350 people (61 percent) from 570 in 2016 to 920 in 2031. Finally, the number of people estimated to require palliative care, based on the projected number of deaths for the area, will increase by 40 percent, an additional 35 people each year. The projections to 2041 show greater increases in the expected number of people with each condition (Figure 11).

Table 11: Projected number of people with dementia, frailty and palliative care need in Skye and Lochalsh, 2016-2041, using different projection methods

Condition	Baseline	2021	2031	2041	% change 2016 to 2031	% change 2016 to 2041
Dementia ^a	250	300	450	610	80%	144%
Frailty ^b	570	660	920	1150	61%	102%
Palliative Care ^c	105	110	140	160	40%	60%

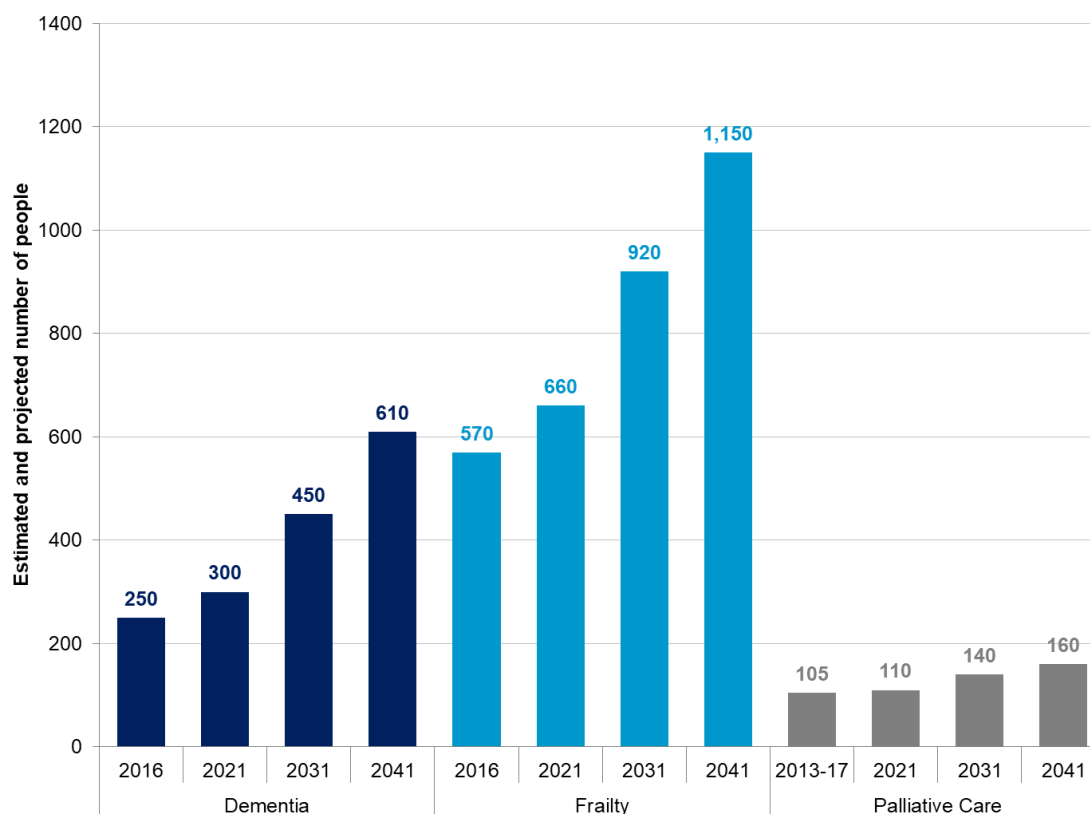
Data source: Highland Council population projections for Council areas (2016-2041)³⁷ applied to condition specific projection method.

^aProjection method: EuroCoDe²⁶ and Harvey²⁸ age-sex specific dementia prevalence rates

^bProjection method: Gale C et al.³² age-sex specific community frailty prevalence rates

^cProjection method: constant proportion (79.8%) of all deaths requiring palliative care according to selected International Classification of Disease (ICD)-10 codes from Murtagh et al.³⁶ applied to projected number of deaths

Figure 11: Projected number of people with dementia, frailty and palliative care need in Skye and Lochalsh, 2016-2041, using different projection methods



Data source: Highland Council population projections for Council areas (2016-2041)³⁷ applied to condition specific projection method.

Dementia projection method: EuroCoDe²⁶ and Harvey²⁸ age-sex specific dementia prevalence rates

Frailty projection method: Gale C et al.³² age-sex specific community frailty prevalence rates

Palliative care projection method: constant proportion (79.8%) of all deaths requiring palliative care according to selected International Classification of Disease (ICD)-10 codes from Murtagh et al.³⁶ applied to projected number of deaths

These projections provide a guide to future numbers but should be interpreted with some caution. There is a great deal of uncertainty in the population projections used to model these estimates,¹ and any variance in the future size or demographic profile of the Skye and Lochalsh population could lead to quite different estimates.

Each set of projections assume that current prevalence rates by age and gender will apply over the next 10 to 25 years. No account for potential future changes in medical treatments or patient outcomes, such as the impact of a rise in obesity, or advances in cancer treatment have been made. Public Health England report that even small changes in obesity levels can affect diabetes prevalence.³⁸ These underlying assumptions are particularly notable in the case of dementia. While age is the strongest known risk factor for cognitive decline, dementia is not an inevitable consequence of ageing. World Health Organisation guidelines for dementia highlight that the proactive management of modifiable risk factors can delay or slow onset or progression of the disease.²⁹

Within these limitations of estimating the size of future populations with dementia, frailty and end of life care needs, it is likely that numerically they will at least double in the next 20 years. This will contribute to a substantial health and care need in future populations, which will be demographically older and have proportionately fewer younger people to support their care.

The health and wellbeing of future cohorts of older people will be influenced by people's life circumstances and lifestyle factors across the life course. The fundamental risk factors associated with many health conditions relate to life circumstances and health related behaviours, including poverty and inequality, high body mass index (obesity and overweight), physical inactivity, diet and smoking.¹⁸ Positive changes in these factors at all stages of life can prevent or delay the onset of disease and improve resilience to ill-health. Future cohorts of older people may therefore experience better or worse health than older people at present. This has important implications for primary and secondary prevention and the development of a life course approach to healthy ageing.³⁹

Summary

This report has provided an overview of morbidity or health status in Skye and Lochalsh. The general epidemiological picture is similar to that of the Highland population. Four in five adults self-assess their health as 'good' or 'very good', and one third of people report having at least one health condition. Long-term conditions such as diabetes, coronary heart disease and cancer are the most common form of morbidity, as are mental health conditions such as depression and dementia. A demographically ageing population suggests that complex multimorbidity (four or more conditions) is likely to become an increasing concern. Projections of the number of people with dementia and frailty suggest that the number of people in Skye and Lochalsh with these conditions will at least double over the next 20 years. Population trends also mean that there will be an increasing need for end of life care. Positive changes in lifestyle risk factors and life circumstances can prevent, delay onset, and slow progression of long-term health conditions. This has important implications for prevention, a life course approach to health ageing, and planning future needs.

Appendix One

International Classification of Diseases 10th edition (ICD-10) codes used to identify potential end of life care population

Condition	ICD-10 code
Cancers	
Lung, Trachea, Bronchus	C33-C34
Lip; oral; Pharynx; Larynx	C00-C14; C32
Digestive; peritoneal	C15-C26
Female breast	C50
Genitourinary	C51-C68
Lymphoid, haematopoietic and related tissue	C81-C96
Other unspecified	C76-C80
Multiple primary sites	C97
Circulatory	I00-I69
Ischaemic Heart Disease	I20-I25
Stroke	I60-I69
Cardiac Failure	I50
Hypertensive Disease	I10-I11
Coronary Heart Disease	I00-I09; I26-I49; I51-I53
Respiratory	
Pneumonia	J12-J18
Influenza	J10-J11
COPD	J40-J47
Selected others: Laryngopharyngitis, bronchiolitis; bronchitis; URI	J06-09; J20-22; J96
Nervous S. & Sensory organs	
Motor Neurone	G122
Multiple Sclerosis	G35
Parkinsons	G20
Huntingtons	G10
Multiple system degeneration	G903
Senile & Pre-senile conditions	
Alzheimers Dementia	G30
Vascular dementia	F01
Unspecified Dementia	F03
Senility*	R54
Chronic Liver disease	
Alcoholic liver disease	K70
Others not selected above	K71-K77
HIV AIDS	B20-B24
Renal disease	
Acute renal failure	N17
Chronic kidney disease	N18
Other disorders of kidney and ureter, not elsewhere classified	N28
Hypertensive renal disease	I12
Hypertensive heart and renal disease	I13

Source: Based on Murtagh F, et al.³⁶

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