



# Scottish Diabetes Survey 2019

**Scottish Diabetes Data Group**

# Contents

## Table of Contents

Contents .....	2
Revision information .....	5
Foreword .....	6
Executive Summary .....	7
Prevalence .....	9
Types of Diabetes .....	11
Type 1 Diabetes Data .....	12
Incidence (new cases) .....	12
Duration of Diabetes .....	15
Glycaemic Control .....	16
Insulin Pump Use .....	17
Cardiovascular Risk .....	19
Blood Pressure .....	19
Total Cholesterol .....	20
Smoking Status .....	22
Complications of Diabetes .....	23
Myocardial Infarction and Cardiac Revascularisation .....	24
Kidney Function and Disease .....	25
Foot Complications .....	28
Paediatric Supplement .....	29
Introduction .....	29
Commentary on Scottish Paediatric Diabetes Data .....	30
Care Processes .....	40
Measure 1: Receiving All Processes of Care .....	41
Methodology .....	41
List of Care processes .....	41
Notes .....	41
Measure 2: HbA <sub>1c</sub> in Target Range After 1 Year .....	46
Methodology .....	46
Notes .....	46
Measure 3: HbA <sub>1c</sub> Control .....	51

Methodology.....	51
Notes .....	51
Measure 4: Current Smokers .....	56
Methodology.....	56
Notes .....	56
Measure 5: Cholesterol and Blood Pressure .....	60
Methodology.....	60
Measure 6: Foot Ulcers .....	62
Methodology.....	63
Notes:.....	63
Measure 7: Retinopathy Screening .....	66
Methodology.....	66
Notes .....	66
Measure 8: End Stage Renal Disease .....	70
Methodology.....	70
Notes .....	70
Measure 9: Insulin Pump Therapy .....	73
Methodology.....	73
Measure 10: Significant Weight Loss .....	76
Methodology.....	76
Notes .....	76
Measure 11: Attended Structured Education .....	79
Methodology.....	79
Notes .....	79
Measure 12: Disengaged from Diabetes Care.....	82
Methodology.....	82
Notes .....	82
National and Regional Detail.....	87
Prevalence Regional Detail.....	87
Incidence of Type 2 Diabetes .....	91
Incidence Regional Detail.....	93
Age and Sex .....	97
Mortality .....	100
Type of Diabetes Regional Detail .....	101
Ethnicity .....	102

Duration of Type 2 Diabetes .....	106
Body Mass Index .....	107
Body Mass Index Regional Detail .....	108
Glycaemic Control National and Regional Detail .....	112
Cardiovascular Risk National and Regional Detail .....	124
Blood Pressure .....	124
Blood Pressure Regional Detail .....	125
Total Cholesterol Summary .....	135
Total Cholesterol Regional Detail .....	136
Smoking Status National and Regional Detail .....	141
Complications of Diabetes Regional Detail .....	144
Myocardial Infarction and Cardiac Revascularisation Summary .....	144
Myocardial Infarction Regional Detail .....	145
Cardiac Revascularisation Regional Detail .....	146
Stroke .....	147
Kidney Function and Disease Regional Detail .....	148
Serum Creatinine National and Regional Detail .....	148
Urinary Albuminuria .....	150
End Stage Renal Failure .....	153
Diabetic Eye Screening and Disease Regional Detail .....	154
Diabetic Retinal Screening .....	154
Diabetic Retinal Screening Regional Detail .....	155
Foot Complications National and Regional Detail .....	160
Foot Ulceration National and Regional Detail .....	162
Lower Limb Amputation National and Regional Detail .....	164
Other Statistics .....	166
My Diabetes My Way .....	166
My Diabetes My Way Regional Detail .....	167
NHS Research Scotland (NRS) Diabetes Research Register' .....	168
Acknowledgements .....	170
List of Tables .....	171
List of Figures .....	181
Appendix 1: SCI-Diabetes Data Sources .....	186
Security and Confidentiality .....	186
Data Sources .....	186

Appendix 2: Comparisons with England and Wales .....	189
Diabetes Prevalence.....	189
Appendix 3: Health Board Performance .....	190

## Revision information

Version Number	Edited By	Effective Date	Details of Edits Made
1.0	Michael Bluett	21 August 2020	Initial version

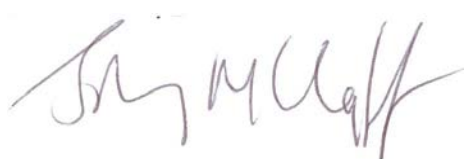
# Foreword

This survey once again provides a comprehensive view on diabetes care across the whole population of Scotland. The systems in place to record these data are such that we are able to present information about over 99% of the population diagnosed with diabetes. SCI-Diabetes, our clinical management and information system, is world-leading, and continues to enable us to track the effects of health policy on the delivery of care and outcomes for the 312,390 people with diabetes in Scotland.

As this is a large document, we have asked each of the subgroups of the Scottish Diabetes Group to provide a short commentary on elements of the information provided that are relevant to their area of interest. This will provide a helpful focus to highlight achievements and challenges for each group.

The system we use to automatically collect clinical data is comprehensive and has enabled linkage to other datasets in Scotland. Analysis of these linked datasets has been used to produce many publications in highly regarded international medical journals. These articles, often relating to the whole population with diabetes, rather than to selected subsets have enabled further understanding of the impact of diabetes and therapies with the aim to improve care and outcome for our population.

Within Scotland, we are fortunate to have such a good understanding of our provision of diabetes care and will continue to use this to drive improvements in the service and thus better outcomes for our patients.



John A McKnight  
Chairman  
Scottish Diabetes Data Group

# Executive Summary

This report presents the results of the 2019 Scottish Diabetes Survey. The survey collates information submitted by all 14 NHS boards and provides data on the number of people with diabetes, the effects on their health, and the progress being made to improve the delivery and outcomes of care for people with diabetes. Data for this survey were extracted from SCI-Diabetes at the end of 2019 and includes people who were alive, had an appropriate diagnosis of diabetes or a related condition and were registered with a Scottish General Practitioner at the time of data extraction. In this survey, we report separately on those with type 1 and type 2 diabetes.

In this Scottish Diabetes Survey 2019, we report that:

- There were 312,390 people diagnosed with diabetes in Scotland recorded on local diabetes registers at the end of 2019. This represents 5.7% of the population of all ages (Table 1).

Crude prevalence of diabetes ranged from 4.9% to 6.8% across NHS boards (Age-adjusted prevalence is based on direct age/sex standardisation using the Scottish population as the reference population structure. Population figures are based on mid-year population estimates published by National Records of Scotland. Because of publication dates, surveys have in each case used population figures for the previous year - so that the 2019 survey uses diabetes data from 2019 but mid-year population estimates from 2018. This will lead to a very small overestimate of diabetes prevalence.

Differences in prevalence are due to several factors. One is age - type 2 diabetes is more common in older age groups so the age structure of an area will affect the crude prevalence. A health board area with an older population will have a higher crude prevalence; e.g. the crude (unadjusted) prevalence of diabetes in Dumfries & Galloway is above the Scottish average; however when the figure is adjusted for the age of the population, the Dumfries & Galloway prevalence is actually lower than the Scottish average. Other reasons for differences in observed prevalence are given at the start of this section.

- Table 62).
- 10.7% of all registered people were recorded as having type 1 diabetes. 87.9% of all people registered with diabetes were recorded as having type 2 diabetes (Table 2).
- The number of people registered with type 1 diabetes increased from 27,823 in 2010 to 33,452 in 2019 and the number of people registered with type 2 diabetes increased from 190,772 in 2008 to 274,442 in 2019 (Scottish Diabetes Survey 2008 and Table 2).
- 1.4% (4,496) were recorded as having “other” types of diabetes, including maturity onset diabetes of the young (MODY) and unknown diabetes type (Table 2).
- Of those with a recorded body mass index (BMI) and a recorded age of 18 or over, 36.8% with type 1 diabetes and 31.7% with type 2 diabetes were overweight (BMI 25-29.9kg/m<sup>2</sup>), and a further 27.7% of those with type 1 diabetes and 55.4% of those with type 2 diabetes were obese (BMI 30kg/m<sup>2</sup> or above), meaning that a total of 64.5% of

those with type 1 diabetes and 87.1% of those with type 2 diabetes were overweight or obese (Table 80 and Table 81). For comparison, in the 2018 Scottish Health Survey 65% of participants of 16 years of age and older were overweight or obese.

- 90.5% of those with type 1 and 91.1% of those with type 2 diabetes had an HbA<sub>1c</sub> recorded in the previous 15 months (Table 84). Of these, 26.5% and 55.3% respectively had a result < 58mmol/mol (Table 85 and Table 86).
- 83.7% of those with type 1 and 88.6% of those with type 2 diabetes had their blood pressure recorded in the previous 15 months (Table 90). Of these, 41.4% and 31.4% respectively had a systolic blood pressure <130 mmHg and a diastolic blood pressure ≤80 mmHg (Table 93 and Table 95).
- Cholesterol was recorded in 83.0% of people within the previous 15 months, and the target of ≤ 5 mmol/l was achieved in 71.0% of those with type 1 and 78.8% of those with type 2 diabetes (Table 99, Table 11 and Table 100).
- 18.9% of those with type 1 and 15.7% of those with type 2 diabetes were recorded as being current smokers (Table 103 and Table 104). For comparison, In the 2018 Scottish Health Survey 19% of participants of 16 years of age and older were current smokers.
- 1,218 (3.6%) of those with type 1 and 26,522 (9.7%) of those with type 2 diabetes had a record of myocardial infarction, and 2.9% and 7.6% respectively had a record of cardiac revascularisation (Table 106 and Table 107).
- 474 (1.4%) of those with type 1 and 1,636 (0.6%) of those with type 2 diabetes have a record of having end stage renal failure (Table 114).
- 84.4% of people with type 1 or type 2 diabetes had a record of eye screening in the previous 15 months (Table 115).
- 56.7% of people with type 1 diabetes and 64.8% of those with type 2 had their foot scores recorded in the previous 15 months (Table 120 and Table 121).
- 270 (0.8%) of those with type 1 and 1,285 (0.5%) of those with type 2 diabetes had a record of having had a major lower limb amputation (Table 125).



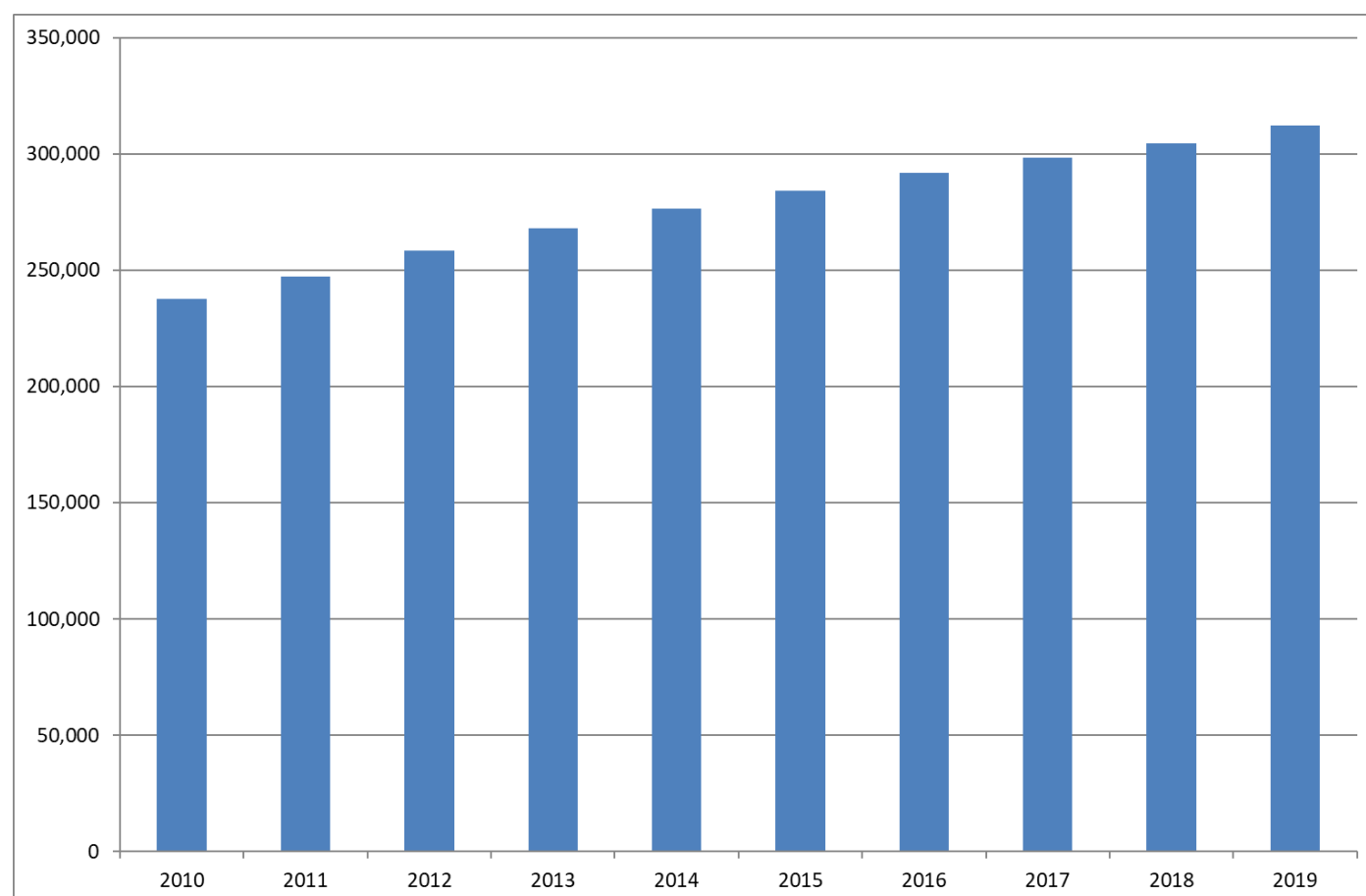
# Prevalence

At the end of 2019 there were 312,390 people with known diabetes in Scotland (Table 1) recorded on Scottish Care Information-Diabetes (SCI-Diabetes), which represents a crude prevalence of 5.7% of the population of all ages (5,438,100).

In the previous Scottish Diabetes Survey (2018), 304,375 people (5.6%) were reported to have diabetes. The increase in reported prevalence is influenced by numerous factors, including:

- demographic change - diabetes is more prevalent in older people, so the increasing number of older people each year increases the prevalence of diabetes.
- better survival – possibly related to the widespread use of statins or changes to other risk factors.
- changes in the numbers of new cases of diabetes because of changes in disease patterns.
- changes in the proportions of people whose diagnosis of diabetes is based on measurement of glucose or measurement of HbA<sub>1c</sub>

**Figure 1** Number of people recorded with diabetes (all types) by year in Scotland for 2010-2019.



**Table 1** Number of people with diabetes, crude prevalence of diabetes and annual changes in numbers/proportions by year for Scotland, 2010-2019.

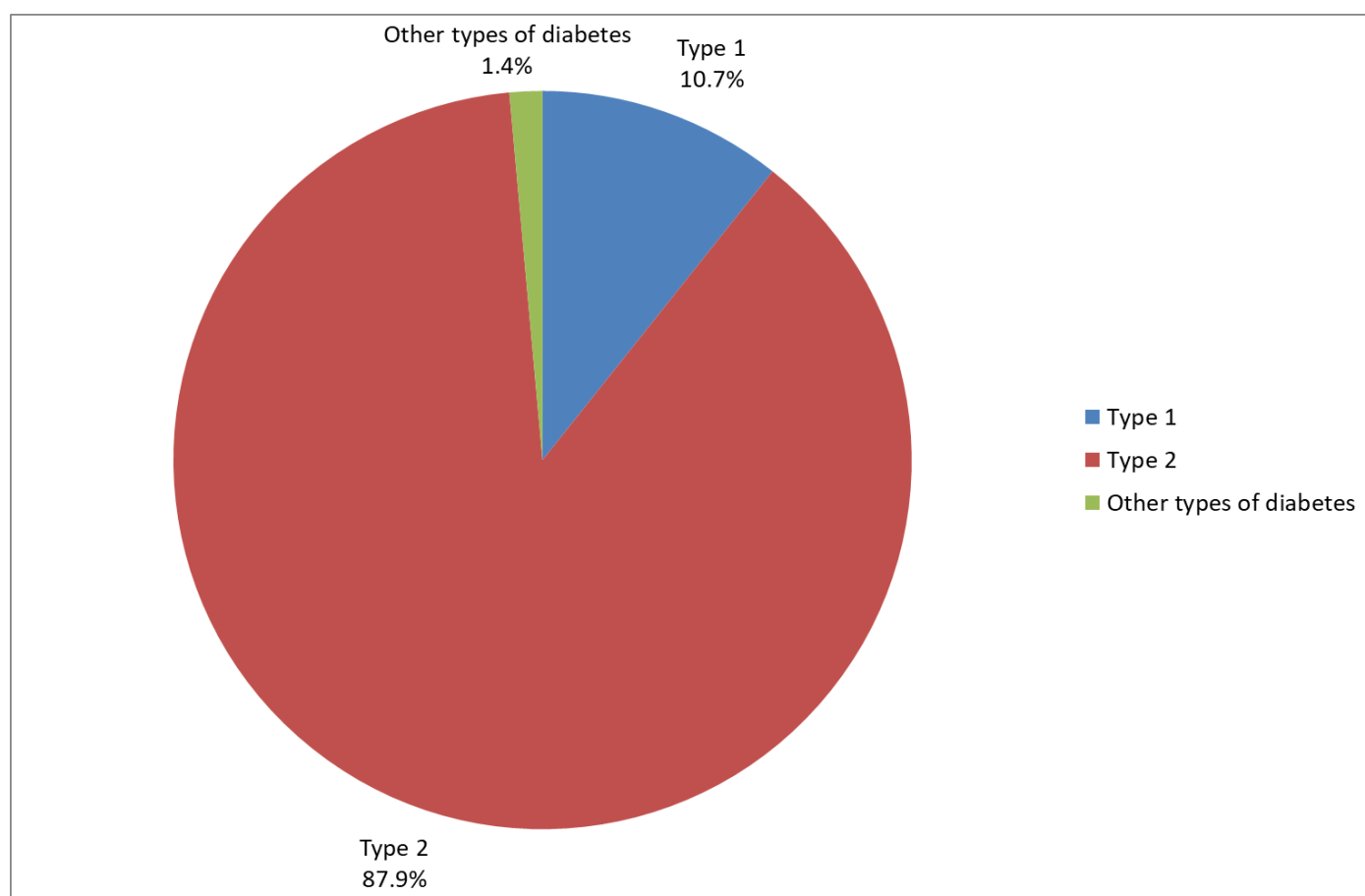
Survey	Number of people with diabetes (n)	Crude prevalence (%)	Increase (n)	Annual increase in numbers (%)	Absolute increase in prevalence (%)
2019	312,390	5.74	8,015	2.63	0.13
2018	304,375	5.61	5,871	1.97	0.09
2017	298,504	5.52	6,523	2.23	0.09
2016	291,981	5.43	7,859	2.77	0.12
2015	284,122	5.31	7,692	2.78	0.12
2014	276,430	5.19	8,276	3.09	0.14
2013	268,154	5.05	9,584	3.71	0.13
2012	258,570	4.92	11,292	4.57	0.18
2011	247,278	4.74	9,810	4.13	0.16
2010	237,468	4.57	9,464	4.15	0.16

The population figures used are based on the mid-year population estimate published by National Records of Scotland for the previous year as population estimates only become available in April. For example, 2019 data uses numbers of people with diabetes at the end of 2019 but mid-year population data from 2018. This will lead to a very small overestimate of diabetes prevalence in this table because the population size has been increasing slightly each year, for example by 0.25% from 2018 to 2019, meaning the correct estimate of crude prevalence is 5.73% (rather than 5.74%).

# Types of Diabetes

The majority of registered people have a record of type 2 diabetes (274,442 or 87.9%). The proportion of people with diabetes who have a record of type 1 diabetes has fallen from 18.2% in 2002 to 10.7% in 2019, probably largely due to more complete recording of data from people with type 1 diabetes than type 2 diabetes in earlier years. However, the absolute number of people with type 1 diabetes continues to increase (29,261 in 2013 to 33,452 in 2019). This reflects the rising incidence of type 1 diabetes in children and better survival over the last 40 years. Other types of diabetes include Maturity Onset Diabetes of the Young (MODY), gestational diabetes and secondary diabetes. See the [Type of Diabetes Regional Detail](#) section for detailed information by NHS board.

**Figure 2 Proportions of diabetes population by type, Scotland 2019.**



**Table 2 Number of people with diabetes by diabetes type, Scotland 2019.**

Type 1		Type 2		Other types of diabetes		Total
n	%	N	%	n	%	
33,452	10.7	274,442	87.9	4,496	1.4	312,390

# Type 1 Diabetes Data

## Incidence (new cases)

Crude incidence figures have been calculated retrospectively using numbers of people with diabetes of duration of less than one year identified from SCI-Diabetes data as the numerator and people that aren't diagnosed as having diabetes as the denominator. Numerator data may be affected by factors such as post-survey patient migration and subsequent validation of diabetes classification.

The calculation method used for incidence since 2017 differs from that used in 2016 and earlier. The numbers are therefore not directly comparable with earlier years. In surveys prior to 2017, the total population, including both those diagnosed with diabetes and those without, was used as the denominator, resulting in incidence being under-estimated. As type 2 diabetes is more common, the effect on the incidence of type 2 diabetes is more marked than for type 1 diabetes.

**Table 3 Type 1 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by age, Scotland 2012-2019.**

Age	2012 (a)		2013		2014		2015		2016		2017		2018		2019		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Population	Cases	Rate
0-4	66	22	51	17	56	19	73	25	64	22	52	18	60	21	276,733	54	20
5-9	137	51	88	32	105	37	114	40	117	40	135	45	117	39	300,472	108	36
10-14	152	53	125	45	140	51	120	44	179	66	141	52	178	64	286,440	161	56
15-19	110	34	104	33	116	37	98	32	102	34	109	37	89	31	282,634	97	34
20-29	172	24	159	22	159	22	160	22	165	23	178	24	172	23	726,806	205	28
30-39	118	18	111	17	110	17	125	19	107	16	159	24	137	20	697,817	145	21
40-49	96	12	82	11	86	11	95	13	84	12	79	11	86	13	666,364	100	15
50-59	66	10	74	11	58	8	75	11	63	9	70	10	80	11	732,920	71	10
60-69	43	8	36	7	26	5	22	4	44	8	36	6	40	7	557,700	47	8
>=70	18	3	18	3	27	5	16	3	18	3	19	3	34	6	605,967	36	6
<b>Total</b>	<b>978</b>	<b>19</b>	<b>848</b>	<b>17</b>	<b>883</b>	<b>17</b>	<b>898</b>	<b>18</b>	<b>943</b>	<b>19</b>	<b>978</b>	<b>19</b>	<b>993</b>	<b>19</b>	<b>5,133,725</b>	<b>1,024</b>	<b>20</b>

Note: a) In the years up to 2012, the at-risk population includes those with diagnosed frank diabetes, under-estimating the incidence rate. The Scottish at-risk population figures excludes people with frank diabetes at the end of the previous year whose age is unknown (n = 121).

**Table 4** Type 1 diabetes: Incidence rate (per 100,000 population per year) by age and year, Scotland 2012-2019.

Age range	2012 (a)	2013	2014	2015	2016	2017	2018	2019
0-9	36	24	28	32	31	32	30	28
10-19	43	38	44	37	49	44	47	45
20-29	24	22	22	22	23	24	23	28
30-39	18	17	17	19	16	24	20	21
40-49	12	11	11	13	12	11	13	15
50-59	10	11	8	11	9	10	11	10
60-69	8	7	5	4	8	6	7	8
>=70	3	3	5	3	3	3	6	6
<b>Total</b>	<b>19</b>	<b>17</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>20</b>

Note: a) In the years up to 2012, the at-risk population includes those with diagnosed frank diabetes, under-estimating the incidence rate. The Scottish at-risk population figures exclude people with frank diabetes at the end of the previous year whose age is unknown (n = 121).

See the [Incidence National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Duration of Diabetes

The date of diagnosis was recorded for 98.8% of people with type 1 diabetes, of whom 3.1% have had diabetes for less than one year and 44.5% have had diabetes for 20 years or more (Table 5). It should be noted that not all dates of diagnosis are accurate, especially for those with long-standing diabetes.

**Table 5 Duration of diabetes (years since diagnosis) for people with type 1 diabetes, Scotland 2019.**

Duration (Years)	Type 1 diabetes	
	Number	%
<1	1,019	3.1
1-4	3,887	11.8
5-9	4,771	14.4
10-14	4,352	13.2
15-19	4,313	13.0
20-24	3,620	11.0
25-29	3,004	9.1
30-34	2,431	7.4
34-39	2,003	6.1
40-44	1,552	4.7
45-49	984	3.0
>=50	1,116	3.4
<b>Total</b>	<b>33,052</b>	<b>100.0</b>

Note: Excludes people where date of diagnosis not known (for type 1, n = 400). Since 2017, the Scottish Diabetes Survey has taken a more robust approach to validating date of diagnosis of diabetes than earlier surveys, for example by excluding dates of diagnoses incorrectly recorded as prior to the person's date of birth. Consequently, higher numbers and proportions of people have missing data than for previous Surveys.

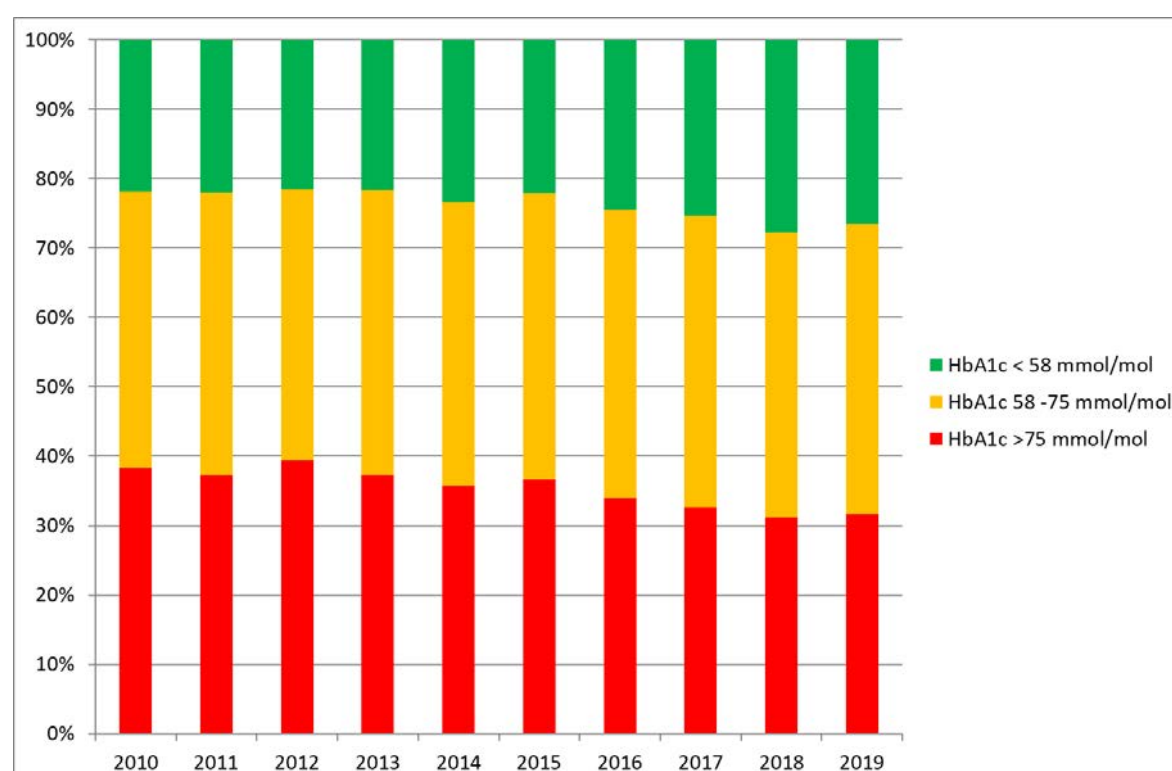
See the [Duration National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Glycaemic Control

**Table 6** Type 1 diabetes: Number and percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2010-2019.

Year	HbA <sub>1c</sub> (mmol/mol)						Total recorded	Not recorded
	< 58		58-75		>75			
	n	%	n	%	N	%		
2019	8,027	26.5%	12,666	41.9%	9,570	31.6%	30,263	3,189
2018	8,191	27.7%	12,160	41.1%	9,205	31.1%	29,556	3,272
2017	7,140	25.3%	11,900	42.1%	9,218	32.6%	28,258	3,189
2016	6,835	24.5%	11,609	41.6%	9,448	33.9%	27,892	3,007
2015	6,099	22.1%	11,400	41.3%	10,087	36.6%	27,586	2,770
2014	6,375	23.4%	11,107	40.8%	9,714	35.7%	27,196	2,606
2013	5,578	21.5%	10,595	40.8%	9,788	37.1%	25,961	3,300
2012	5,407	21.5%	9,830	39.1%	9,881	39.3%	25,118	3,731
2011	5,345	22.0%	9,893	40.7%	9,071	37.3%	24,309	3,963
2010	5,337	21.8%	9,754	39.9%	9,375	38.3%	24,466	3,444

**Figure 3** Type 1 diabetes: Percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2010-2019.





See the [Glycaemic Control National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Insulin Pump Use

The use of Continuous Subcutaneous Insulin Infusion (CSII or insulin pump therapy) as a method to manage type 1 diabetes has increased in many developed countries during the last 20 years. The Scottish Diabetes Group, supported by the Government, have emphasised the importance of ensuring individuals who fulfil the clinical criteria for CSII therapy have access to this technology. The results in Table 7 describe the proportion of people recorded as receiving treatment with insulin pumps in Scotland.

**Table 7 Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and year, Scotland 2013-2019.**

Year	Aged under 18			Aged 18 or over			All ages		
	People (n)	On pump		People (n)	On pump		People (n)	On pump	
		n	%		n	%		n	%
2019	3,070	1,193	38.9	30,357	3,421	11.3	33,427	4,614	13.8
2018	3,044	1,165	38.3	29,759	3,046	10.2	32,803	4,211	12.8
2017	3,001	1,070	35.7	28,421	2,668	9.4	31,422	3,738	11.9
2016	3,013	1,035	34.4	27,859	2,306	8.3	30,872	3,341	10.8
2015	2,950	919	31.2	27,379	1,948	7.1	30,329	2,867	9.5
2014	2,953	849	28.8	26,748	1,632	6.1	29,701	2,481	8.4
2013	2,917	659	22.6	26,394	1,188	4.5	29,311	1,847	6.3

Note: This table is limited to the years since 2013 due to the absence of data prior to that.

**Table 8 Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and NHS board, ranked from high to low by percentage of people aged under 18 using an insulin pump, Scotland 2019.**

NHS board	Aged under 18			Aged 18 or over			All ages		
	People (n)	On pump		People (n)	On pump		People (n)	On pump	
		n	%		n	%		n	%
Orkney	9	6	66.7	116	18	15.5	125	24	19.2
Lothian	404	231	57.2	4,735	603	12.7	5,139	834	16.2
Fife	214	107	50.0	2,054	300	14.6	2,268	407	17.9
Dumfries and Galloway	97	45	46.4	921	143	15.5	1,018	188	18.5
Ayrshire and Arran	237	109	46.0	2,162	190	8.8	2,399	299	12.5
Borders	64	28	43.8	675	84	12.4	739	112	15.2
Highland	213	81	38.0	1,999	199	10.0	2,212	280	12.7
Tayside	200	74	37.0	2,101	280	13.3	2,301	354	15.4
Lanarkshire	456	158	34.6	4,096	446	10.9	4,552	604	13.3
Forth Valley	203	69	34.0	1,769	205	11.6	1,972	274	13.9
Greater Glasgow and Clyde	586	195	33.3	6,135	641	10.4	6,721	836	12.4
Shetland	16	5	31.3	136	11	8.1	152	16	10.5
Grampian	349	80	22.9	3,273	288	8.8	3,622	368	10.2
Western Isles	22	5	22.7	185	13	7.0	207	18	8.7
<b>Scotland</b>	<b>3,070</b>	<b>1,193</b>	<b>38.9</b>	<b>30,357</b>	<b>3,421</b>	<b>11.3</b>	<b>33,427</b>	<b>4,614</b>	<b>13.8</b>

## Cardiovascular Risk

Diabetes is associated with an increased risk of cardiovascular disease and it is therefore important to address cardiovascular risk factors such as high blood pressure (BP), raised cholesterol and smoking.

### Blood Pressure

83.7% of people with type 1 diabetes had their BP recorded within the previous 15 months (Table 9). Note that data from people of all ages are included in these blood pressure figures, in contrast to the processes of care, where there are restrictions.

**Table 9** Number and percentage of people with type 1 diabetes with a recorded BP within the previous 15 months in Scotland 2010-2019.

Year	BP Recorded		Population
	n	%	
2019	28,008	83.7	33,452
2018	27,458	83.6	32,828
2017	26,524	84.3	31,447
2016	26,248	84.9	30,899
2015	26,298	86.6	30,356
2014	26,201	87.9	29,802
2013	25,395	86.8	29,261
2012	24,574	85.2	28,849
2011	24,165	85.5	28,272
2010	23,977	85.9	27,910

See the [Blood Pressure National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Total Cholesterol

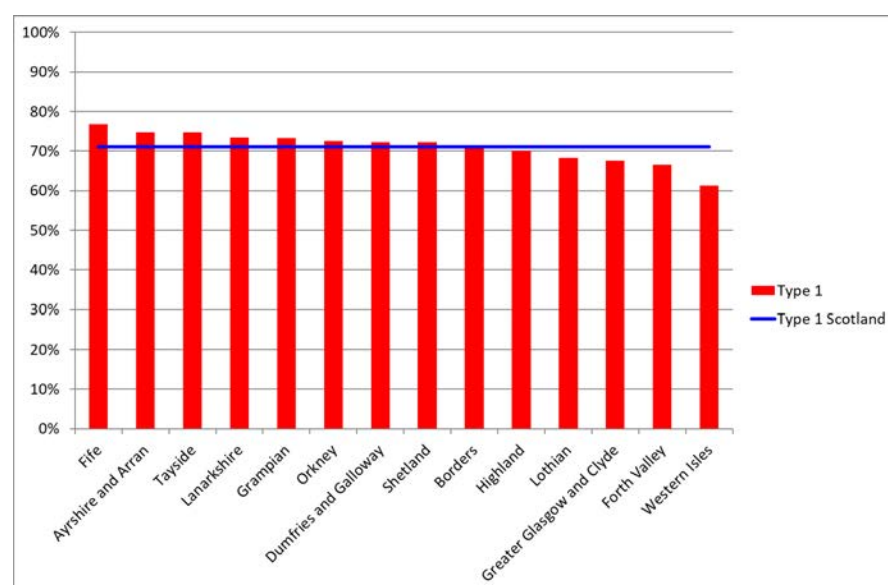
Cholesterol level was recorded in 78.2% of people with type 1 diabetes within the previous 15 months (Table 10).

**Table 10** Number and percentage of people with type 1 diabetes with cholesterol < 5mmol/l, by year (denominator those with recording of cholesterol within the previous 15 months), Scotland 2012-2019.

Year	Cholesterol ≤ 5		Cholesterol > 5		Recorded (%)	Not recorded		Total
	Number	%	Number	%		Number	%	
2019	16,867	71.0	6,873	29.0	78.2	6,617	21.8	30,357
2018	16,094	69.4	7,080	30.6	77.9	6,585	22.1	29,759
2017	14,902	67.5	7,171	32.5	77.7	6,348	22.3	28,421
2016	15,212	69.1	6,792	30.9	79.0	5,855	21.0	27,859
2015	15,489	70.3	6,544	29.7	80.5	5,346	19.5	27,379
2014	15,710	70.9	6,439	29.1	82.6	4,660	17.4	26,809
2013	15,276	71.3	6,153	28.7	81.5	4,865	18.5	26,294
2012	14,622	69.7	6,371	30.3	81.2	4,855	18.8	25,848

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3095). This table is limited to the years since 2012 due to the absence of data prior to that.

**Figure 4** Type 1 diabetes: Percentage of people with cholesterol ≤5mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), Scotland 2019.



Note: Excludes children under 18 years of age and people whose date of birth has not been recorded (n = 3095); horizontal line indicates mean level for Scotland as a whole.

**Table 11** Type 1 diabetes: Number and percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , Scotland 2019.

NHS board	Total cholesterol $\leq 5$ (%)	Total recorded	Not recorded (%)
Fife	76.7	1,659	19.2
Ayrshire and Arran	74.7	1,692	21.7
Tayside	74.7	1,518	27.7
Lanarkshire	73.4	3,200	21.9
Grampian	73.3	2,595	20.7
Orkney	72.6	106	8.6
Dumfries and Galloway	72.2	784	14.9
Shetland	72.2	126	7.4
Borders	70.9	571	15.4
Highland	70.0	1,455	27.2
Lothian	68.3	3,736	21.1
Greater Glasgow and Clyde	67.6	4,770	22.2
Forth Valley	66.5	1,429	19.2
Western Isles	61.3	99	46.5
<b>Scotland</b>	<b>71.0</b>	<b>23,740</b>	<b>21.8</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3095).

See the [Total Cholesterol National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Smoking Status

Smoking status was recorded for 64.0% of those with type 1 diabetes (Table 12). Of those with a record of smoking status, 18.9% had a record of being a current smoker. Note: Data from people of all ages are included in these smoking figures.

**Table 12 Percentage of people with type 1 diabetes who were recorded as current, ex- or never-smokers (denominator those with record of smoking status), Scotland 2012-2019.**

Year	Current smoker (%)	Ex-smoker (%)	Never smoked (%)	Not recorded (%)
2019	18.9	23.5	57.6	36.0
2018	19.4	23.9	56.8	35.9
2017	20.1	23.3	56.6	35.4
2016	22.9	23.4	53.7	37.3
2015	23.9	23.3	52.8	35.8
2014	23.6	23.6	52.8	25.1
2013 (a)	23.5	22.8	53.7	6.4
2012 (a)	23.8	22.9	53.3	9.4

Note: (a) Data for years prior to 2014 are calculated based on whether smoking status has ever been recorded, whereas data from 2014 onwards is calculated based on whether smoking status was recorded in the last 15 months. This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Smoking Status National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Complications of Diabetes

The main complications of diabetes include those due to large vessel (arterial) disease:

- myocardial infarction (MI) – the commonest cause of death in people with diabetes;
- stroke – the risk is increased compared to people without diabetes.
- peripheral vascular disease, which can lead to amputations.

And those due to small vessel disease (microangiopathy):

- renal disease, which can lead to end-stage renal failure requiring dialysis.
- retinopathy – diabetes has been the commonest cause of blindness in people of working age.

Diabetes also leads to poorer outcomes in pregnancy, however, this survey does not include pregnancy outcomes.

The purpose of retinopathy screening is to detect changes early and intervene to prevent further deterioration. In this section, the data presented include both screening performance and recording of prevalent complications. The data sources used are detailed in [Appendix 1: SCI-Diabetes Data Sources](#).

## Myocardial Infarction and Cardiac Revascularisation

3.6% of registered people with type 1 diabetes have a record, derived from primary care records, of a previous MI (Table 13). Others will have had an MI but not survived. 2.9% of registered people with type 1 diabetes have a record of having undergone cardiac revascularisation (Table 13); including coronary artery bypass graft (CABG) and percutaneous transluminal coronary angioplasty (PTCA).

**Table 13 Percentage of people with type 1 diabetes who are recorded as having had a previous myocardial infarction (MI) or cardiac revascularisation, Scotland 2012-2019.**

Year	Myocardial infarction (%)	Cardiac Revascularisation (%)
2019	3.6	2.9
2018	3.6	2.8
2017	3.5	2.7
2016	3.5	2.6
2015	3.5	2.6
2014	3.5	2.6
2013	3.6	2.6
2012	3.6	2.5

Note: The Myocardial infarction column shows the percentage of people with diabetes who have ever had a primary care record of a heart attack and survived. This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Myocardial Infarction and Cardiac Revascularisation National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.



## Kidney Function and Disease

### *Serum Creatinine*

Serum creatinine was recorded in the previous 15 months for 86.1% (32,226) of people with type 1 diabetes aged 12 years or over (Table 14).

**Table 14 Percentage of people with type 1 diabetes who had a record of serum creatinine within the previous 15 months, Scotland 2012-2019.**

Year	Recorded within previous 15 months (%)	Total eligible population
2019	86.1	32,226
2018	85.8	31,604
2017	86.0	30,243
2016	86.5	29,710
2015	87.3	29,227
2014	87.3	28,712
2013	83.8	28,209
2012	83.4	27,775

Note: Excludes children under 12 years of age or people who have no date of birth recorded (n = 1226). This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Serum Creatinine National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Urinary Albuminuria

Table 15 shows information on the recording of albuminuria.

**Table 15** Number and percentage of people with type 1 diabetes who have a record of estimated urinary albumin value available on SCI-Diabetes within the previous 15 months, Scotland 2012-2019.

Year	Recorded within previous 15 months	
	Number	%
2019	20,450	63.5
2018	19,844	62.8
2017	18,928	62.6
2016	18,815	63.3
2015	18,180	62.2
2014	18,516	64.5
2013	17,256	61.2
2012	16,851	60.7

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226). In some cases, urinary albumin was estimated from albumin/creatinine ratio (ACR). This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Urinary Albuminuria National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Diabetic Eye Screening and Disease

### Diabetic Retinal Screening

80.9% of people eligible for screening had a record of diabetic eye screening through the retinal screening service recorded on SCI-Diabetes in the previous 15 months, including those attending ophthalmology services (Table 16).

Table 16 shows the proportion of people of appropriate age ( $\geq 12$  years) who were either screened, were getting eye-care via specialist services or were deliberately (for clinical or social reasons) suspended from screening as a proportion of the total number of people who had a record of date of birth and were over 12 years of age.

**Table 16** Percentage of people with type 1 diabetes who were recorded as having had diabetic eye-screening, ophthalmology care or an appropriate suspension from screening (depending on methodology at the time of the report), Scotland 2012-2019.

Year	Recorded within previous 15 months (%)
2019	80.9
2018	80.2
2017	78.8
2016	81.5
2015	82.4
2014	82.8
2013	82.8
2012	82.0

Note: Excludes children under 12 years or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102). This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Diabetic Renal Screening National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

## Foot Complications

### *Foot Ulceration*

**Table 17** Percentage of people with type 1 diabetes who had a record of ever having had a foot ulcer, Scotland 2012-2019.

Year	Recorded as ever having had a foot ulcer (%)
2019	8.4
2018	8.4
2017	8.2
2016	8.2
2015	8.4
2014	8.5
2013	8.8
2012	8.5

Note: This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Foot Complications National and Regional Detail](#) section for a summary of people with either type 1 and 2 diabetes and detailed information by NHS board.

*This marks the end of the section solely focused on type 1 diabetes.*

# Paediatric Supplement

This supplement provides an opportunity to more closely review statistics, processes and outcomes of care in the paediatric population. Although representing a small number relative to the total with diabetes in Scotland, this clearly defined patient group has some significant differences from the adult population.

## Introduction

Some variations between children and adults with diabetes are presented in the Survey. Age banding from 0-17 years has been included, as have on some measures the more narrowly defined age groups of 0-5, 6-11 and 12-17 years. Further, the aetiological differentiation between those with type 1 and type 2 diabetes gives some insight into results and outcomes for the paediatric population, who most typically have the type 1 form of the condition.

Compared to the adult population, where both type 1 and type 2 disease are well represented, autoimmune type 1 diabetes is the predominant form in the young.

Autoimmunity is the major cause for the development of diabetes in the young. It is also associated with the possible onset of other conditions, such as thyroid or adrenal disease. Screening for these conditions, as well as for glycaemia-related complications, is an essential process of care in the paediatric diabetes population.

While an adult may be expected to deliver their own care, this may not be appropriate in the young. The child may not be capable or simply not understand why care is necessary.

For school-age children with diabetes, family members (parents, siblings, grandparents, etc.) and carers (nursery staff, teachers, sports club staff, etc.) will all require diabetes education. Self-motivation and acceptance of personal responsibility may develop much later, and while completion of a structured education programme will likely be needed for all senior family members, a young person will only take advantage of this information once sufficiently mature.

Although issues such as driving, work, smoking, alcohol consumption and pregnancy are relevant to adults with diabetes, these will have variable importance for adolescents. Developing autonomy, schoolwork and study, peer and societal pressures are factors more likely to concern both adolescents and younger children. Further, morbidity and mortality in the young nearly always result from acute metabolic disturbance, rather than from chronic complications.

For those diagnosed with diabetes at a young age, the personal and societal burdens of diabetes are more likely to arise at an earlier age and, ultimately, risk being more severe. Although the overt development of such complications in the young is rare, optimising glycaemic control during this time of growth and psychological development is very important.

## Commentary on Scottish Paediatric Diabetes Data

This second paediatric subsection of the Scottish Diabetes Survey contains data available from the SCI Diabetes clinical system, which itself integrates information from sources listed in Appendix 1: SCI-Diabetes Data Sources. The factors analysed in the Paediatric supplement below include the following items, listed according to Health Board:

- Prevalence
- Incidence
- Insulin pump use
- Retinopathy screening completion
- Blood pressure recording completion
- Albumin/creatinine ratio collection
- Thyroid screening (TSH) collection
- Coeliac disease screening (antibodies) collection
- HbA<sub>1c</sub> collection

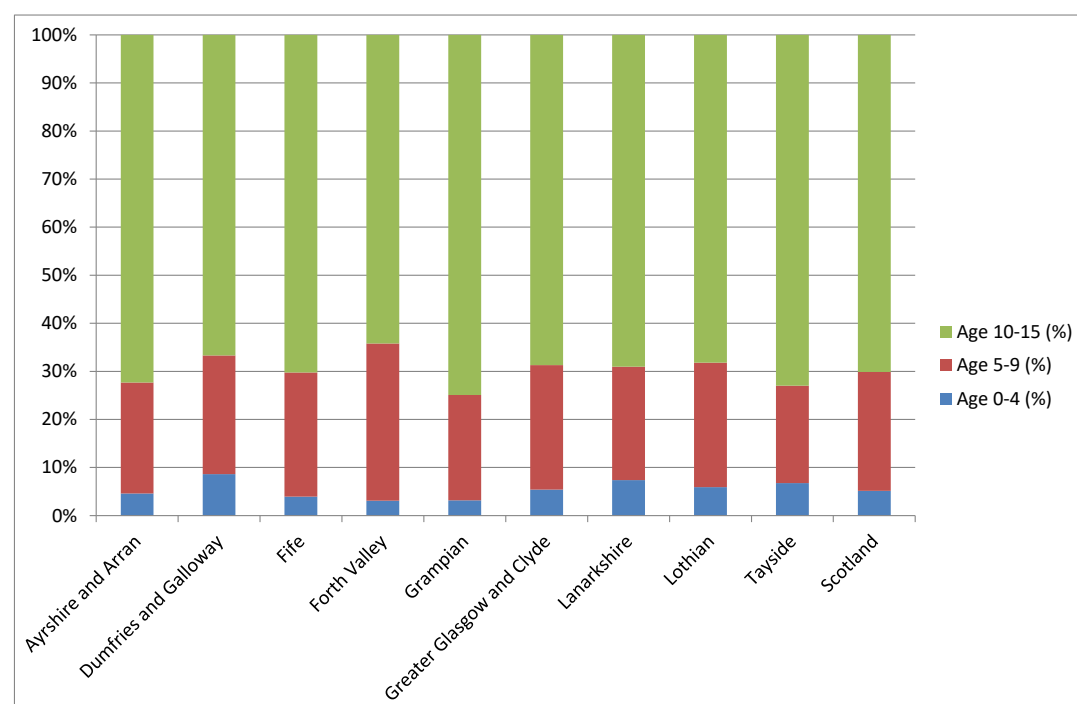
In order to protect individual confidentiality, we do not report data when the number of patients is small.

Concealment of data is intended to maintain subject anonymity. However, it can also hinder analysis and interpretation. Data may not be readily available from smaller centres, and although numbers for review may be increased by aggregating data by age, region or even nationally, this may hinder the presentation of information for smaller centres.

The survey presents data to measure adherence to agreed clinical standards. NICE guidelines recommend annual retinopathy and microalbuminuria screening from the age of 12 years. People 12 years and older are registered in the national Retinal Screening Programme and are invited to participate annually. Screening for microalbuminuria using albumin/creatinine ratio (ACR), and regular measurement of blood pressure are similarly recommended from the age of 12 years. Measurement of thyroid function and coeliac disease antibodies are also recommended.

The survey has identified some differences in care delivery compared to the recognised standards.

The publication of this Paediatric Supplement enables the diabetes community to be better placed to understand what is required to improve care and this should result in better outcomes for people with diabetes.

**Figure 5 Proportions of all people with diabetes under 16 years of age by age band and health board, Scotland 2019.**

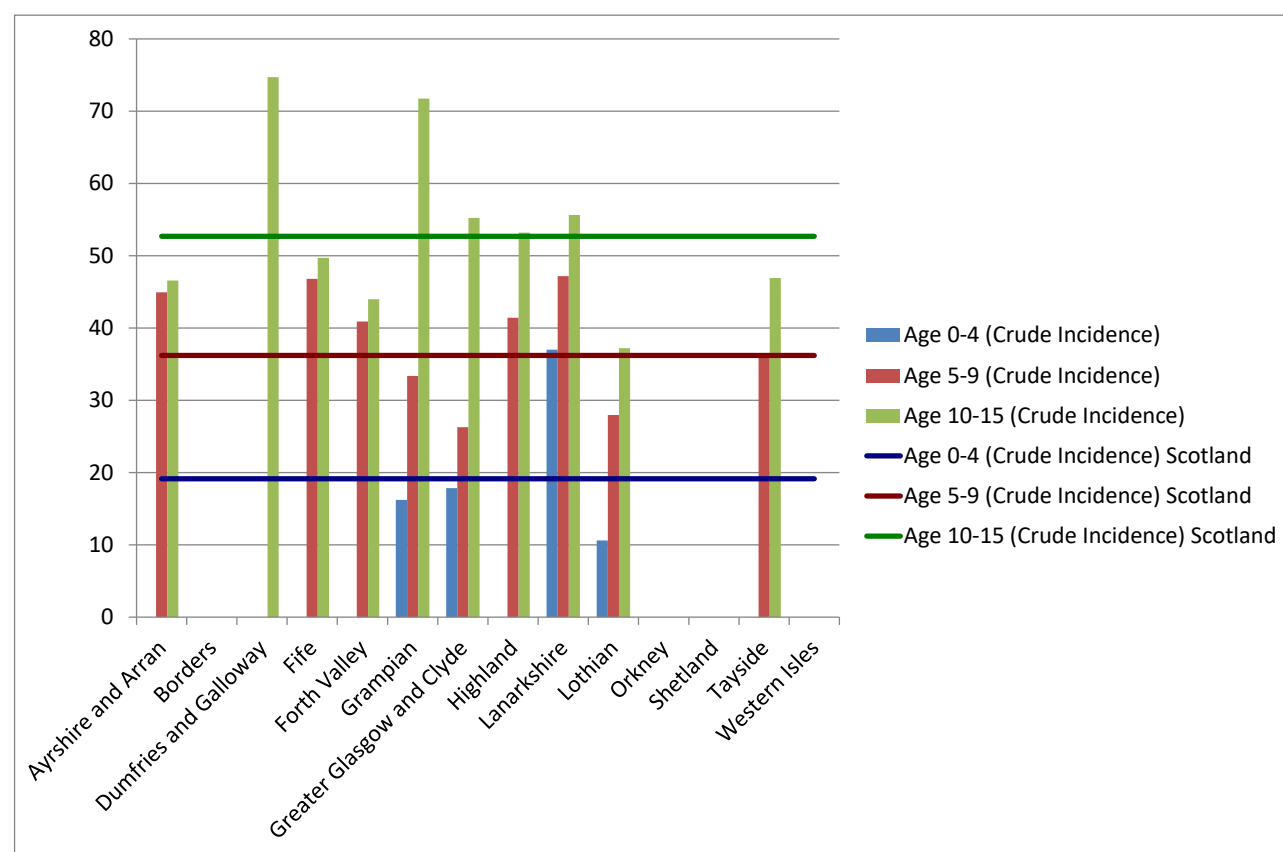
Note: Bars for boards with hidden data aren't shown. The collation of data in a 0-4 year age group was to allow comparison of local data with those of international studies suggesting an increased prevalence and incidence in those under 5 years of age.

**Table 18 Proportions of all people with diabetes under 16 years of age by age band and health board, Scotland 2019.**

NHS board	Age 0-4		Age 5-9		Age 10-15	
	n	%	n	%	n	%
Ayrshire and Arran	9	4.6	45	23.1	141	72.3
Borders	*	*	*	*	*	*
Dumfries and Galloway	7	8.6	20	24.7	54	66.7
Fife	7	3.9	46	25.8	125	70.2
Forth Valley	5	3.1	53	32.7	104	64.2
Grampian	9	3.2	62	21.9	212	74.9
Greater Glasgow and Clyde	24	5.4	115	25.9	305	68.7
Highland	*	*	*	*	*	*
Lanarkshire	27	7.4	86	23.6	252	69.0
Lothian	18	5.9	79	25.9	208	68.2
Orkney	*	*	0	0.0	*	*
Shetland	0	0.0	*	*	*	*
Tayside	10	6.8	30	20.3	108	73.0
Western Isles	0	0.0	*	*	*	*
<b>Scotland</b>	<b>124</b>	<b>0.1</b>	<b>593</b>	<b>0.2</b>	<b>1,684</b>	<b>0.7</b>

Note: There is a risk of identifying individuals when small numbers of events are presented in health statistics ("NHS National Services Scotland: Statistical Disclosure Control Protocol." from [http://www.isdscotland.org/About-isd/Confidentiality/disclosure\\_protocol\\_v3.pdf](http://www.isdscotland.org/About-isd/Confidentiality/disclosure_protocol_v3.pdf)). \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 6 Incidence rate (per 100,000 population per year) for people under 16 years of age by age band and health board, Scotland 2019.**



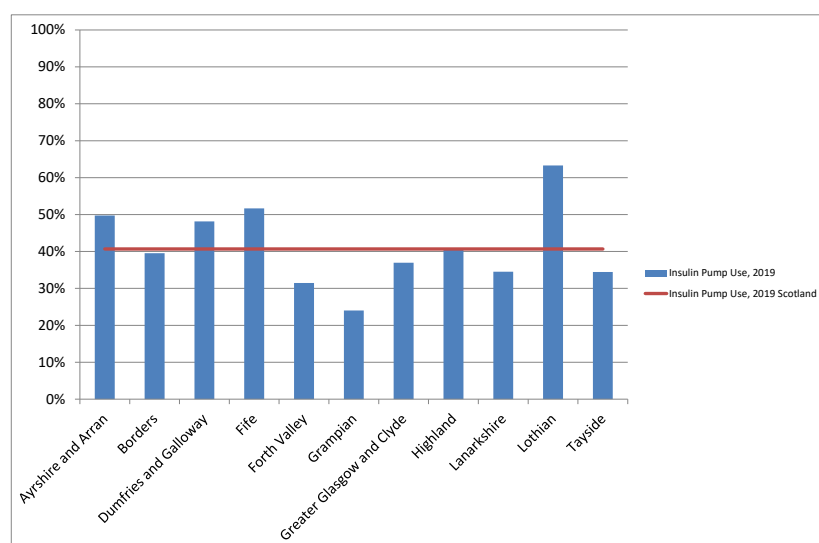
**Table 19 Number of new cases and incidence rate (per 100,000 population per year) for people under 16 years of age by age band and health board, Scotland 2019.**

NHS board	Age 0-4			Age 5-9			Age 10-15		
	n	In.	Pop.	N	In.	Pop.	n	In.	Pop.
Ayrshire and Arran	*	*	17,888	9	45	20,022	11	47	23,627
Borders	*	*	5,486	*	*	6,205	*	*	7,355
Dumfries and Galloway	*	*	6,488	*	*	7,566	7	75	9,370
Fife	*	*	18,956	10	47	21,372	12	50	24,145
Forth Valley	*	*	15,155	7	41	17,110	9	44	20,459
Grampian	5	16	30,837	11	33	32,961	26	72	36,241
Greater Glasgow and Clyde	11	18	61,677	17	26	64,696	39	55	70,615
Highland	*	*	14,786	7	41	16,897	11	53	20,676
Lanarkshire	13	37	35,132	18	47	38,143	25	56	44,940
Lothian	5	11	47,138	14	28	50,049	20	37	53,739
Orkney	*	*	966	0	0	1,156	*	*	1,422
Shetland	0	0	1,195	*	*	1,405	*	*	1,605
Tayside	*	*	19,959	8	36	22,159	12	47	25,576
Western Isles	0	0	1,199	0	0	1,348	*	*	1,781
<b>Scotland</b>	<b>53</b>	<b>19</b>	<b>276,862</b>	<b>109</b>	<b>36</b>	<b>301,089</b>	<b>180</b>	<b>53</b>	<b>341,551</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. The calculation of crude incidence is a slight underestimate, as the at-risk population includes small numbers of people with frank diabetes.



**Figure 7 Percentage of people with diabetes under 16 years of age recorded as using an insulin pump by NHS board, Scotland 2019.**



Note: Percentage of all people with diabetes under 16 years of age using an insulin pump by Health Board. Bars for boards with hidden data aren't shown.

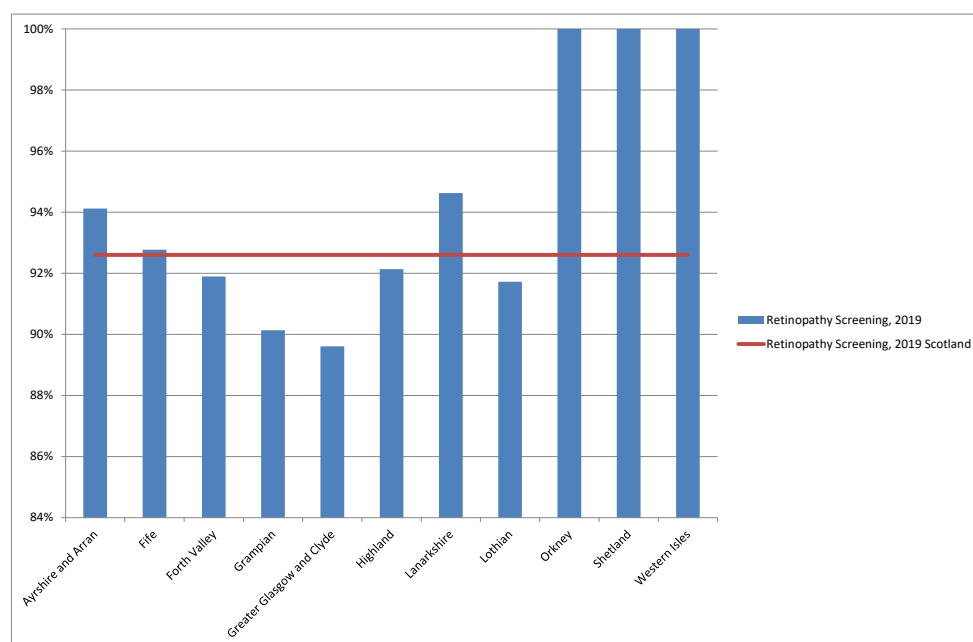
In 2011 a national target was set that, by March 2013, 25% of all those in Scotland under 18 years of age with diabetes should have access to an insulin pump. The figures show that this initial target has been met and, in most centres, exceeded by a reasonable margin. However, a clear majority remain on injection therapy. In future, the reasons for this, along with other aspects of medical technology applied to diabetes care, such as Continuous Glucose Monitoring (CGM) and Flash Glucose Monitoring (FGM), may be reviewed.

**Table 20 Number and percentage of people with diabetes under 16 years of age recorded as using an insulin pump by NHS board, Scotland 2019.**

NHS board	Pump		No pump	
	N	%	N	%
Ayrshire and Arran	97	49.7	98	50.3
Borders	17	39.5	26	60.5
Dumfries and Galloway	39	48.1	42	51.9
Fife	92	51.7	86	48.3
Forth Valley	51	31.5	111	68.5
Grampian	68	24.0	215	76.0
Greater Glasgow and Clyde	164	36.9	280	63.1
Highland	65	40.6	95	59.4
Lanarkshire	126	34.5	239	65.5
Lothian	193	63.3	112	36.7
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	51	34.5	97	65.5
Western Isles	*	*	*	*
<b>Scotland</b>	<b>977</b>	<b>40.7</b>	<b>1,424</b>	<b>59.3</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 8** Percentage of people with diabetes under 16 years of age eligible for diabetic retinopathy screening (DRS) who were screened within the last 15 months by NHS board, Scotland 2019.



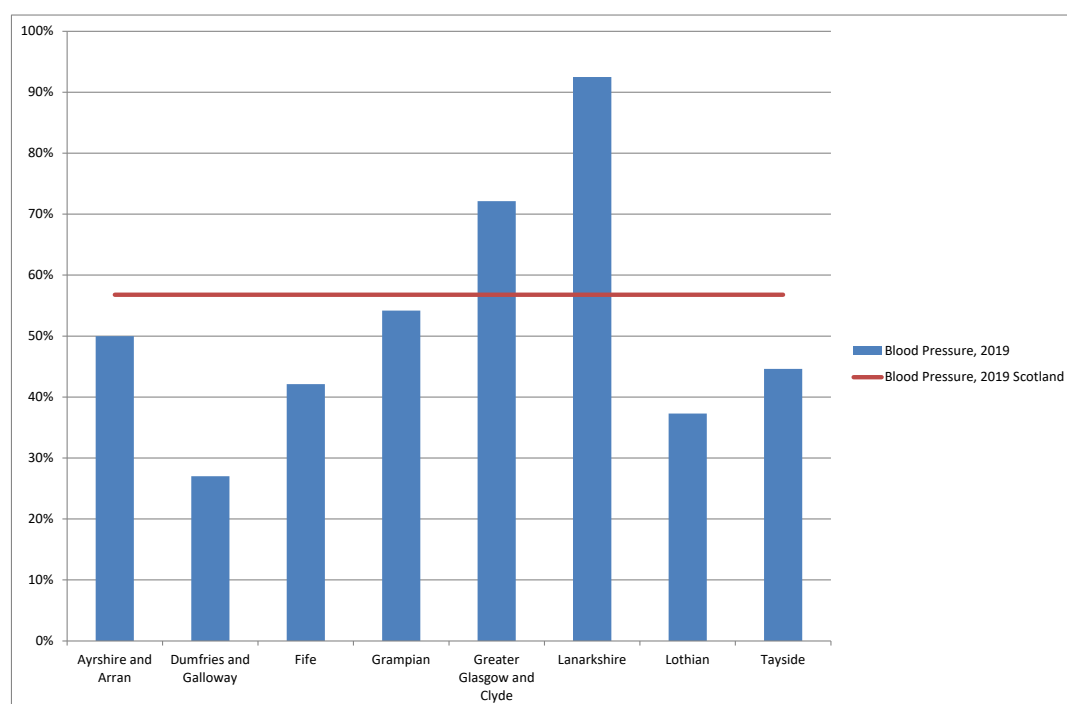
Note: Bars for boards with hidden data aren't shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence to, national standards will improve the percentage attaining a particular measure of care.

**Table 21** Number and percentage of people with diabetes under 16 years of age eligible for diabetic retinopathy screening (DRS) who were screened within the last 15 months by NHS board, Scotland 2019.

NHS board	Screened		Not screened	
	n	%	N	%
Ayrshire and Arran	96	94.1	6	5.9
Borders	*	*	*	*
Dumfries and Galloway	*	*	*	*
Fife	77	92.8	6	7.2
Forth Valley	68	91.9	6	8.1
Grampian	137	90.1	15	9.9
Greater Glasgow and Clyde	181	89.6	21	10.4
Highland	82	92.1	7	7.9
Lanarkshire	176	94.6	10	5.4
Lothian	144	91.7	13	8.3
Orkney	*	100.0	*	0.0
Shetland	*	100.0	*	0.0
Tayside	*	*	*	*
Western Isles	*	100.0	0	0.0
<b>Scotland</b>	<b>1,114</b>	<b>92.6</b>	<b>89</b>	<b>7.4</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Only eligible patients, from their 12<sup>th</sup> birthday until the day before their 16<sup>th</sup> birthday, are included in these figures.

**Figure 9** Percentage of people with diabetes under 16 years of age with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2019.



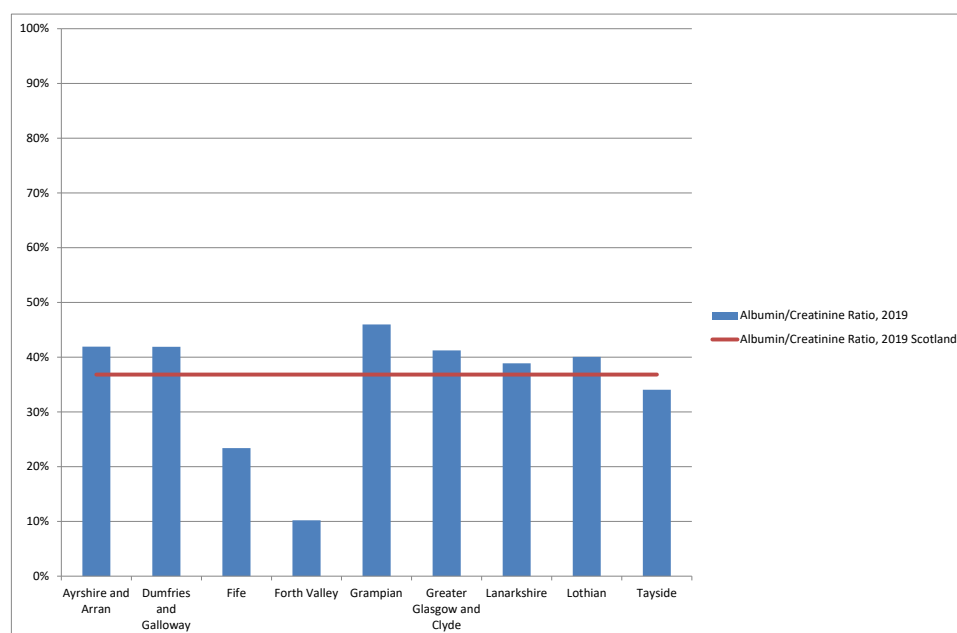
Note: Bars for boards with hidden data aren't shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence to, national standards will improve the percentage attaining a particular measure of care.

**Table 22** Number and Percentage of people with diabetes under 16 years of age with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2019.

NHS board	Measured		Not measured	
	n	%	n	%
Ayrshire and Arran	93	50.0	93	50.0
Borders	*	*	*	*
Dumfries and Galloway	20	27.0	54	73.0
Fife	72	42.1	99	57.9
Forth Valley	*	*	*	*
Grampian	149	54.2	126	45.8
Greater Glasgow and Clyde	303	72.1	117	27.9
Highland	*	*	*	*
Lanarkshire	333	92.5	27	7.5
Lothian	107	37.3	180	62.7
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	62	44.6	77	55.4
Western Isles	*	*	*	*
<b>Scotland</b>	<b>1,307</b>	<b>56.8</b>	<b>995</b>	<b>43.2</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Only eligible people, from their 5<sup>th</sup> birthday until the day before their 16<sup>th</sup> birthday, are included.

**Figure 10** Percentage of people with diabetes under 16 years of age with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2019.



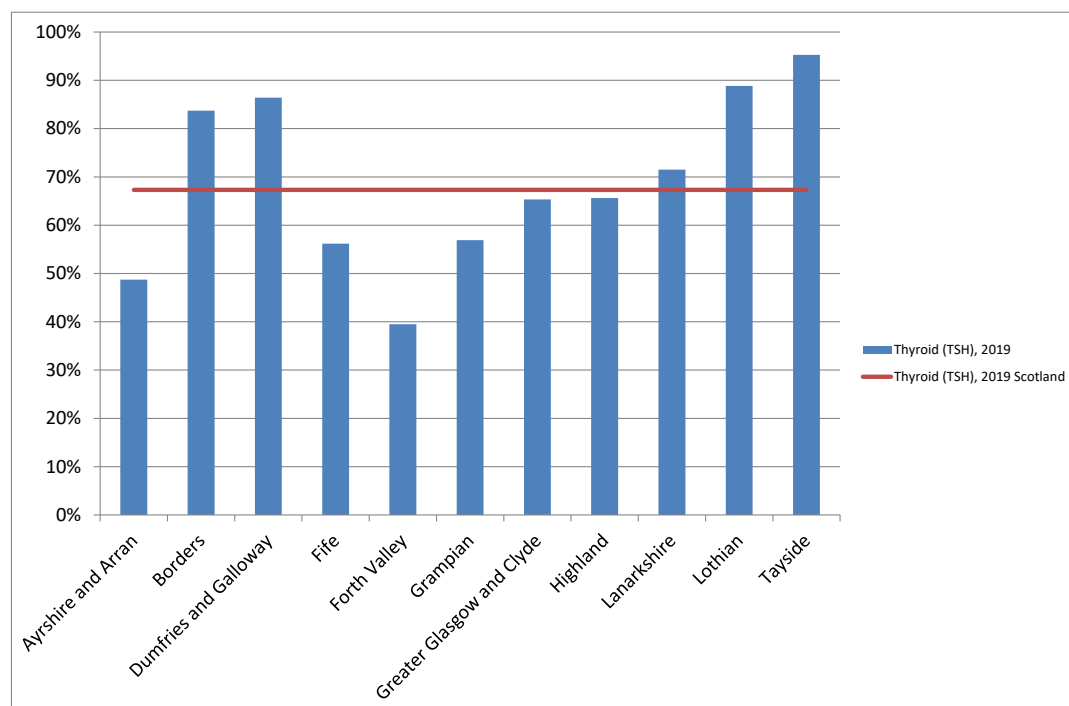
Note: Bars for boards with hidden data aren't shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence to, national standards will improve the percentage attaining a particular measure of care.

**Table 23** Number and percentage of people with diabetes under 16 years of age with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2019.

NHS board	Measured		Not measured	
	N	%	n	%
Ayrshire and Arran	78	41.9	108	58.1
Borders	*	*	*	*
Dumfries and Galloway	31	41.9	43	58.1
Fife	40	23.4	131	76.6
Forth Valley	16	10.2	141	89.8
Grampian	126	46.0	148	54.0
Greater Glasgow and Clyde	174	41.2	248	58.8
Highland	*	*	*	*
Lanarkshire	133	38.9	209	61.1
Lothian	115	40.1	172	59.9
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	47	34.1	91	65.9
Western Isles	*	*	*	*
<b>Scotland</b>	<b>841</b>	<b>36.8</b>	<b>1,442</b>	<b>63.2</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Only eligible patients, from their 5<sup>th</sup> birthday until the day before their 16<sup>th</sup> birthday, are included.

**Figure 11 Percentage of people with diabetes under 16 years of age recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2019.**



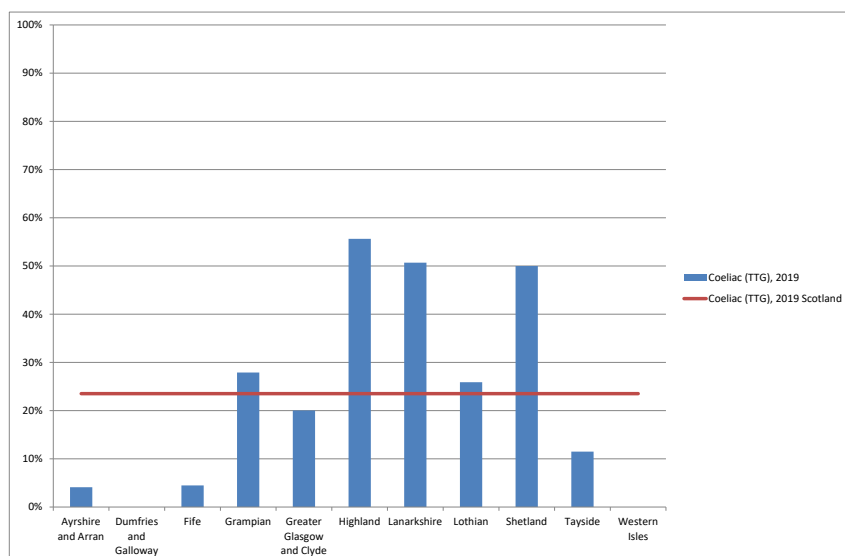
Note: Bars for boards with hidden data aren't shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence to, national standards will improve the percentage attaining a particular measure of care.

**Table 24 Number and percentage of people with diabetes under 16 years of age recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2019.**

NHS board	Measured		Not measured	
	n	%	n	%
Ayrshire and Arran	95	48.7	100	51.3
Borders	36	83.7	7	16.3
Dumfries and Galloway	70	86.4	11	13.6
Fife	100	56.2	78	43.8
Forth Valley	64	39.5	98	60.5
Grampian	161	56.9	122	43.1
Greater Glasgow and Clyde	290	65.3	154	34.7
Highland	105	65.6	55	34.4
Lanarkshire	261	71.5	104	28.5
Lothian	271	88.9	34	11.1
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	141	95.3	7	4.7
Western Isles	*	*	*	*
<b>Scotland</b>	<b>1,616</b>	<b>67.3</b>	<b>785</b>	<b>32.7</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 12 Percentage of people with diabetes under 16 years of age recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2019.**



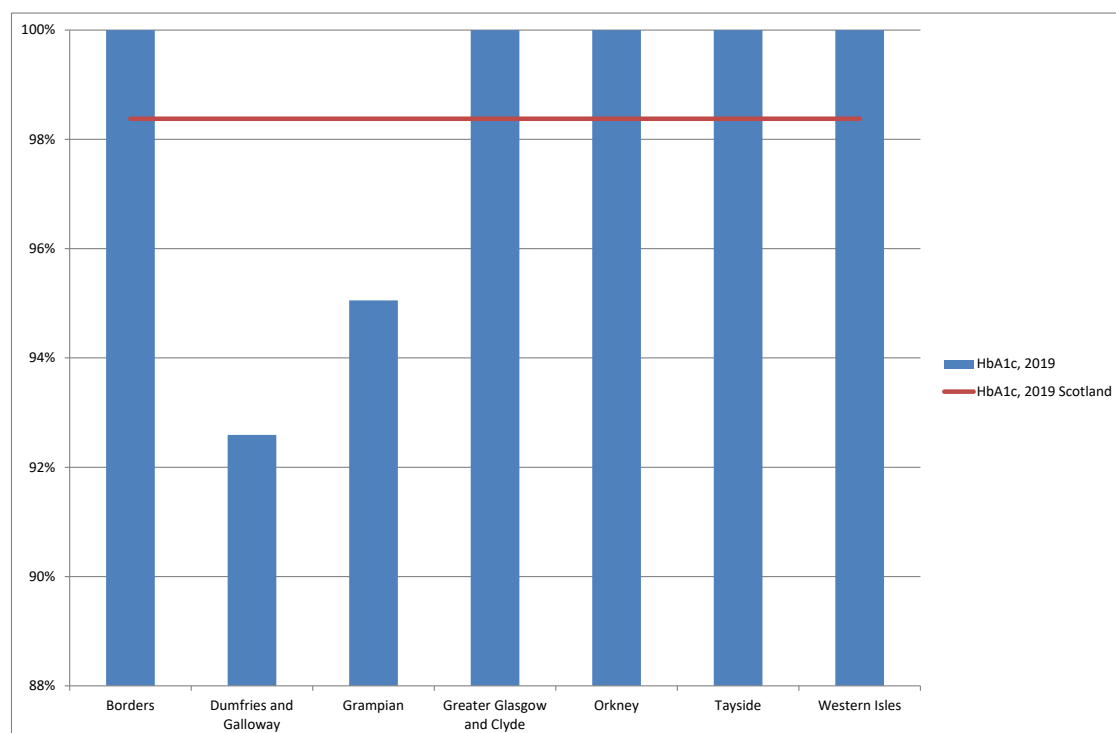
Note: Bars for boards with hidden data aren't shown. Variations in local centre practice may result in different age-range exclusions, screening tests being carried out at different intervals or manual data entry into SCI-Diabetes not being performed. Some centres choose only to test TTG results at the time diabetes is first diagnosed, and subsequently every 2 years (rather than annually), while others may only test for positive TTG results when coeliac disease symptoms are present, and not as a screening test. Annual data may not therefore reflect actual numbers appropriately screened. This may be reflected in the apparently large number of centres with few patients having been successfully screened.

**Table 25 Number and percentage of people with diabetes under 16 years of age recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2019.**

NHS board	Measured		Not measured	
	n	%	n	%
Ayrshire and Arran	8	4.1	187	95.9
Borders	*	*	*	*
Dumfries and Galloway	0	0.0	81	100.0
Fife	8	4.5	170	95.5
Forth Valley	*	*	*	*
Grampian	79	27.9	204	72.1
Greater Glasgow and Clyde	89	20.0	355	80.0
Highland	89	55.6	71	44.4
Lanarkshire	185	50.7	180	49.3
Lothian	79	25.9	226	74.1
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	17	11.5	131	88.5
Western Isles	0	0.0	*	100.0
<b>Scotland</b>	<b>565</b>	<b>23.5</b>	<b>1,836</b>	<b>76.5</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 13 Percentage of people with diabetes under 16 years of age with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2019.**



Note: Bars for boards with hidden data aren't shown. These data include HbA<sub>1c</sub> taken at time of diagnosis, as well as those collected at clinic attendances, subsequent hospital admissions (for any reason), and in primary care.

**Table 26 Number and percentage of people with diabetes under 16 years of age with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2019.**

NHS board	Measured		Not measured	
	n	%	N	%
Ayrshire and Arran	*	*	*	*
Borders	43	100.0	0	0.0
Dumfries and Galloway	75	92.6	6	7.4
Fife	*	*	*	*
Forth Valley	*	*	*	*
Grampian	269	95.1	14	4.9
Greater Glasgow and Clyde	444	100.0	0	0.0
Highland	*	*	*	*
Lanarkshire	*	*	*	*
Lothian	*	*	*	*
Orkney	*	100.0	*	0.0
Shetland	*	*	*	*
Tayside	148	100.0	0	0.0
Western Isles	*	100.0	0	0.0
<b>Scotland</b>	<b>2,362</b>	<b>98.4</b>	<b>39</b>	<b>1.6</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. For this measure, all boards with hidden results have  $\geq 90\%$  attainment of the stipulated measure.

## Care Processes

Quarterly reports of 9 processes and outcomes of care are now being reported back to each NHS board. There are 12 measures within this. The report for the last quarter of the year is described below.

The processes and outcomes described in this report represent work in progress and need to be considered as such.

**Table 27    Applicability of Care Processes by Age Category.**

Diagnosis and age category	Care processes applicable
Type 1 and other age 0-11	Processes 1 and 2
Type 1 and other age 12-17	Processes 1 to 6
Type 1, type 2 and other age 18+	All 9 processes

Other = any other frank diabetes type not included elsewhere.



## Measure 1: Receiving All Processes of Care

Percentage of people with diabetes who received all recommended (up to 9) processes of care measurements for diabetes in the prior 15 months – adjusted for and presented in defined age ranges.

### Methodology

Included population = all people of any age with diabetes are included.

### List of Care processes

1. HbA<sub>1c</sub>
2. Weight (BMI)
3. Blood pressure
4. Smoking status
5. Retinopathy screening\*
6. Urinary albumin test\*\*
7. Creatinine
8. Total cholesterol
9. Foot risk

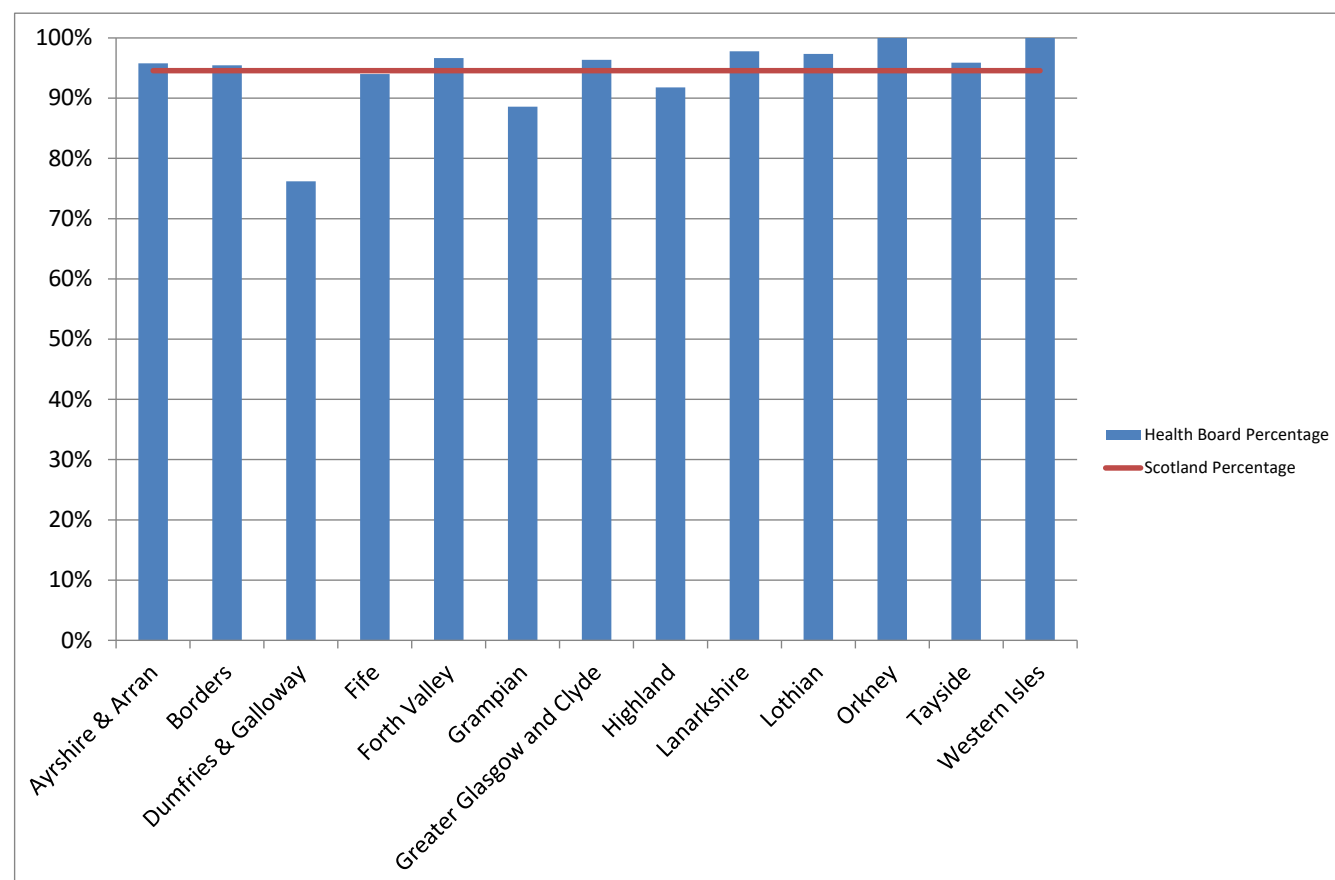
\*Retinopathy screening = Latest DRS Screening Status is "Attended - Successfully Screened" or "Attended - Unsuccessfully Screened". Note – if the patient has been suspended from eye screening this is counted as having received this "process of care".

\*\*Urinary Albumin test = any of the following: albumin / creatinine ratio (ACR), microalbumin concentration, protein / creatinine ratio (PCR) or total urinary protein, Timed overnight albumin excretion rate, or 24hr albumin excretion rate.

### Notes

Where no data is shown in the bar-chart, this could indicate that no people were found that met the inclusion criteria or it could indicate that of those that did meet the criteria, none had the required number of processes.

In the bar-charts of those under 18 years of age, obfuscation for the purposes of maintaining anonymity has meant that data from some boards are not presented in the accompanying chart or table. A large proportion of those under 12 years of age receive the two processes of care required in this age range (recording of HbA<sub>1c</sub> and weight at least once annually), while those from 12 to 18 years of age have a much poorer attainment of their increased number of processes (six).

**Figure 14 Measure 1: Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

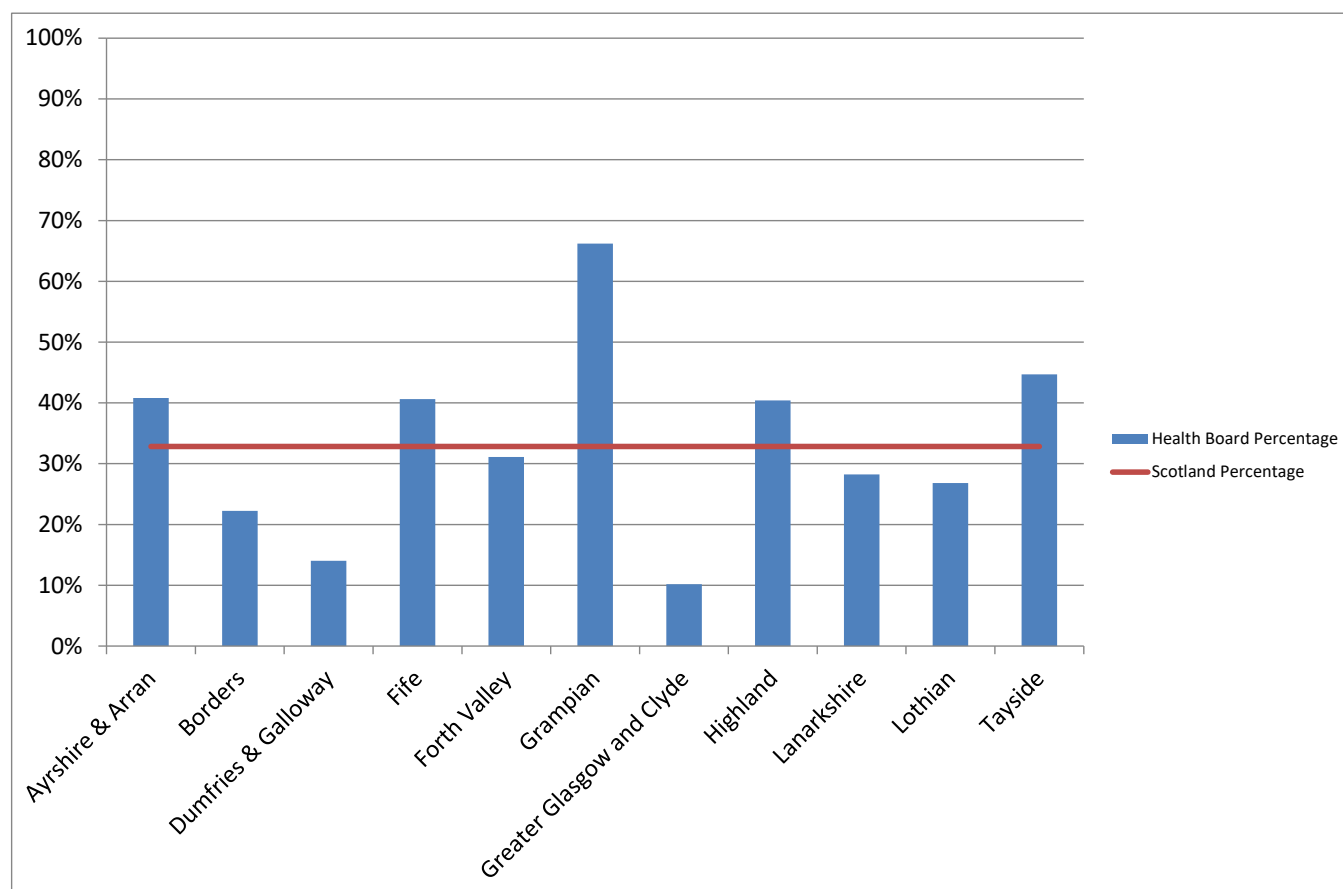
Note: Bars for boards with hidden data aren't shown.

**Table 28 Measure 1: Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 0-11 (n)
	n	%	
Ayrshire & Arran	91	95.8	95
Borders	21	95.5	22
Dumfries & Galloway	32	76.2	42
Fife	94	94.0	100
Forth Valley	87	96.7	90
Grampian	124	88.6	140
Greater Glasgow and Clyde	238	96.4	247
Highland	67	91.8	73
Lanarkshire	177	97.8	181
Lothian	148	97.4	152
Orkney	*	100.0	*
Shetland	*	*	*
Tayside	70	95.9	73
Western Isles	9	100.0	9
<b>Scotland</b>	<b>1,166</b>	<b>94.6</b>	<b>1,233</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 15 Measure 1: Receiving all applicable processes of care - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

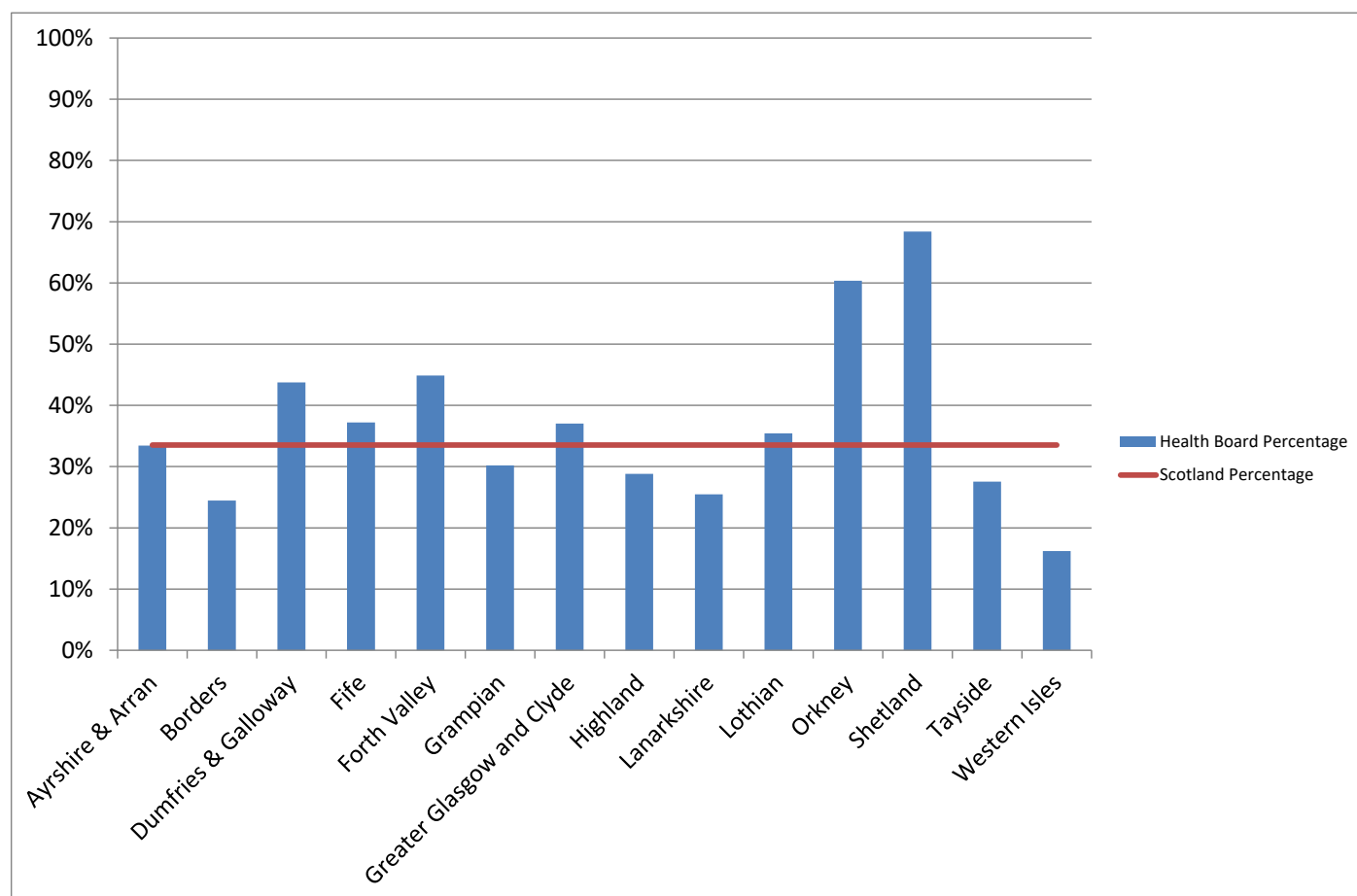


Note: Bars for boards with hidden data aren't shown.

**Table 29 Measure 1: Receiving all applicable processes of care - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

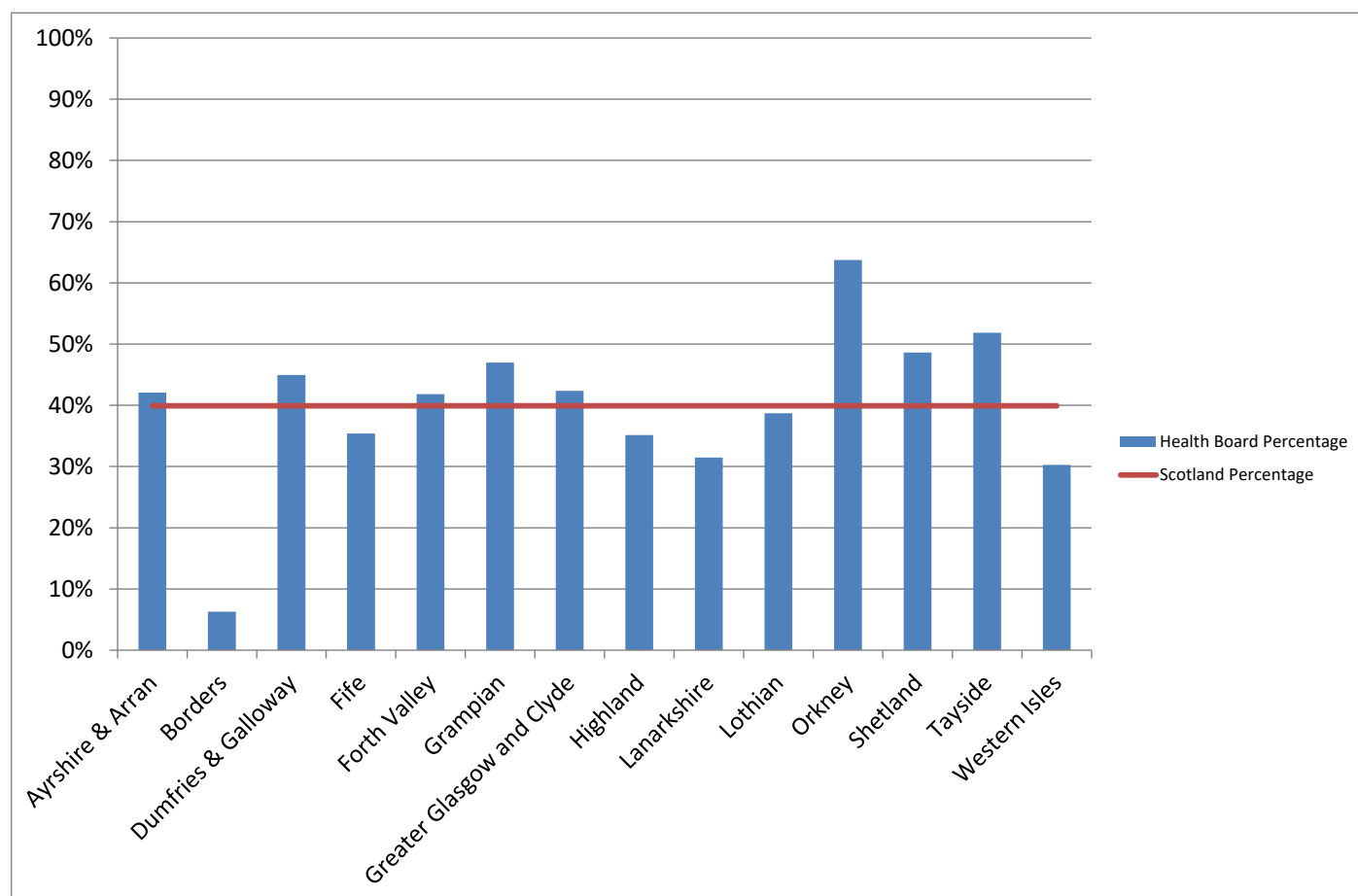
NHS board	Achieving measure		All aged 12-17 (n)
	n	%	
Ayrshire & Arran	60	40.8	147
Borders	10	22.2	45
Dumfries & Galloway	8	14.0	57
Fife	52	40.6	128
Forth Valley	37	31.1	119
Grampian	147	66.2	222
Greater Glasgow and Clyde	37	10.2	363
Highland	59	40.4	146
Lanarkshire	81	28.2	287
Lothian	74	26.8	276
Orkney	*	*	*
Shetland	*	*	*
Tayside	59	44.7	132
Western Isles	*	*	13
<b>Scotland</b>	<b>641</b>	<b>32.8</b>	<b>1,952</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 16 Measure 1: Receiving all applicable processes of care - Type 1 Age 18+ by NHS board, Scotland 2019.****Table 30 Measure 1: Receiving all applicable processes of care - Type 1 Age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	n	%	
Ayrshire & Arran	723	33.4	2,162
Borders	165	24.4	675
Dumfries & Galloway	403	43.8	921
Fife	764	37.2	2,054
Forth Valley	794	44.9	1,769
Grampian	988	30.2	3,272
Greater Glasgow and Clyde	2,272	37.0	6,135
Highland	576	28.8	1,999
Lanarkshire	1,043	25.5	4,096
Lothian	1,677	35.4	4,734
Orkney	70	60.3	116
Shetland	93	68.4	136
Tayside	579	27.6	2,101
Western Isles	30	16.2	185
<b>Scotland</b>	<b>10,177</b>	<b>33.5</b>	<b>30,355</b>

**Figure 17 Measure 1: Receiving all applicable processes of care - Type 2 and other age 18+ by NHS board, Scotland 2019.**



**Table 31 Measure 1: Receiving all applicable processes of care - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	n	%	
Ayrshire & Arran	9,512	42.1	22,611
Borders	395	6.3	6,285
Dumfries & Galloway	3,966	45.0	8,821
Fife	7,281	35.4	20,562
Forth Valley	6,789	41.8	16,236
Grampian	12,508	47.0	26,616
Greater Glasgow and Clyde	25,240	42.4	59,573
Highland	5,809	35.1	16,528
Lanarkshire	11,717	31.5	37,248
Lothian	15,031	38.7	38,841
Orkney	716	63.8	1,123
Shetland	496	48.6	1,020
Tayside	11,350	51.9	21,886
Western Isles	413	30.3	1,365
<b>Scotland</b>	<b>111,223</b>	<b>39.9</b>	<b>278,715</b>

## Measure 2: HbA<sub>1c</sub> in Target Range After 1 Year

Percentage of people with diabetes with an HbA<sub>1c</sub> <58 mmol/mol at 1-year post diagnosis - presented in defined age ranges.

### Methodology

Included population = people with diabetes of any age with a duration of diabetes between 1 and 2 years on the date of the quarterly report, and a recording of HbA<sub>1c</sub> within (+/-) 90 days of their 1<sup>st</sup> anniversary of diagnosis.

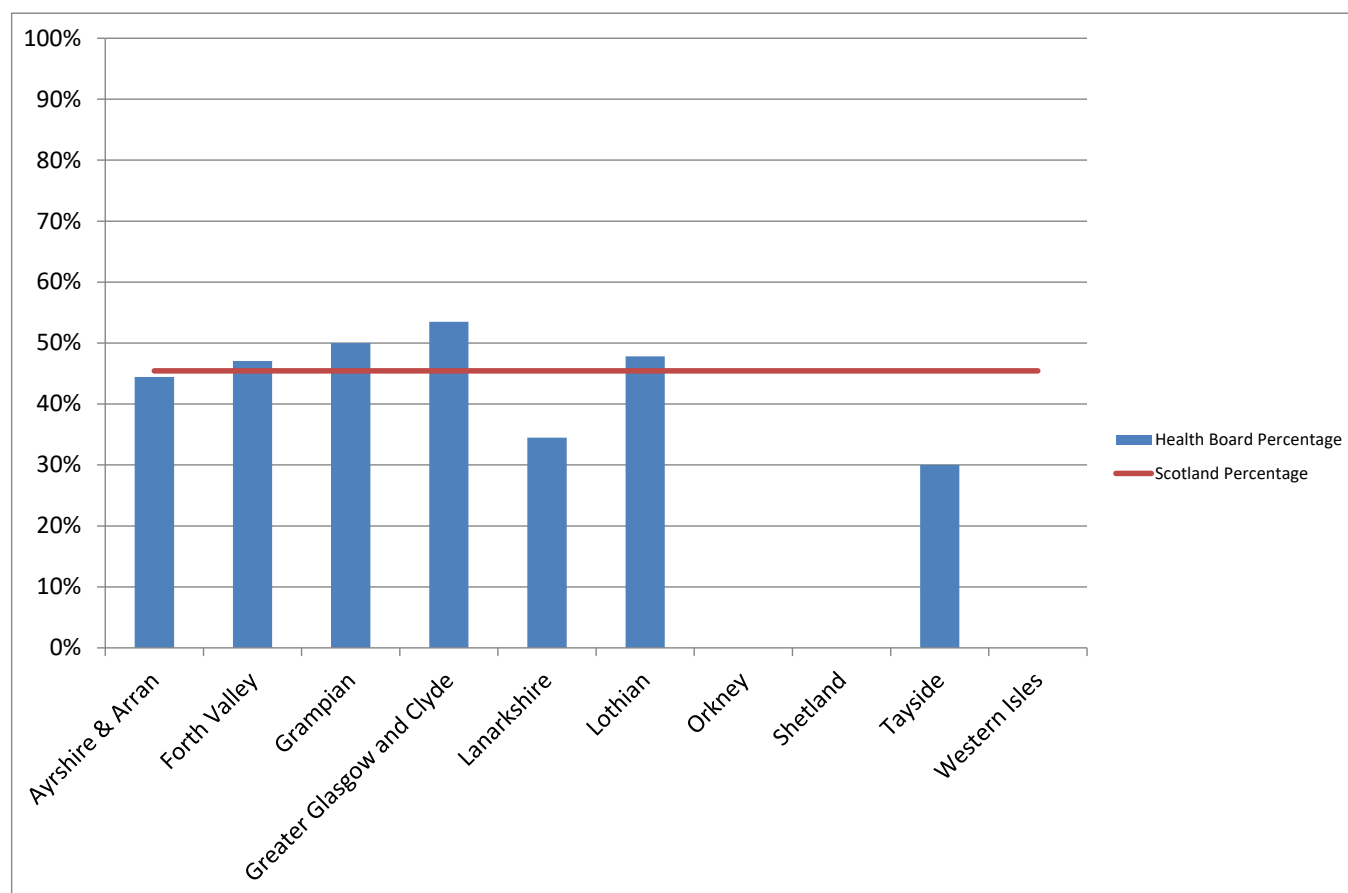
Numerator = number of people in each age/type cohort whose latest HbA<sub>1c</sub> was <58 mmol/mol.

Denominator = the total number of people (who had an anniversary HbA<sub>1c</sub>) in each age/type cohort.

### Notes

Where no data is shown in the bar-chart, this could indicate that no people were found that met the inclusion criteria or that none of those who did meet the inclusion criteria had an anniversary HbA<sub>1c</sub> <58 mmol/mol.

Small numbers of patients in some Paediatric age banding (especially the 0-5 years age group) have resulted in too few data points to allow meaningful analysis. Generally, these data have been aggregated with those of the 6-11 years age group. However, where this has not been possible, the data have been still been displayed for completeness, even though graphically little information is available. It is therefore important to refer to the tabulated data, rather than relying solely on the display of data within charts, as the reasons for omitting the data from the chart (e.g. in order to preserve patient anonymity) will be indicated here.

**Figure 18 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

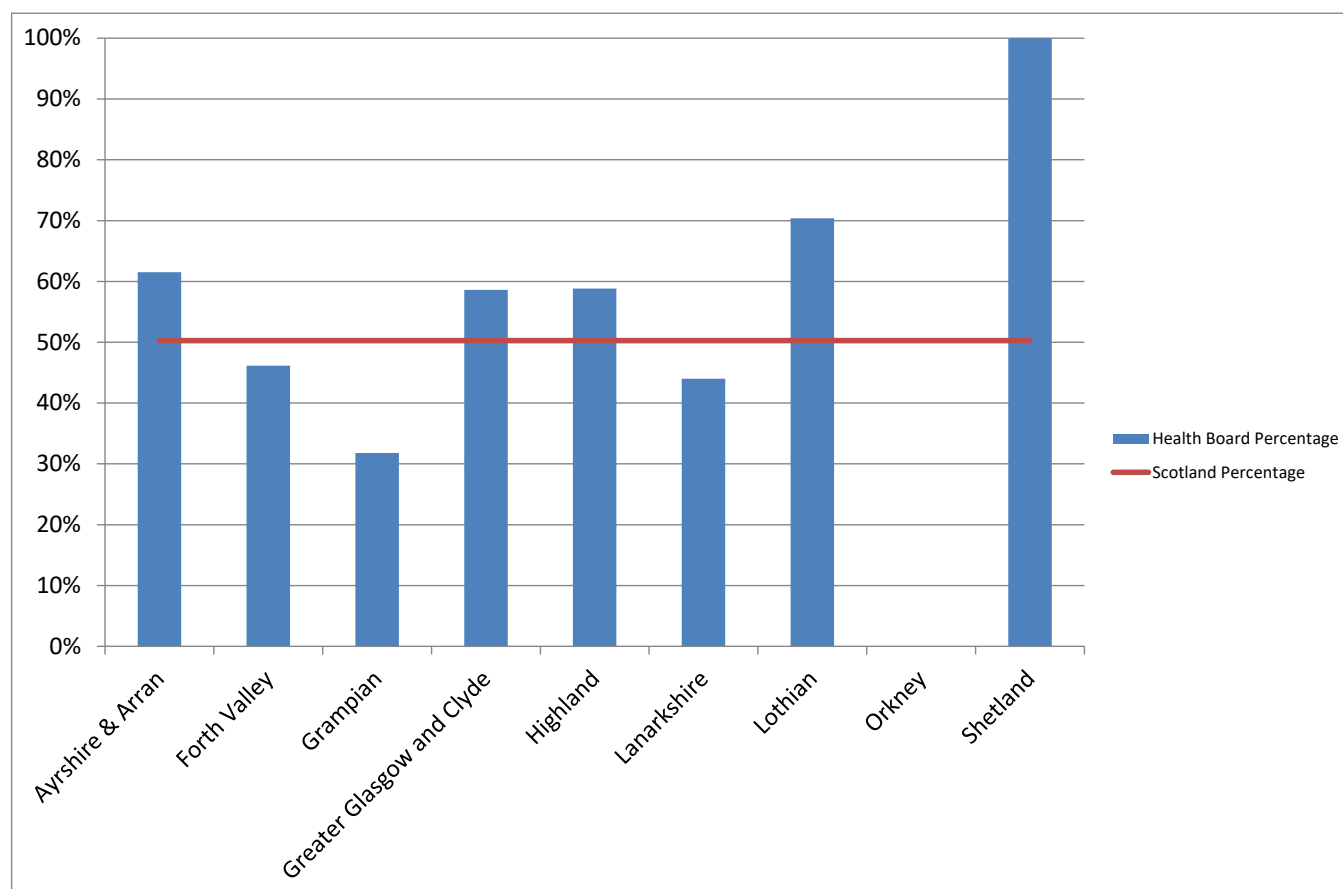
Note: Bars for boards with hidden data aren't shown.

**Table 32 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 0-11 (n)
	n	%	
Ayrshire & Arran	8	44.4	18
Borders	*	*	*
Dumfries & Galloway	*	*	*
Fife	*	*	12
Forth Valley	8	47.1	17
Grampian	10	50.0	20
Greater Glasgow and Clyde	23	53.5	43
Highland	*	*	7
Lanarkshire	10	34.5	29
Lothian	11	47.8	23
Orkney	0	0.0	0
Shetland	0	0.0	0
Tayside	6	30.0	20
Western Isles	0	0.0	0
<b>Scotland</b>	<b>90</b>	<b>45.5</b>	<b>198</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 19 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 12-17 by NHS board, Scotland 2019.**



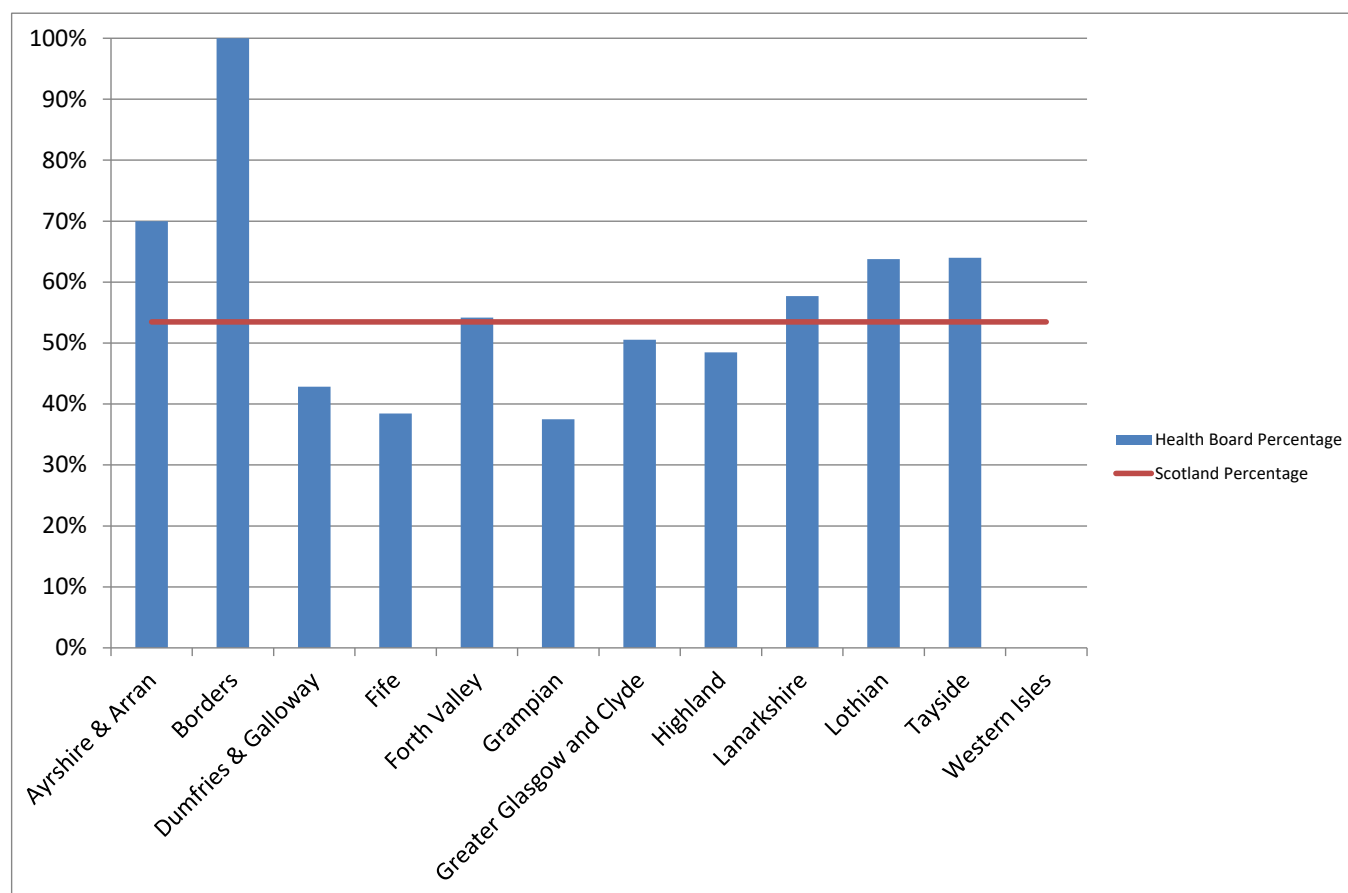
Note: Bars for boards with hidden data aren't shown.

**Table 33 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 12-17 (n)
	n	%	
Ayrshire & Arran	8	61.5	13
Borders	*	*	*
Dumfries & Galloway	*	*	*
Fife	*	*	14
Forth Valley	6	46.2	13
Grampian	7	31.8	22
Greater Glasgow and Clyde	17	58.6	29
Highland	10	58.8	17
Lanarkshire	11	44.0	25
Lothian	19	70.4	27
Orkney	0	0.0	0
Shetland	*	100.0	*
Tayside	*	*	9
Western Isles	*	*	*
<b>Scotland</b>	<b>91</b>	<b>50.3</b>	<b>181</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.



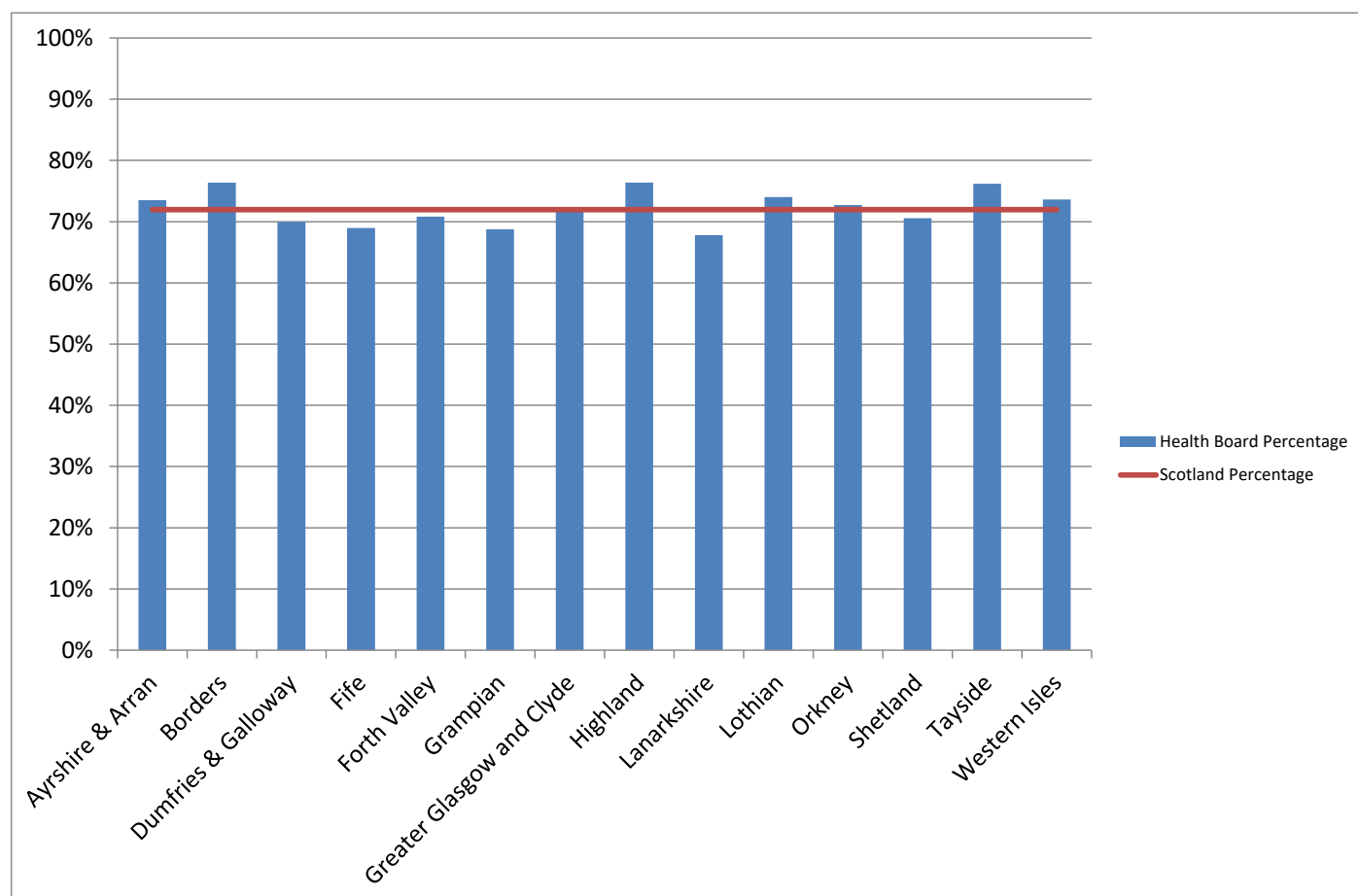
**Figure 20 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 34 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	n	%	
Ayrshire & Arran	14	70.0	20
Borders	7	100.0	7
Dumfries & Galloway	6	42.9	14
Fife	10	38.5	26
Forth Valley	13	54.2	24
Grampian	18	37.5	48
Greater Glasgow and Clyde	47	50.5	93
Highland	16	48.5	33
Lanarkshire	30	57.7	52
Lothian	44	63.8	69
Orkney	*	*	*
Shetland	*	*	*
Tayside	16	64.0	25
Western Isles	0	0.0	*
<b>Scotland</b>	<b>223</b>	<b>53.5</b>	<b>417</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 21 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 2 and other age 18+ by NHS board, Scotland 2019.****Table 35 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+
	n	%	
Ayrshire & Arran	575	73.5	782
Borders	181	76.4	237
Dumfries & Galloway	235	69.9	336
Fife	478	69.0	693
Forth Valley	405	70.8	572
Grampian	757	68.8	1,101
Greater Glasgow and Clyde	1,574	72.1	2,183
Highland	588	76.4	770
Lanarkshire	939	67.8	1,385
Lothian	1,162	74.0	1,570
Orkney	24	72.7	33
Shetland	24	70.6	34
Tayside	650	76.2	853
Western Isles	53	73.6	72
<b>Scotland</b>	<b>7,645</b>	<b>72.0</b>	<b>10,621</b>

## Measure 3: HbA<sub>1c</sub> Control

Percentage of people with diabetes with good and poor control (HbA<sub>1c</sub> <58 mmol/mol and >75 mmol/mol) - presented in defined age ranges.

### Methodology

Included population = all people of any age with diabetes are included.

Numerator 1 = people in each age/type cohort whose latest HbA<sub>1c</sub> in the prior 15 months was <58 mmol/mol or >75 mmol/mol

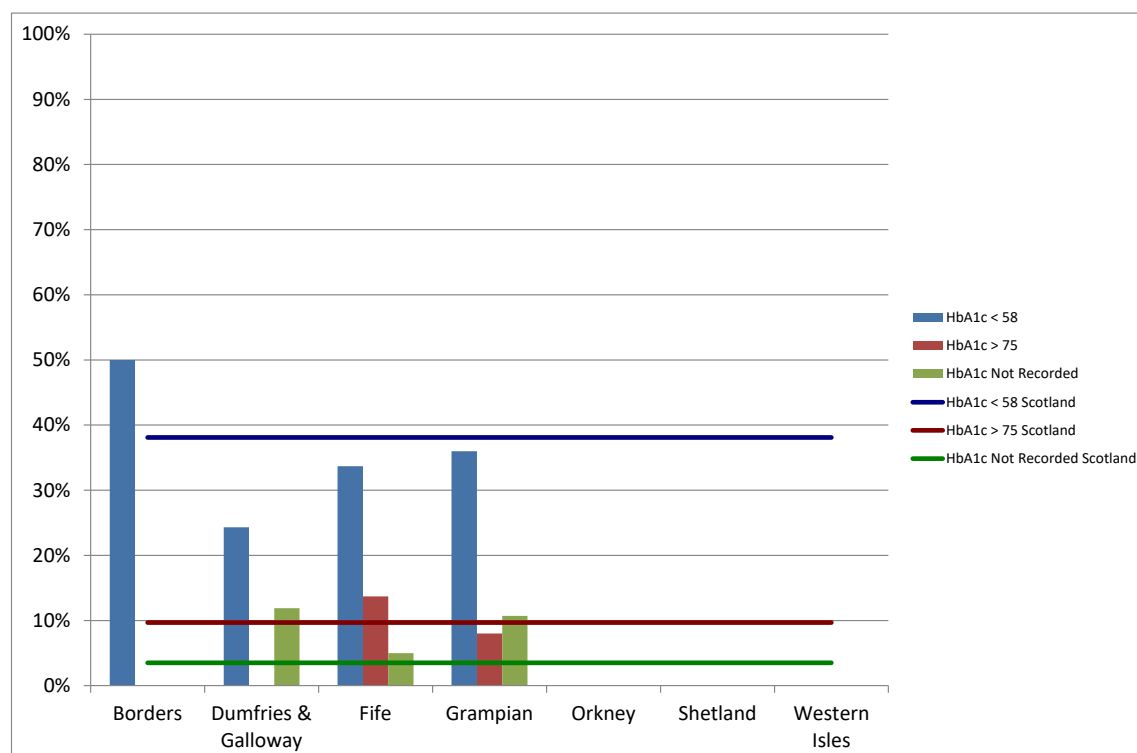
Denominator 1 = the number of tested people in each age/type cohort – those with an HbA<sub>1c</sub> result in the prior 15 months.

Numerator 2 = “Not Recorded” people – those who have no HbA<sub>1c</sub> recorded in the prior 15 months

Denominator 2 = the total number of people in each age/type cohort (both tested and untested).

### Notes

Where no data is shown in the bar-chart, this could indicate that no people were found in that age-range or that the latest HbA<sub>1c</sub> of those who were found was neither <58 nor >75 (i.e. was in the 58-75 range).

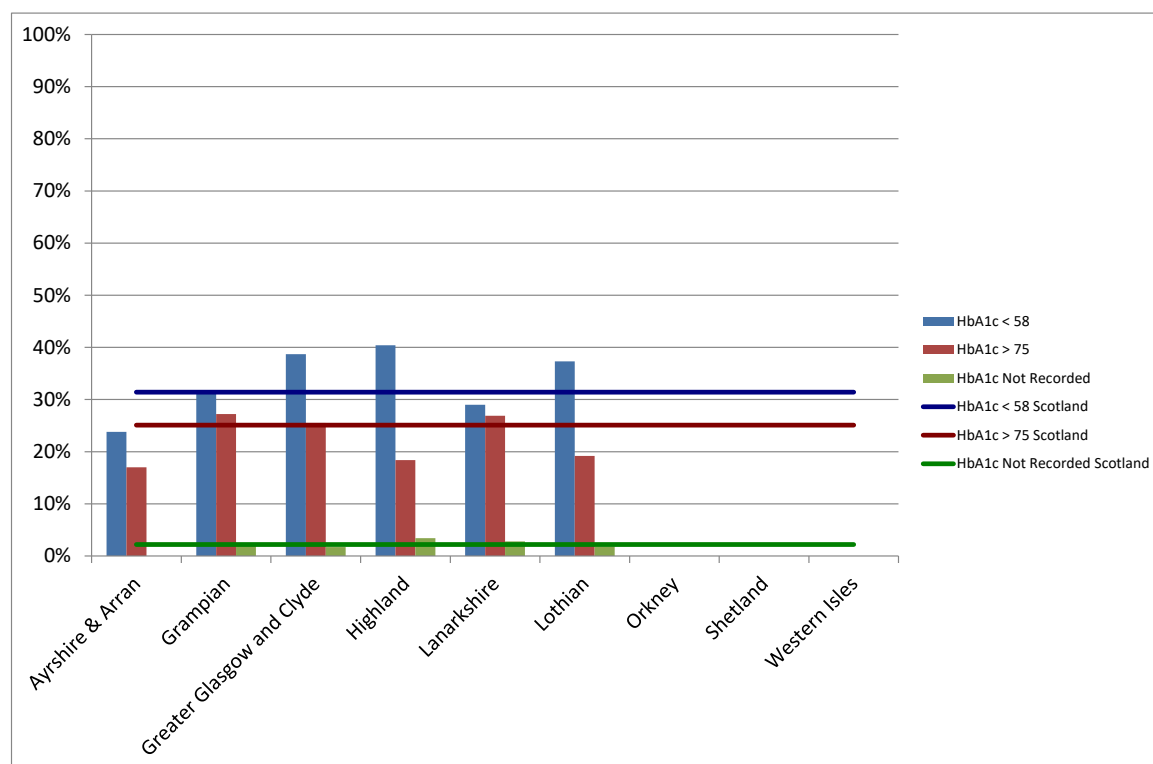
**Figure 22 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown, additionally, some bars are zero.

**Table 36 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 0-11 by NHS board, Scotland 2019.**

NHS board	HbA <sub>1c</sub> < 5.8 mmol/mol		HbA <sub>1c</sub> > 7.5 mmol/mol		Recorded people (n)	HbA <sub>1c</sub> Not Recorded		All aged 0-11 (n)
	People (n)	%	People (n)	%		People (n)	%	
Ayrshire & Arran	*	*	*	*	*	*	*	95
Borders	11	50.0	0	0.0	22	0	0.0	22
Dumfries & Galloway	9	24.3	*	*	37	5	11.9	42
Fife	32	33.7	13	13.7	95	5	5.0	100
Forth Valley	*	*	*	*	*	*	*	90
Grampian	45	36.0	10	8.0	125	15	10.7	140
Greater Glasgow and Clyde	*	*	*	*	*	*	*	247
Highland	*	*	*	*	*	*	*	73
Lanarkshire	*	*	*	*	*	*	*	181
Lothian	*	*	*	*	*	*	*	152
Orkney	*	*	*	*	*	0	0.0	*
Shetland	*	*	0	0.0	*	*	*	*
Tayside	*	*	*	*	*	*	*	73
Western Isles	*	*	*	*	9	0	0.0	9
<b>Scotland</b>	<b>453</b>	<b>38.1</b>	<b>116</b>	<b>9.7</b>	<b>1,190</b>	<b>43</b>	<b>3.5</b>	<b>1,233</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. In a number of cases, low (but non-zero) numbers of not recorded people caused figures to be concealed.

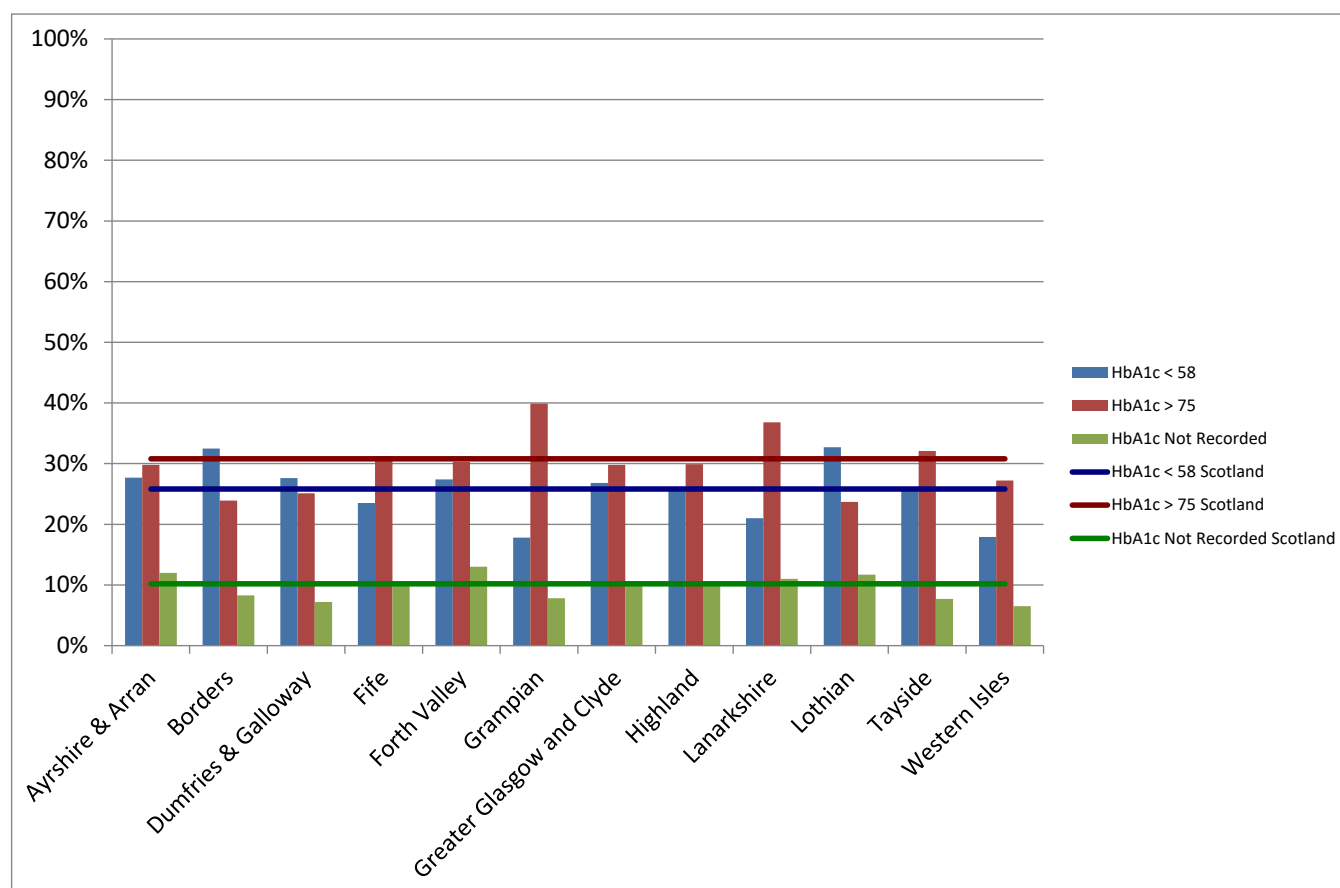
**Figure 23 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 37 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

NHS board	HbA <sub>1c</sub> < 58 mmol/mol		HbA <sub>1c</sub> > 75 mmol/mol		Recorded people (n)	HbA <sub>1c</sub> Not Recorded		All aged 12-17 (n)
	People (n)	%	People (n)	%		People (n)	%	
Ayrshire & Arran	35	23.8	25	17.0	147	0	0.0	147
Borders	*	*	*	*	*	*	*	45
Dumfries & Galloway	*	*	*	*	*	*	*	57
Fife	*	*	*	*	*	*	*	128
Forth Valley	*	*	*	*	*	*	*	119
Grampian	69	31.8	59	27.2	217	5	2.3	222
Greater Glasgow and Clyde	138	38.7	91	25.5	357	6	1.7	363
Highland	57	40.4	26	18.4	141	5	3.4	146
Lanarkshire	81	29.0	75	26.9	279	8	2.8	287
Lothian	101	37.3	52	19.2	271	5	1.8	276
Orkney	0	0.0	*	*	*	0	0.0	*
Shetland	*	*	*	*	*	0	0.0	*
Tayside	*	*	*	*	*	*	*	132
Western Isles	*	*	*	*	13	0	0.0	13
<b>Scotland</b>	<b>599</b>	<b>31.4</b>	<b>480</b>	<b>25.1</b>	<b>1,909</b>	<b>43</b>	<b>2.2</b>	<b>1,952</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. In a number of cases, low (but non-zero) numbers of not recorded people caused figures to be concealed.

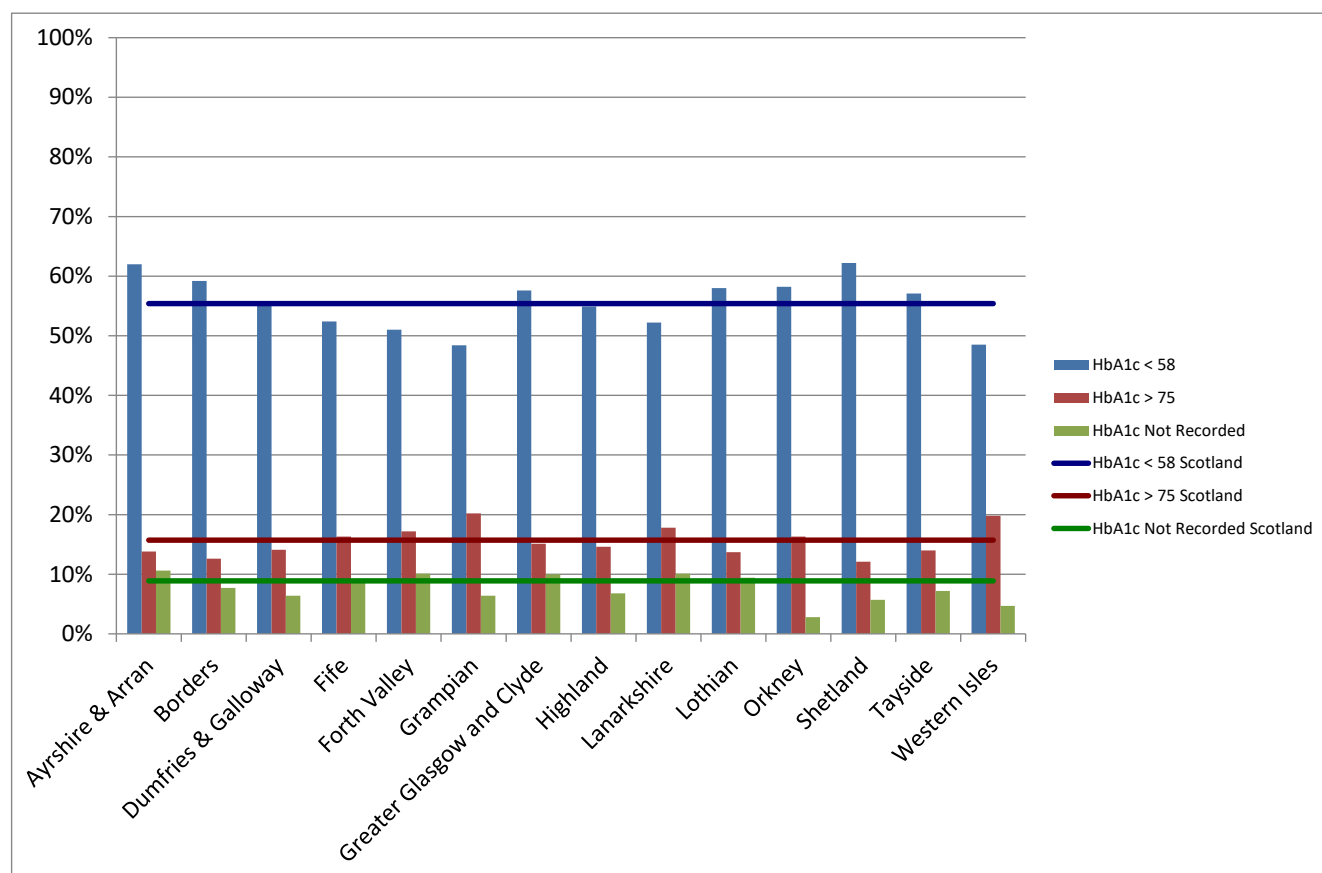
**Figure 24 Measure 3: HbA<sub>1c</sub> control - Type 1 age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 38 Measure 3: HbA<sub>1c</sub> control - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	HbA <sub>1c</sub> < 58 mmol/mol		HbA <sub>1c</sub> > 75 mmol/mol		Recorded people (n)	HbA <sub>1c</sub> Not Recorded		All aged 18+ (n)
	People (n)	%	People (n)	%		People (n)	%	
Ayrshire & Arran	528	27.7	568	29.8	1,903	259	12.0	2,162
Borders	201	32.5	148	23.9	619	56	8.3	675
Dumfries & Galloway	236	27.6	215	25.1	855	66	7.2	921
Fife	436	23.5	579	31.2	1,853	201	9.8	2,054
Forth Valley	422	27.4	467	30.3	1,539	230	13.0	1,769
Grampian	538	17.8	1,203	39.9	3,017	255	7.8	3,272
Greater Glasgow and Clyde	1,471	26.8	1,634	29.8	5,484	651	10.6	6,135
Highland	459	25.5	538	29.9	1,801	198	9.9	1,999
Lanarkshire	765	21.0	1,342	36.8	3,646	450	11.0	4,096
Lothian	1,365	32.7	990	23.7	4,178	556	11.7	4,734
Orkney	*	*	*	*	*	*	*	116
Shetland	*	*	*	*	*	*	*	136
Tayside	504	26.0	622	32.1	1,939	162	7.7	2,101
Western Isles	31	17.9	47	27.2	173	12	6.5	185
<b>Scotland</b>	<b>7,036</b>	<b>25.8</b>	<b>8,408</b>	<b>30.8</b>	<b>27,255</b>	<b>3,100</b>	<b>10.2</b>	<b>30,355</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 25 Measure 3: HbA<sub>1c</sub> control - Type 2 and other age 18+ by NHS board, Scotland 2019.****Table 39 Measure 3: HbA<sub>1c</sub> control - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	HbA <sub>1c</sub> < 58 mmol/mol		HbA <sub>1c</sub> > 75 mmol/mol		Recorded people (n)	HbA <sub>1c</sub> Not Recorded		All aged 18+ (n)
	People (n)	%	People (n)	%		People (n)	%	
Ayrshire & Arran	12,524	62.0	2,799	13.8	20,216	2,395	10.6	22,611
Borders	3,432	59.2	733	12.6	5,801	484	7.7	6,285
Dumfries & Galloway	4,590	55.6	1,166	14.1	8,254	567	6.4	8,821
Fife	9,787	52.4	3,034	16.3	18,669	1,893	9.2	20,562
Forth Valley	7,444	51.0	2,507	17.2	14,604	1,632	10.1	16,236
Grampian	12,070	48.4	5,038	20.2	24,922	1,694	6.4	26,616
Greater Glasgow and Clyde	30,846	57.6	8,113	15.1	53,592	5,981	10.0	59,573
Highland	8,448	54.9	2,254	14.6	15,402	1,126	6.8	16,528
Lanarkshire	17,465	52.2	5,973	17.8	33,480	3,768	10.1	37,248
Lothian	20,424	58.0	4,827	13.7	35,203	3,638	9.4	38,841
Orkney	636	58.2	178	16.3	1,092	31	2.8	1,123
Shetland	598	62.2	116	12.1	962	58	5.7	1,020
Tayside	11,594	57.1	2,852	14.0	20,316	1,570	7.2	21,886
Western Isles	631	48.5	258	19.8	1,301	64	4.7	1,365
<b>Scotland</b>	<b>140,489</b>	<b>55.4</b>	<b>39,848</b>	<b>15.7</b>	<b>253,814</b>	<b>24,901</b>	<b>8.9</b>	<b>278,715</b>

## Measure 4: Current Smokers

Percentage of people with diabetes who have a smoking status of “Current Smoker” recorded in the prior 15 months - presented in defined age ranges.

### Methodology

Included population = people aged 12 or over with diabetes are included.

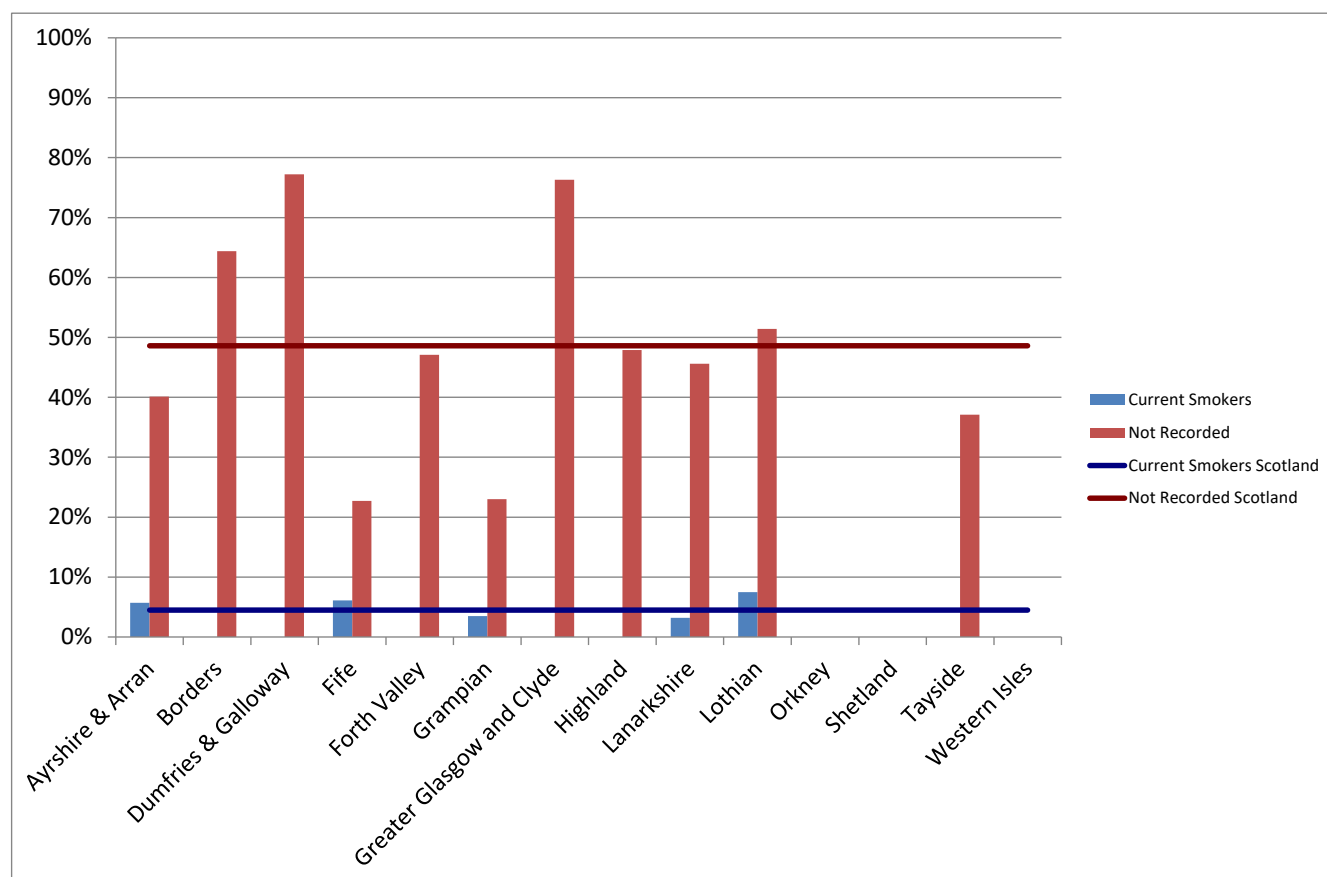
Numerator = people in each age/type cohort whose latest smoking status in the prior 15 months was “Current Smoker”

Denominator = the total number of people in each age/type cohort who had a smoking status recorded in the prior 15 months.

### Notes

Where no data is shown in the bar-chart, this could indicate that no people were found in that age-range or that no people in that age-range were recorded as “Current Smokers” in the prior 15 months.



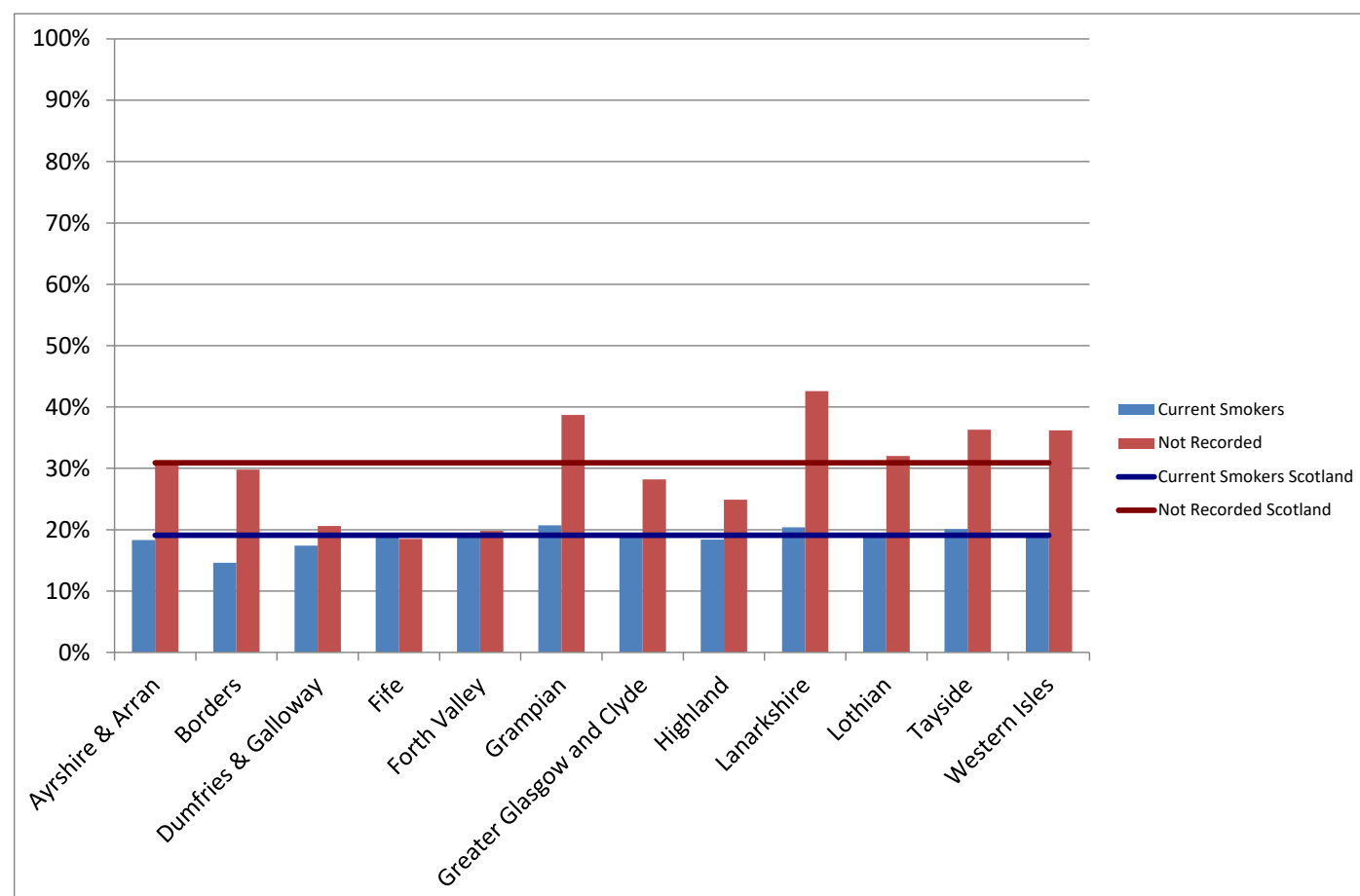
**Figure 26 Measure 4: Current smokers - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown, additionally some bars are zero.

**Table 40 Measure 4: Current smokers - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

NHS board	Current Smoker		Recorded people (n)	Not Recorded		All aged 12-17 (n)
	People (n)	%		People (n)	%	
Ayrshire & Arran	5	5.7	88	59	40.1	147
Borders	0	0.0	16	29	64.4	45
Dumfries & Galloway	*	*	13	44	77.2	57
Fife	6	6.1	99	29	22.7	128
Forth Valley	*	*	63	56	47.1	119
Grampian	6	3.5	171	51	23.0	222
Greater Glasgow and Clyde	*	*	86	277	76.3	363
Highland	*	*	76	70	47.9	146
Lanarkshire	5	3.2	156	131	45.6	287
Lothian	10	7.5	134	142	51.4	276
Orkney	*	*	*	0	0.0	*
Shetland	0	0.0	*	*	*	*
Tayside	*	*	83	49	37.1	132
Western Isles	0	0.0	*	*	*	13
<b>Scotland</b>	<b>45</b>	<b>4.5</b>	<b>1,004</b>	<b>948</b>	<b>48.6</b>	<b>1,952</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 27 Measure 4: Current smokers - Type 1 age 18+ by NHS board, Scotland 2019.**

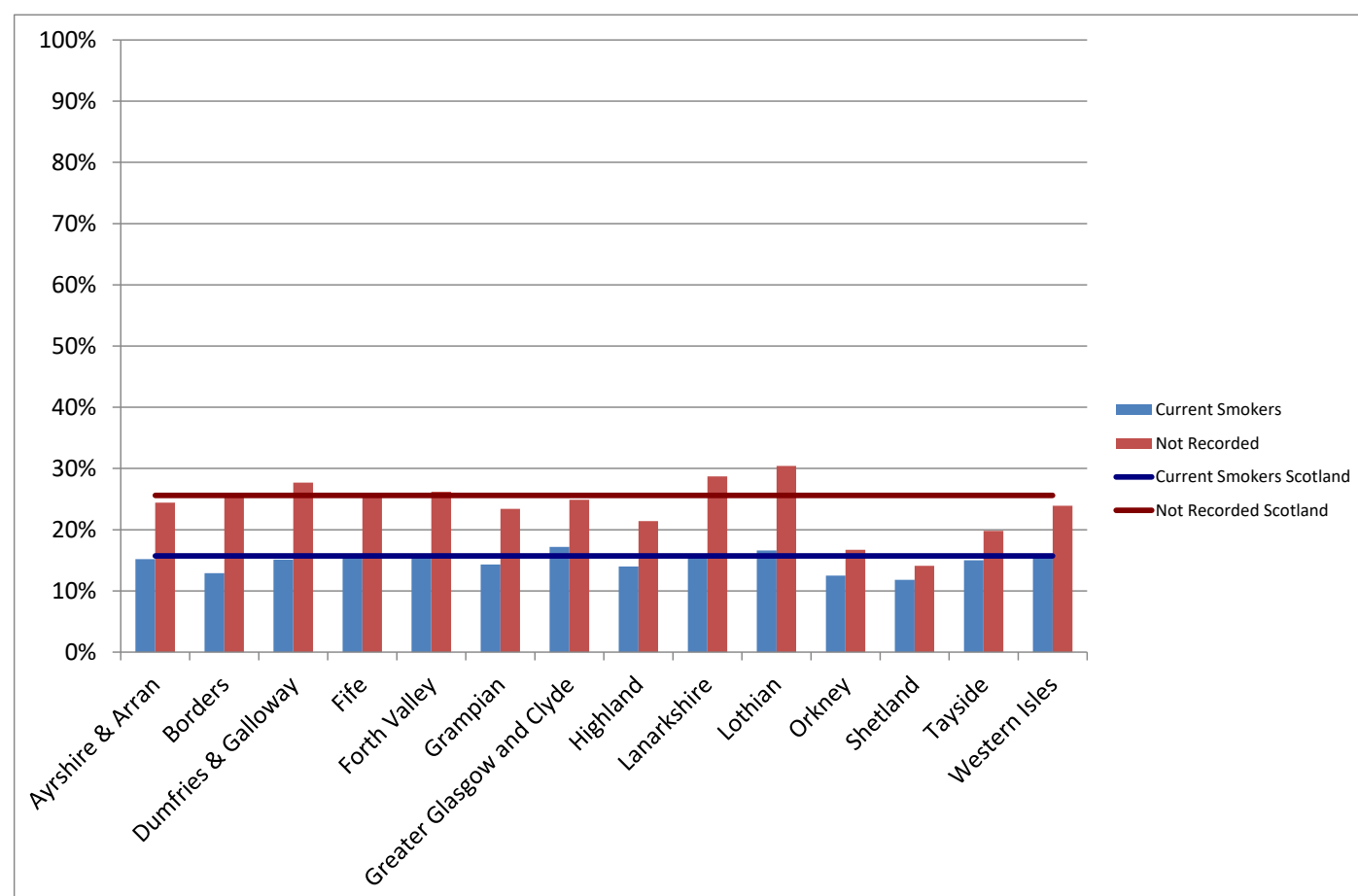
Note: Bars for boards with hidden data aren't shown.

**Table 41 Measure 4: Current smokers - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Current Smoker		Recorded people (n)	Not Recorded		All aged 18+ (n)
	People (n)	%		People (n)	%	
Ayrshire & Arran	273	18.3	1,490	672	31.1	2,162
Borders	69	14.6	474	201	29.8	675
Dumfries & Galloway	127	17.4	731	190	20.6	921
Fife	317	18.9	1,675	379	18.5	2,054
Forth Valley	271	19.1	1,418	351	19.8	1,769
Grampian	416	20.7	2,005	1,267	38.7	3,272
Greater Glasgow and Clyde	830	18.8	4,406	1,729	28.2	6,135
Highland	277	18.4	1,502	497	24.9	1,999
Lanarkshire	480	20.4	2,353	1,743	42.6	4,096
Lothian	611	19.0	3,218	1,516	32.0	4,734
Orkney	*	*	*	*	*	116
Shetland	*	*	*	*	*	136
Tayside	269	20.1	1,338	763	36.3	2,101
Western Isles	23	19.5	118	67	36.2	185
<b>Scotland</b>	<b>4,005</b>	<b>19.1</b>	<b>20,964</b>	<b>9,391</b>	<b>30.9</b>	<b>30,355</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 28 Measure 4: Current smokers - Type 2 and other age 18+ by NHS board, Scotland 2019.**



**Table 42 Measure 4: Current smokers - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Current Smoker		Recorded people (n)	Not Recorded		All aged 18+ (n)
	People (n)	%		People (n)	%	
Ayrshire & Arran	2,599	15.2	17,099	5,512	24.4	22,611
Borders	599	12.9	4,654	1,631	26.0	6,285
Dumfries & Galloway	966	15.1	6,379	2,442	27.7	8,821
Fife	2,378	15.6	15,212	5,350	26.0	20,562
Forth Valley	1,848	15.4	11,984	4,252	26.2	16,236
Grampian	2,916	14.3	20,398	6,218	23.4	26,616
Greater Glasgow and Clyde	7,704	17.2	44,729	14,844	24.9	59,573
Highland	1,819	14.0	12,999	3,529	21.4	16,528
Lanarkshire	4,233	15.9	26,541	10,707	28.7	37,248
Lothian	4,481	16.6	27,047	11,794	30.4	38,841
Orkney	117	12.5	936	187	16.7	1,123
Shetland	103	11.8	876	144	14.1	1,020
Tayside	2,630	15.0	17,549	4,337	19.8	21,886
Western Isles	160	15.4	1,039	326	23.9	1,365
<b>Scotland</b>	<b>32,553</b>	<b>15.7</b>	<b>207,442</b>	<b>71,273</b>	<b>25.6</b>	<b>278,715</b>

## Measure 5: Cholesterol and Blood Pressure

Percentage of people with diabetes aged 50 to 69 with a total cholesterol <5mmol/l AND a systolic blood pressure <140 mmHg in the prior 15 months

### Methodology

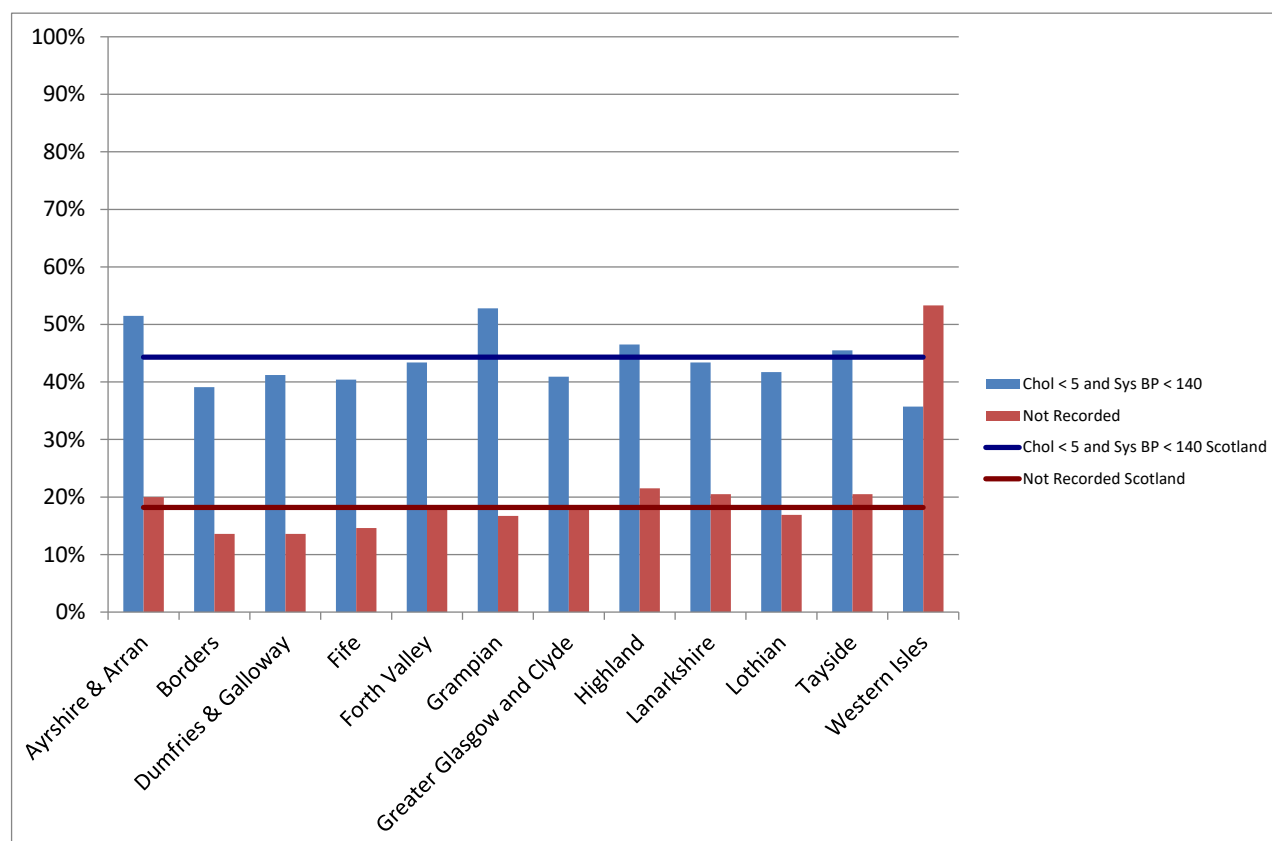
Included population = all people with diabetes aged  $\geq 50$  and  $< 70$  years are included.

Numerator 1 = the number of people with diabetes aged 50-69 years whose latest cholesterol was <5mmol/L AND whose latest SBP was <140 mmHg.

Denominator 1 = the total number of people with diabetes aged 50-69 years who had both a cholesterol value and an SBP result recorded in the prior 15 months.

Numerator 2 = “Not Recorded” - the number of people with diabetes aged 50-69 years who did NOT have both a cholesterol AND an SBP result recorded in the prior 15 months.

Denominator 2 = the total cohort of people with diabetes aged 50-69 years.

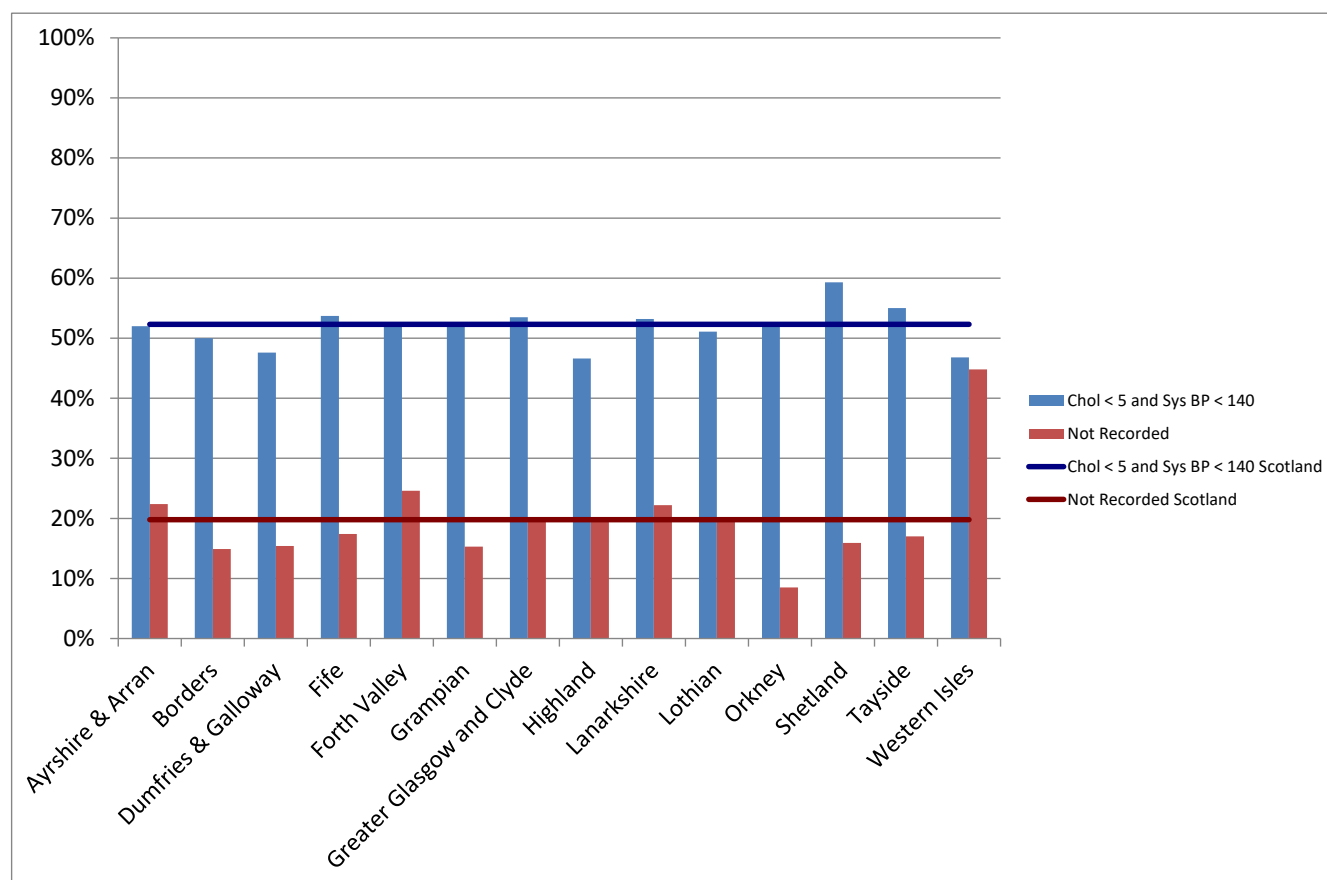
**Figure 29 Measure 5: Cholesterol and blood pressure - Type 1 age 50-69 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 43 Measure 5: Cholesterol and blood pressure - Type 1 age 50-69 by NHS board, Scotland 2019.**

NHS board	Cholesterol < 5 mmol / L and Systolic BP < 140 mmHg		Recorded people (n)	Not Recorded		All aged 50-69 (n)
	People (n)	%		People (n)	%	
Ayrshire & Arran	321	51.5	623	156	20.0	779
Borders	97	39.1	248	39	13.6	287
Dumfries & Galloway	139	41.2	337	53	13.6	390
Fife	258	40.4	639	109	14.6	748
Forth Valley	209	43.4	482	108	18.3	590
Grampian	511	52.8	967	194	16.7	1,161
Greater Glasgow and Clyde	643	40.9	1,573	345	18.0	1,918
Highland	279	46.5	600	164	21.5	764
Lanarkshire	499	43.4	1,151	296	20.5	1,447
Lothian	555	41.7	1,330	271	16.9	1,601
Orkney	*	*	*	*	*	50
Shetland	*	*	*	*	*	53
Tayside	276	45.5	607	157	20.5	764
Western Isles	10	35.7	28	32	53.3	60
<b>Scotland</b>	<b>3,849</b>	<b>44.3</b>	<b>8,681</b>	<b>1,931</b>	<b>18.2</b>	<b>10,612</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 30 Measure 5: Cholesterol and blood pressure - Type 2 and other age 50-69 by NHS board, Scotland 2019.****Table 44 Measure 5: Cholesterol and blood pressure - Type 2 and other age 50-69 by NHS board, Scotland 2019.**

NHS board	Cholesterol < 5 mmol / L and Systolic BP < 140 mmHg		Recorded people (n)	Not Recorded		All aged 50-69 (n)
	People (n)	%		People (n)	%	
Ayrshire & Arran	4,292	52.0	8,251	2,388	22.4	10,639
Borders	1,149	50.0	2,299	401	14.9	2,700
Dumfries & Galloway	1,572	47.6	3,301	603	15.4	3,904
Fife	4,172	53.7	7,772	1,639	17.4	9,411
Forth Valley	2,973	52.1	5,710	1,867	24.6	7,577
Grampian	5,290	52.5	10,069	1,824	15.3	11,893
Greater Glasgow and Clyde	12,607	53.5	23,564	5,960	20.2	29,524
Highland	2,775	46.6	5,958	1,495	20.1	7,453
Lanarkshire	7,502	53.2	14,097	4,031	22.2	18,128
Lothian	7,378	51.1	14,426	3,586	19.9	18,012
Orkney	235	52.2	450	42	8.5	492
Shetland	239	59.3	403	76	15.9	479
Tayside	4,384	55.0	7,973	1,630	17.0	9,603
Western Isles	155	46.8	331	269	44.8	600
<b>Scotland</b>	<b>54,723</b>	<b>52.3</b>	<b>104,604</b>	<b>25,811</b>	<b>19.8</b>	<b>130,415</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Measure 6: Foot Ulcers

Percentage of people with diabetes with prevalent (recorded at any time) and incident (recorded in the prior year) foot ulcers - presented in defined age ranges.

Foot Risk is not one of the applicable Processes of Care for those under 18 years of age, and consequently the associated table and figure for those with type 1 diabetes have been omitted.

### Methodology

Included population = all people of any age with diabetes are included.

Numerator 1 (Prevalent ulcers) = number of patients in each age/type cohort whose latest foot status records one or more active foot ulcer/s.

Numerator 2 (Incident ulcers) = number of patients in each age/type cohort who have had a new ulcer recorded in the last 12 months via any source

Denominator = the total number of people with diabetes in each age/type cohort.

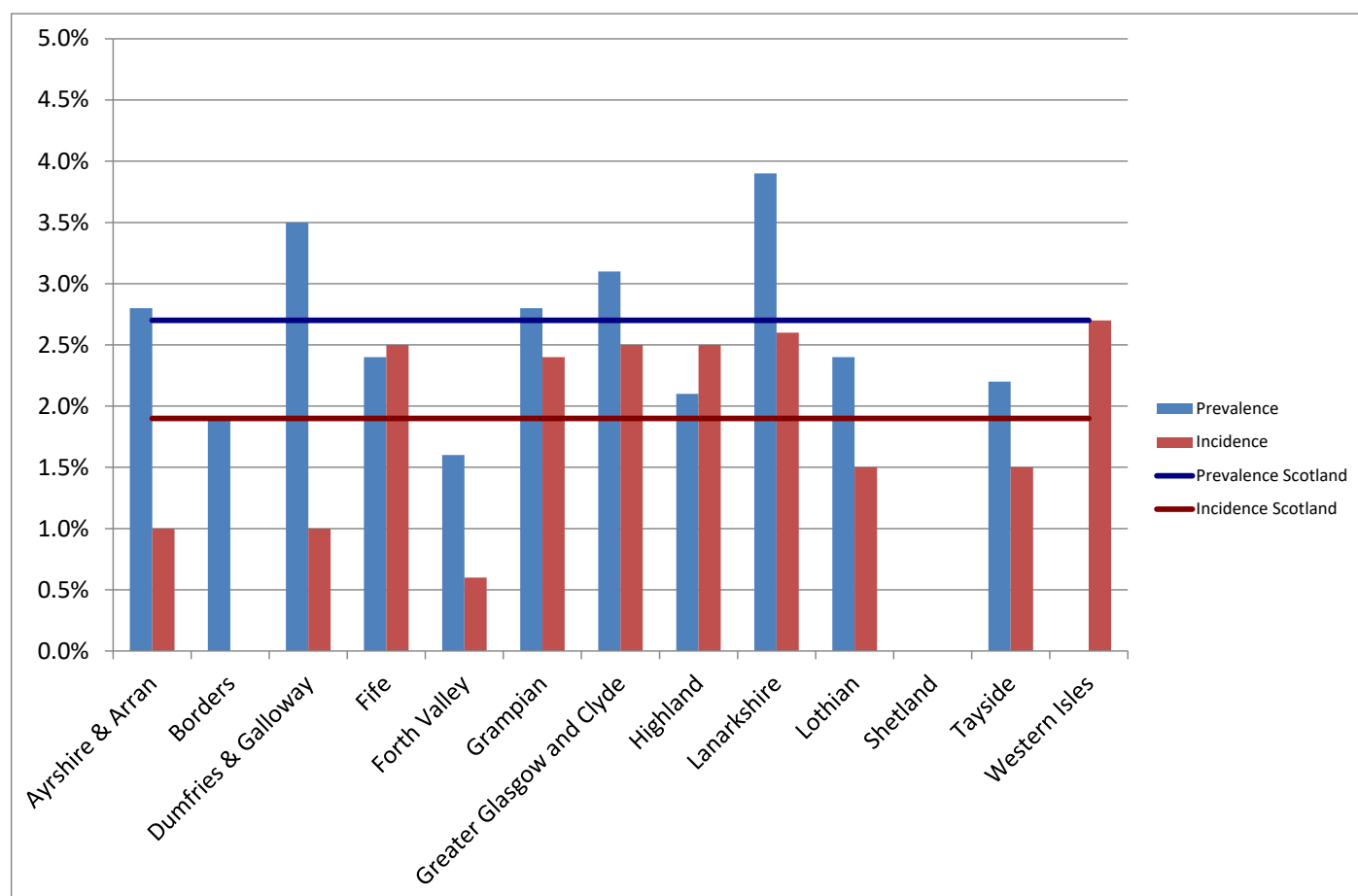
### Notes:

Incident ulcers in this report are all new ulcers that occurred in the prior 12 months even in patients with a previous history of foot ulceration. It is not where a person with totally "clean" feet develops a first ever foot ulcer.

Incident ulcers are determined by either of the following methods:

A sequence where an "Active Ulceration" record changes from "No" or "Not recorded" to "Yes" or "Yes Side Unspecified" at any time in the preceding 12 months.

A foot ulcer is recorded via the Ulcer Management screens with a Start Date at any time in the preceding 12 months.

**Figure 31 Measure 6: Foot ulcers - Type 1 age 18+ by NHS board, Scotland 2019.**

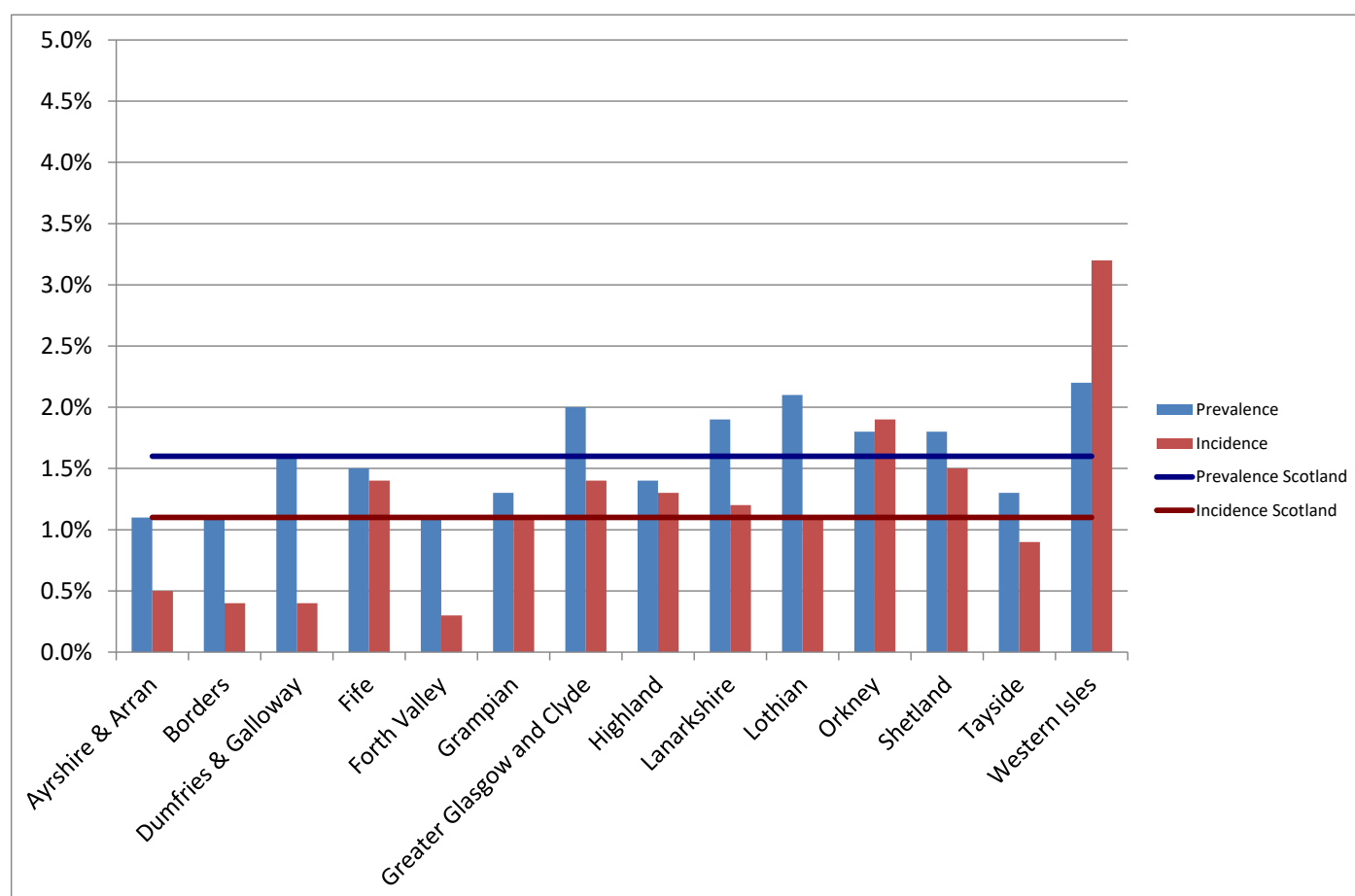
Note: Bars for boards with hidden data aren't shown.

**Table 45 Measure 6: Foot ulcers - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Prevalence		Incidence		All aged 18+ (n)
	People (n)	%	People (n)	%	
Ayrshire & Arran	61	2.8	22	1.0	2,162
Borders	13	1.9	*	*	675
Dumfries & Galloway	32	3.5	9	1.0	921
Fife	50	2.4	51	2.5	2,054
Forth Valley	28	1.6	10	0.6	1,769
Grampian	90	2.8	77	2.4	3,272
Greater Glasgow and Clyde	191	3.1	153	2.5	6,135
Highland	41	2.1	49	2.5	1,999
Lanarkshire	158	3.9	106	2.6	4,096
Lothian	114	2.4	73	1.5	4,734
Orkney	*	*	*	*	116
Shetland	0	0.0	0	0.0	136
Tayside	47	2.2	31	1.5	2,101
Western Isles	*	*	5	2.7	185
<b>Scotland</b>	<b>828</b>	<b>2.7</b>	<b>590</b>	<b>1.9</b>	<b>30,355</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.



**Figure 32 Measure 6: Foot ulcers - Type 2 and other age 18+ by NHS board, Scotland 2019.****Table 46 Measure 6: Foot ulcers - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Prevalence		Incidence		All aged 18+ (n)
	People (n)	%	People (n)	%	
Ayrshire & Arran	253	1.1	119	0.5	22,611
Borders	69	1.1	23	0.4	6,285
Dumfries & Galloway	138	1.6	39	0.4	8,821
Fife	309	1.5	294	1.4	20,562
Forth Valley	178	1.1	43	0.3	16,236
Grampian	337	1.3	288	1.1	26,616
Greater Glasgow and Clyde	1,220	2.0	850	1.4	59,573
Highland	226	1.4	218	1.3	16,528
Lanarkshire	695	1.9	437	1.2	37,248
Lothian	810	2.1	440	1.1	38,841
Orkney	20	1.8	21	1.9	1,123
Shetland	18	1.8	15	1.5	1,020
Tayside	294	1.3	191	0.9	21,886
Western Isles	30	2.2	43	3.2	1,365
<b>Scotland</b>	<b>4,597</b>	<b>1.6</b>	<b>3,021</b>	<b>1.1</b>	<b>278,715</b>

## Measure 7: Retinopathy Screening

Percentage of people with diabetes eligible for diabetic retinopathy screening (DRS) who were screened within last 15 months - presented in defined age ranges.

### Methodology

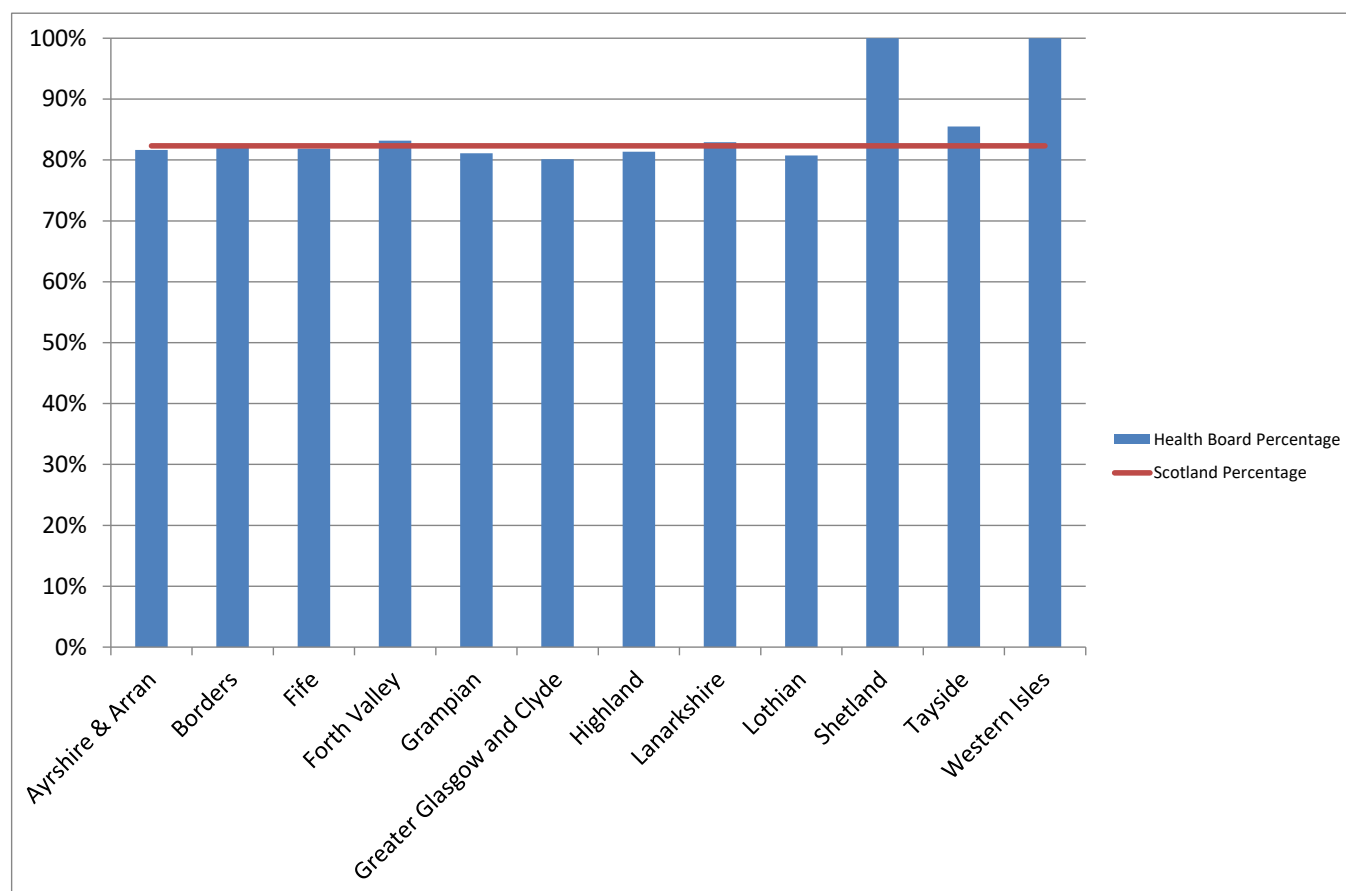
Included population = all people with diabetes aged 12 or over who have not been suspended from eye-screening. Those flagged as “Temporarily Unavailable” are still considered eligible and included in denominator.

Numerator = number of eligible people with diabetes in each age/type cohort who had a DRS screening attendance recorded in the prior 15 months

Denominator = the total number of DRS eligible people with diabetes in each age/type cohort

### Notes

DRS attendance = "Attended - Successfully Screened" or "Attended - Unsuccessfully Screened". Both are considered actual screenings.

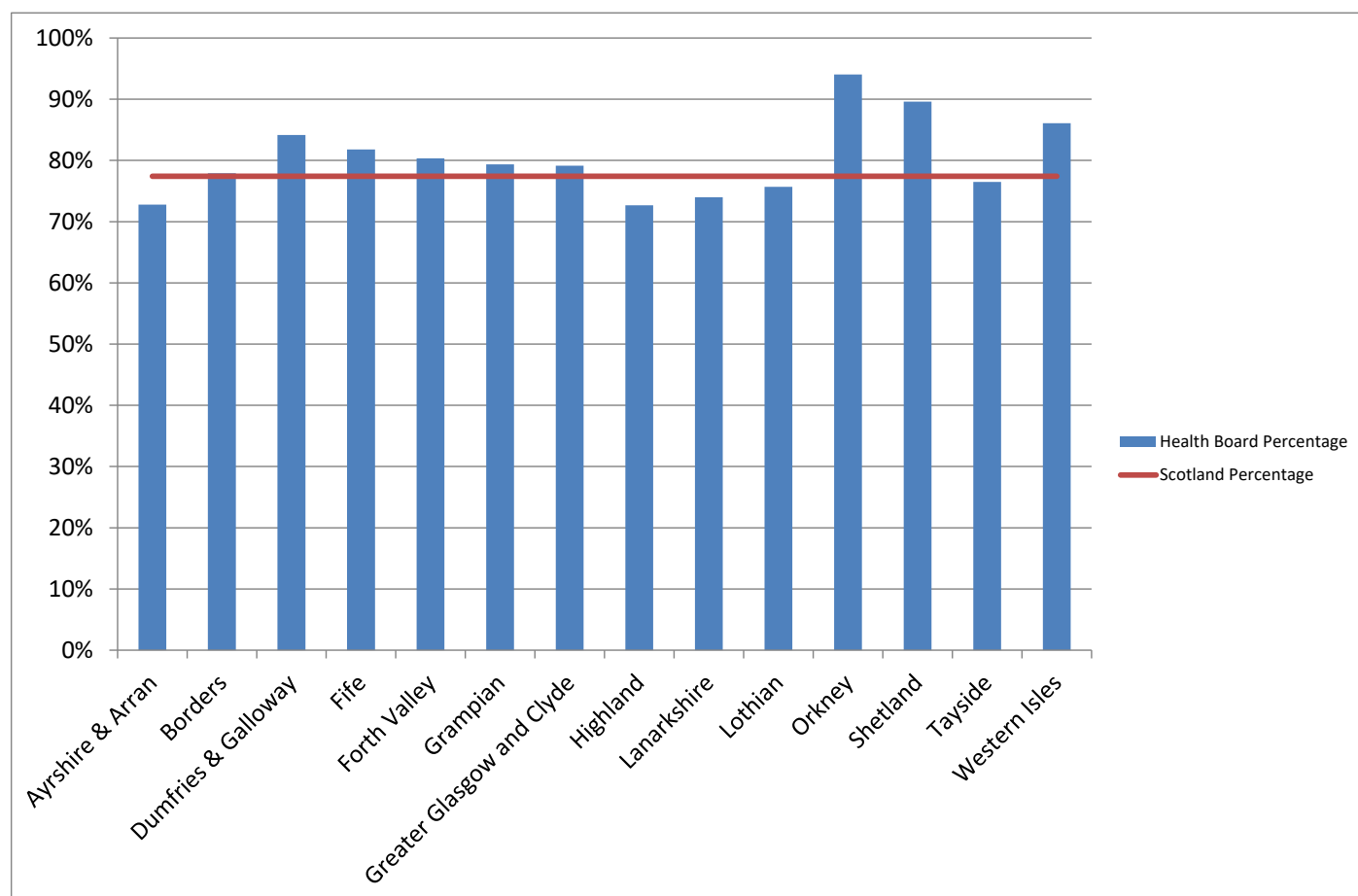
**Figure 33 Measure 7: Retinopathy screening - Type 1 and other age 12-17 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

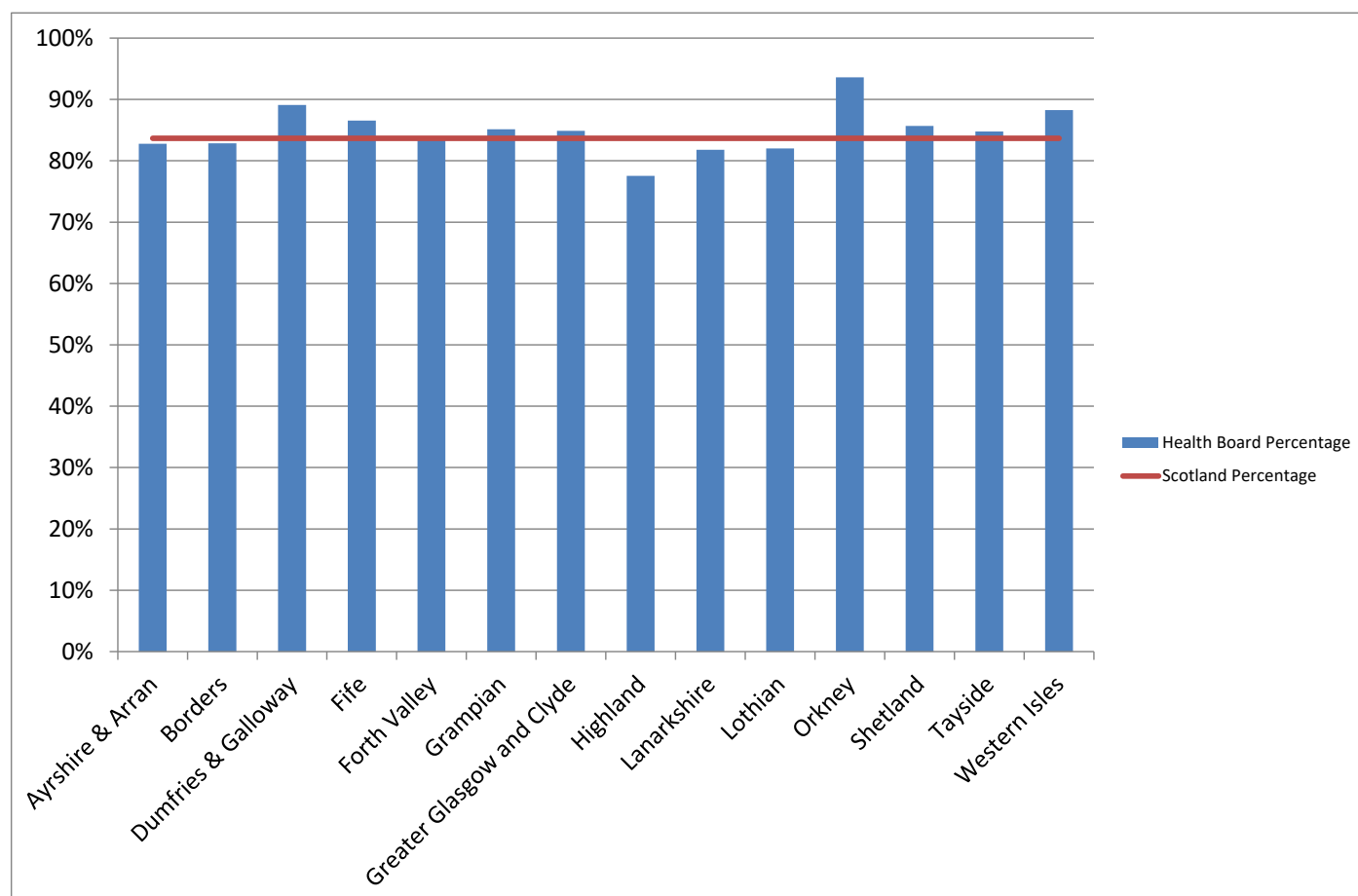
**Table 47 Measure 7: Retinopathy screening – Type 1 and other age 12-17 by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 12-17 (n)
	People (n)	%	
Ayrshire & Arran	120	81.6	147
Borders	37	82.2	45
Dumfries & Galloway	*	*	57
Fife	104	81.9	127
Forth Valley	99	83.2	119
Grampian	176	81.1	217
Greater Glasgow and Clyde	290	80.1	362
Highland	118	81.4	145
Lanarkshire	233	82.9	281
Lothian	222	80.7	275
Orkney	*	*	*
Shetland	*	100.0	*
Tayside	112	85.5	131
Western Isles	13	100.0	13
<b>Scotland</b>	<b>1,594</b>	<b>82.3</b>	<b>1,936</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 34 Measure 7: Retinopathy screening - Type 1 age 18+ by NHS board, Scotland 2019.****Table 48 Measure 7: Retinopathy screening - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	1,286	72.8	1,767
Borders	430	77.9	552
Dumfries & Galloway	584	84.1	694
Fife	1,556	81.8	1,902
Forth Valley	1,263	80.3	1,572
Grampian	2,283	79.4	2,877
Greater Glasgow and Clyde	4,072	79.1	5,145
Highland	1,309	72.7	1,801
Lanarkshire	2,605	74.0	3,521
Lothian	3,026	75.7	3,998
Orkney	95	94.1	101
Shetland	112	89.6	125
Tayside	1,247	76.5	1,630
Western Isles	136	86.1	158
<b>Scotland</b>	<b>20,004</b>	<b>77.4</b>	<b>25,843</b>

**Figure 35 Measure 7: Retinopathy screening - Type 2 and other age 18+ by NHS board, Scotland 2019.****Table 49 Measure 7: Retinopathy screening - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	17,445	82.8	21,074
Borders	4,871	82.9	5,878
Dumfries & Galloway	7,072	89.1	7,938
Fife	17,196	86.5	19,869
Forth Valley	13,137	83.8	15,673
Grampian	21,454	85.1	25,204
Greater Glasgow and Clyde	47,623	84.9	56,108
Highland	12,268	77.5	15,820
Lanarkshire	28,627	81.8	34,994
Lothian	29,926	82.0	36,491
Orkney	965	93.6	1,031
Shetland	831	85.7	970
Tayside	17,180	84.8	20,268
Western Isles	1,142	88.3	1,294
<b>Scotland</b>	<b>219,737</b>	<b>83.7</b>	<b>262,612</b>

## Measure 8: End Stage Renal Disease

Percentage of people with diabetes who have end stage renal disease (ESRD) or requiring renal replacement therapy (RRT) – presented in defined age ranges.

End Stage Renal Disease is not one of the applicable Processes of Care for those under 18 years of age.

### Methodology

Included population = all people with diabetes aged 18 or over are included.

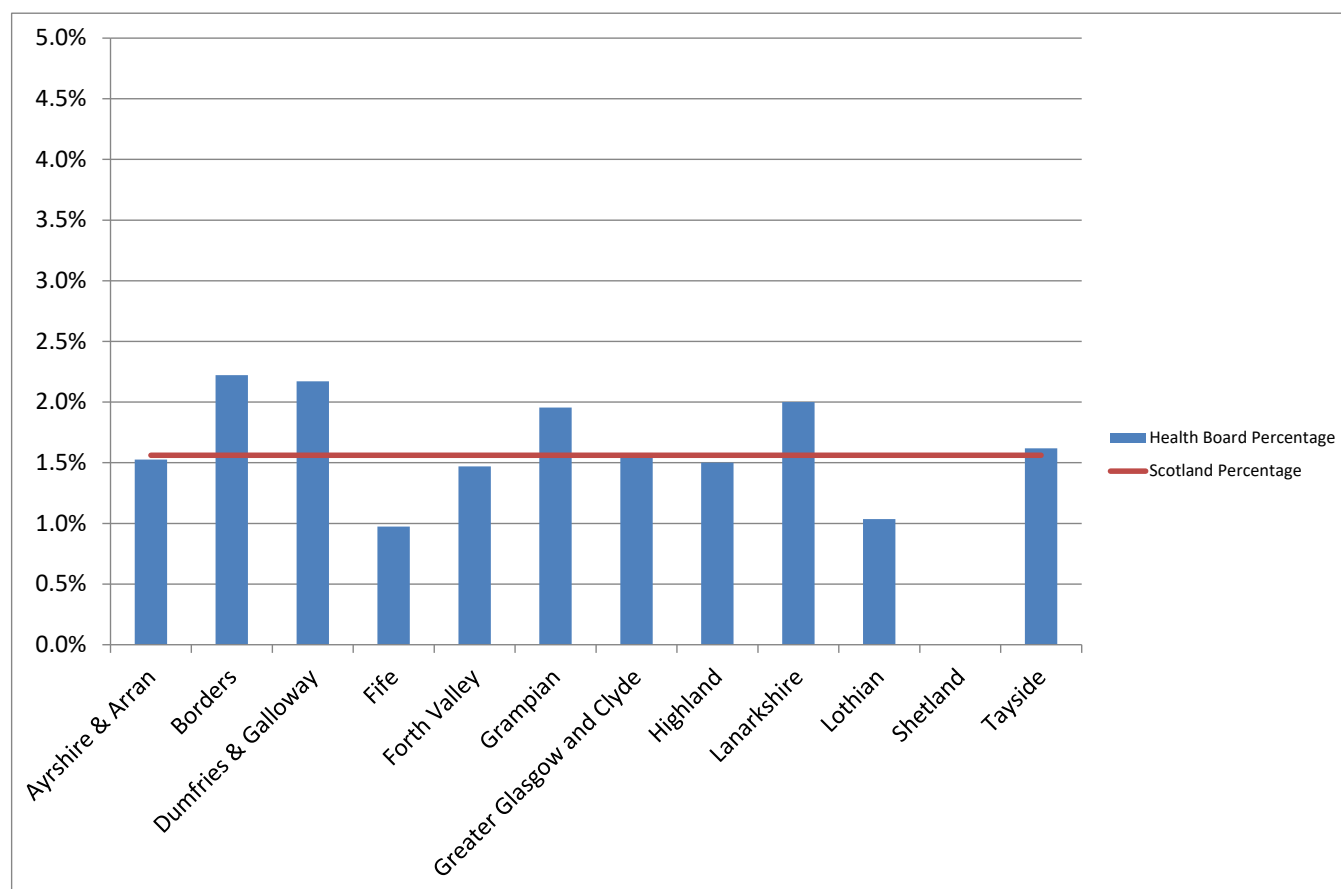
Numerator = number of people with diabetes in each age/type cohort identified as having ESRD or requiring RRT

Denominator = the total number of people with diabetes in each age/type cohort.

### Notes

ESRD/RRT is where any of the following is true:

- Data item "End Stage Renal Failure Date" is populated with any value
- Data item "Renal Replacement Therapy" is populated with any value
- Either serum creatinine was chronically greater than 500  $\mu\text{mol/l}$  or eGFR was less than 15 (stage 5 chronic kidney disease) on two occasions at least three months (93 days) apart within the previous 15 months (method from Scottish Diabetes Survey).

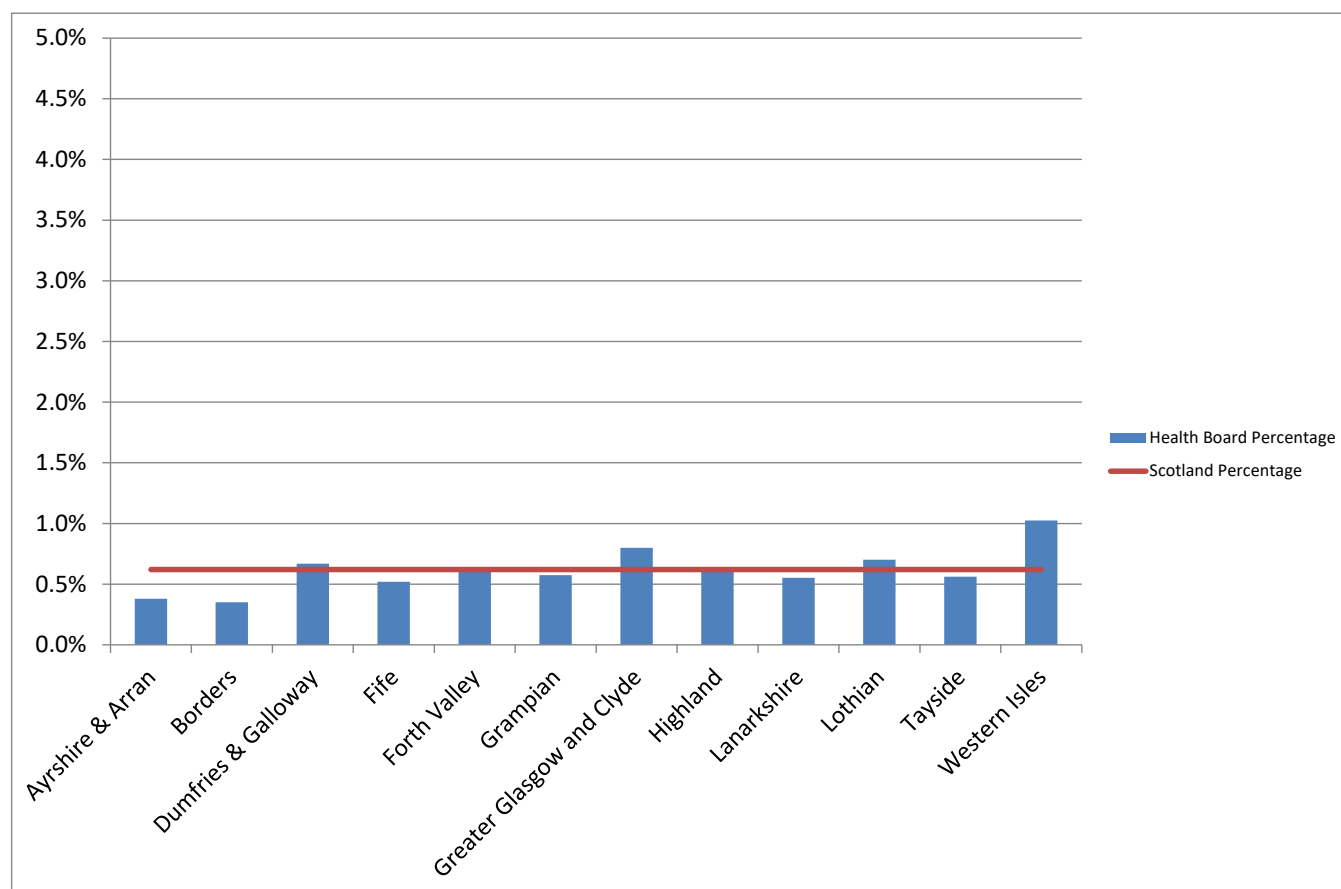
**Figure 36 Measure 8: End Stage Renal Disease - Type 1 age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 50 Measure 8: End Stage Renal Disease - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Developed End Stage Renal Disease		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	33	1.5	2,162
Borders	15	2.2	675
Dumfries & Galloway	20	2.2	921
Fife	20	1.0	2,054
Forth Valley	26	1.5	1,769
Grampian	64	2.0	3,272
Greater Glasgow and Clyde	97	1.6	6,135
Highland	30	1.5	1,999
Lanarkshire	82	2.0	4,096
Lothian	49	1.0	4,734
Orkney	*	*	116
Shetland	0	0.0	136
Tayside	34	1.6	2,101
Western Isles	*	*	185
<b>Scotland</b>	<b>474</b>	<b>1.6</b>	<b>30,355</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 37 Measure 8: End Stage Renal Disease - Type 2 and other age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 51 Measure 8: End Stage Renal Disease - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Developed End Stage Renal Disease		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	86	0.4	22,611
Borders	22	0.4	6,285
Dumfries & Galloway	59	0.7	8,821
Fife	107	0.5	20,562
Forth Valley	103	0.6	16,236
Grampian	153	0.6	26,616
Greater Glasgow and Clyde	476	0.8	59,573
Highland	101	0.6	16,528
Lanarkshire	206	0.6	37,248
Lothian	273	0.7	38,841
Orkney	*	*	1,123
Shetland	*	*	1,020
Tayside	123	0.6	21,886
Western Isles	14	1.0	1,365
<b>Scotland</b>	<b>1,729</b>	<b>0.6</b>	<b>278,715</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.



## Measure 9: Insulin Pump Therapy

Percentage of people with diabetes using CSII (Insulin Pump) therapy - presented in defined age ranges.

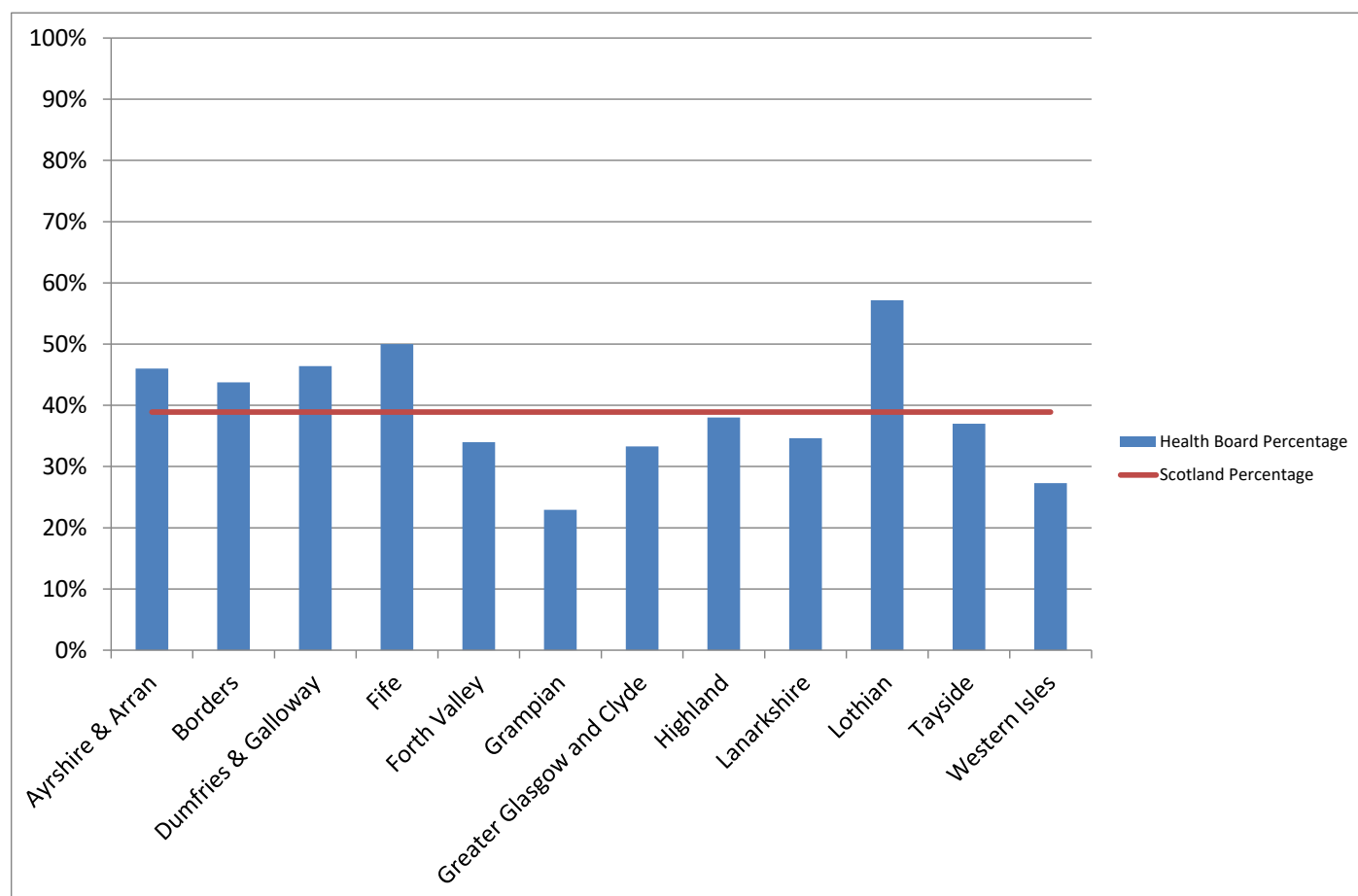
A national target was set in 2011 that 25% of all those in Scotland under 18 years of age with diabetes should have access to an insulin pump by March 2013. The figures show that this initial target has been met and, in most centres, exceeded. However, a clear majority remain using injection therapy.

### Methodology

Included population = all people of any age with type 1 diabetes are included.

Numerator = number of people with type 1 diabetes in each age cohort identified as “Using an Insulin Pump Therapy Device”

Denominator = the total number of people with type 1 diabetes in each age cohort.

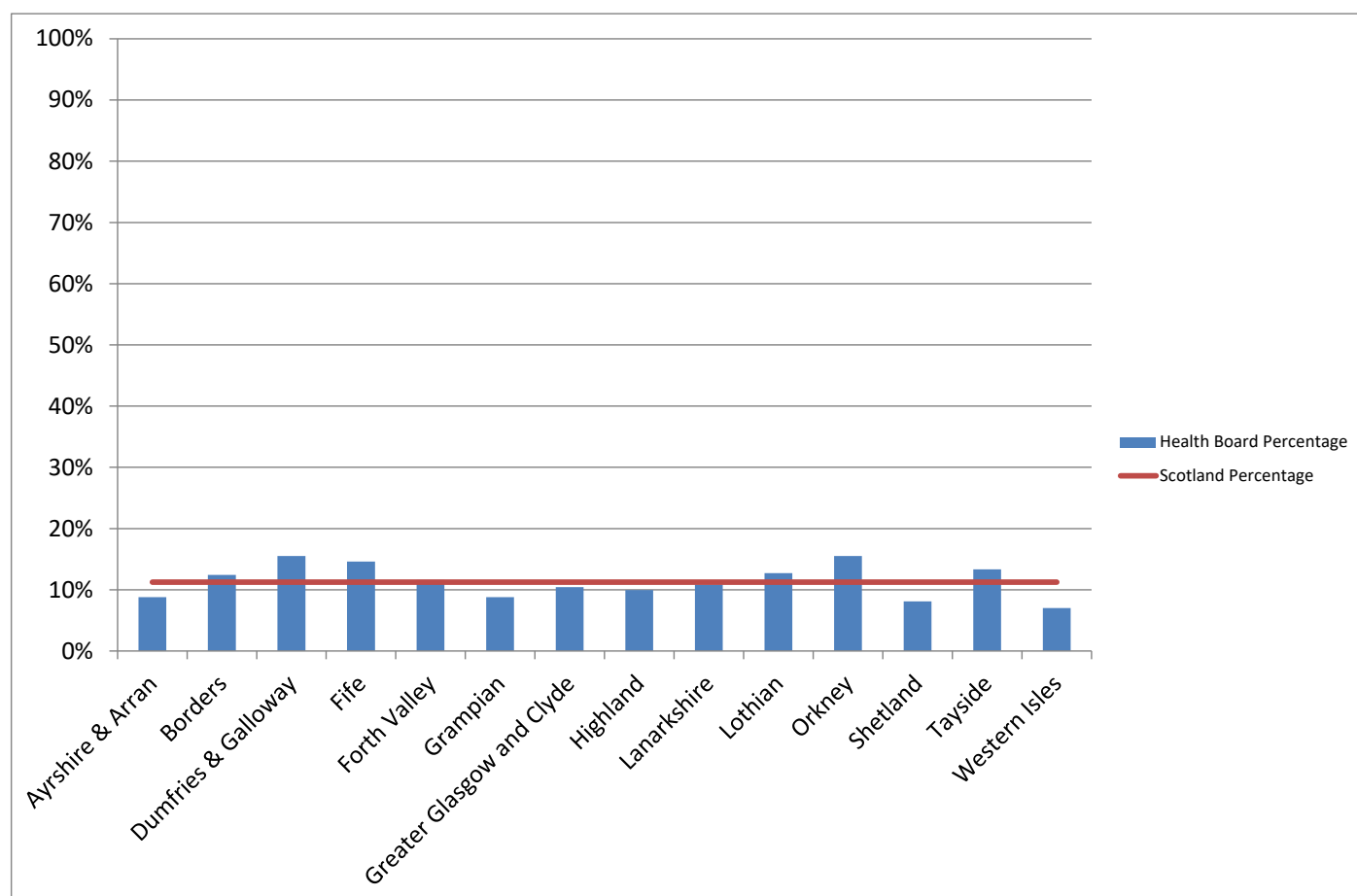
**Figure 38 Measure 9: Insulin pump therapy - Type 1 age 0-17 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 52 Measure 9: Insulin pump therapy - Type 1 age 0-17 by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 0-17 (n)
	People (n)	%	
Ayrshire & Arran	109	46.0	237
Borders	28	43.8	64
Dumfries & Galloway	45	46.4	97
Fife	107	50.0	214
Forth Valley	69	34.0	203
Grampian	80	22.9	349
Greater Glasgow and Clyde	195	33.3	586
Highland	81	38.0	213
Lanarkshire	158	34.6	456
Lothian	231	57.2	404
Orkney	*	*	9
Shetland	*	*	16
Tayside	74	37.0	200
Western Isles	6	27.3	22
<b>Scotland</b>	<b>1,194</b>	<b>38.9</b>	<b>3,070</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 39 Measure 9: Insulin pump therapy - Type 1 age 18+ by NHS board, Scotland 2019.****Table 53 Measure 9: Insulin pump therapy - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	190	8.8	2,162
Borders	84	12.4	675
Dumfries & Galloway	143	15.5	921
Fife	300	14.6	2,054
Forth Valley	205	11.6	1,769
Grampian	288	8.8	3,272
Greater Glasgow and Clyde	641	10.4	6,135
Highland	199	10.0	1,999
Lanarkshire	446	10.9	4,096
Lothian	603	12.7	4,734
Orkney	18	15.5	116
Shetland	11	8.1	136
Tayside	280	13.3	2,101
Western Isles	13	7.0	185
<b>Scotland</b>	<b>3,421</b>	<b>11.3</b>	<b>30,355</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Measure 10: Significant Weight Loss

Percentage of people with diabetes with a BMI  $\geq 30$  who have lost  $\geq 5\%$  body weight in the last year - presented in defined age ranges (detailed description below).

Significant Weight Loss is not one of the applicable Processes of Care for those under 18 years of age, and consequently the associated table and figure for those with type 1 diabetes have been omitted.

### Methodology

Included population = people with diabetes who had a BMI  $\geq 30$  recorded any time in the prior 15 months who also have a weight that precedes their latest weight (which must be recorded in the prior year) by 12 months ( $\pm 90$  days) are included.

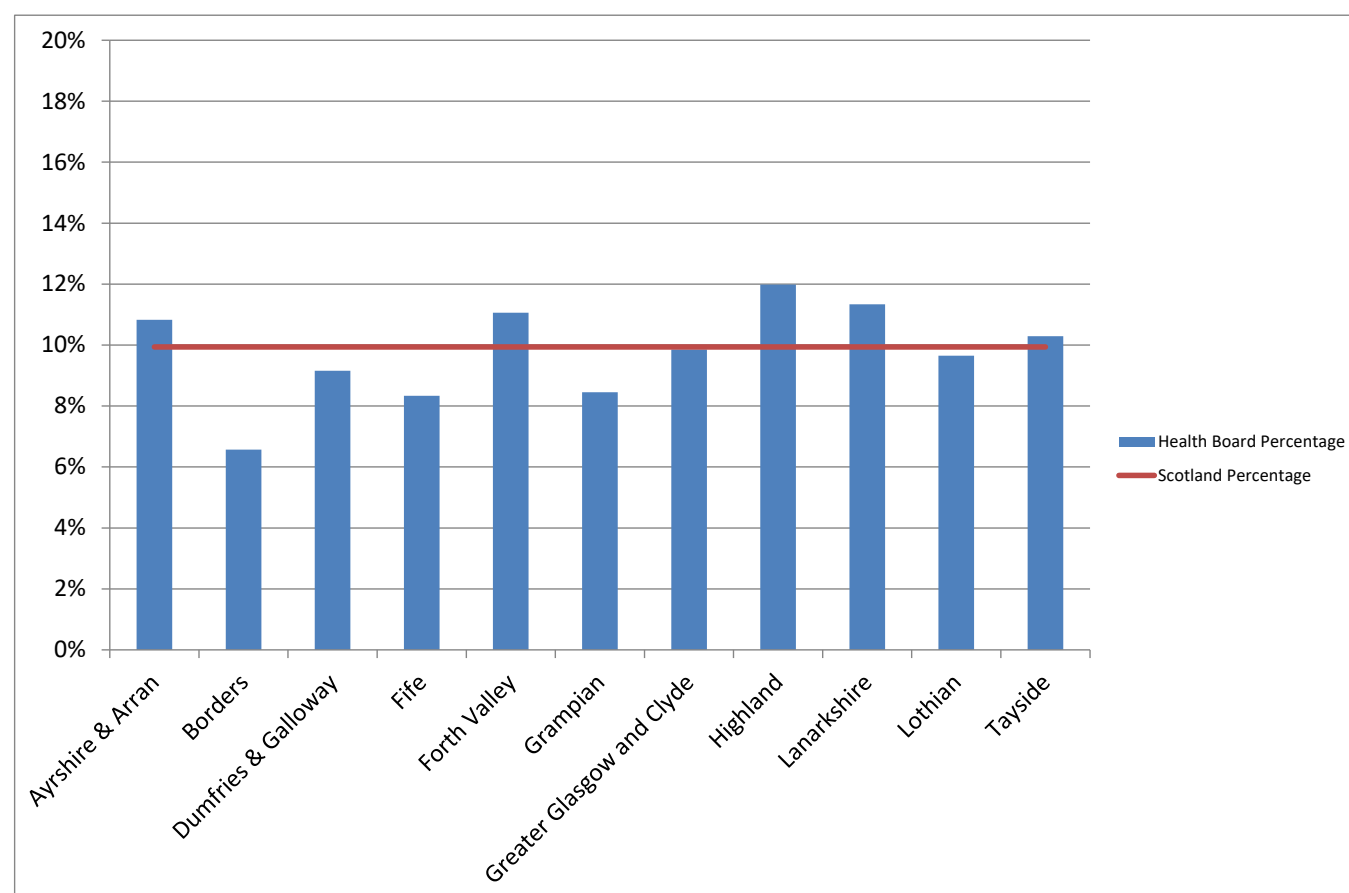
Numerator = number of people with diabetes in each age/type cohort whose latest weight shows a  $\geq 5\%$  reduction since their weight a year ago.

Denominator = the total number of people with diabetes in each age/type cohort who meet the required inclusion criteria (see above).

### Notes

People where their weight has reduced by 5% or more in the last year as determined by:

- Weight "now" is current weight recorded any time within the last year.
- Weight "one year ago" is the weight record closest to Weight "now" - 12 months within the time window of  $\pm 90$  days (3 months).
- Patient meets the criteria if  $\text{Weight "now"} \leq (\text{Weight "one year ago"} - 5\%)$ .
- Only if both values can be determined will the calculation take place.

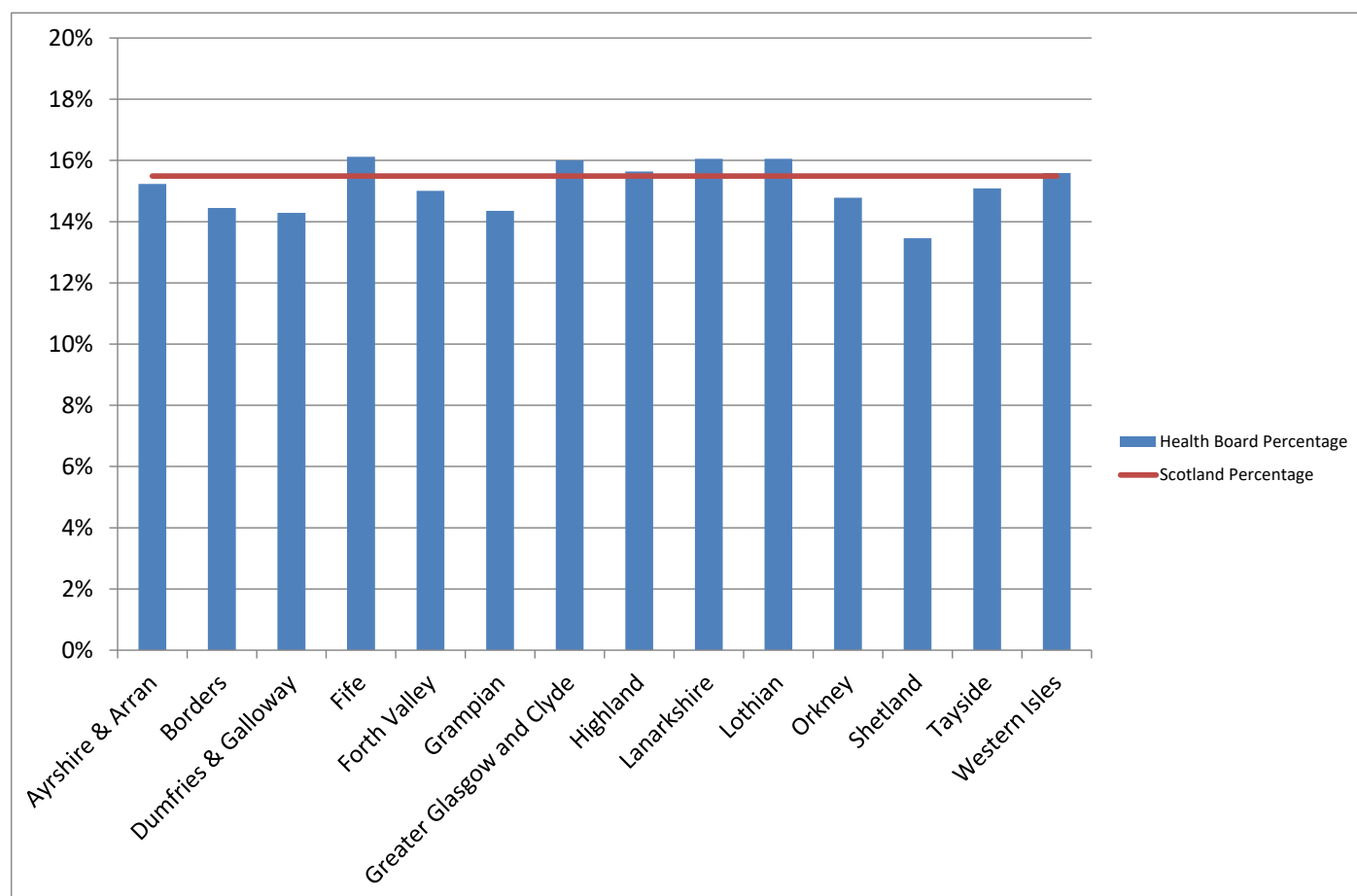
**Figure 40 Measure 10: Significant weight loss - Type 1 age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 54 Measure 10: Significant weight loss - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	31	10.8	286
Borders	9	6.6	137
Dumfries & Galloway	13	9.2	142
Fife	32	8.3	384
Forth Valley	28	11.1	253
Grampian	58	8.5	686
Greater Glasgow and Clyde	86	9.9	873
Highland	38	12.0	317
Lanarkshire	71	11.3	626
Lothian	63	9.6	653
Orkney	*	*	16
Shetland	*	*	22
Tayside	38	10.3	369
Western Isles	*	*	25
<b>Scotland</b>	<b>476</b>	<b>9.9</b>	<b>4,789</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 41 Measure 10: Significant weight loss - Type 2 and other age 18+ by NHS board, Scotland 2019.****Table 55 Measure 10: Significant weight loss - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	893	15.2	5,861
Borders	265	14.5	1,833
Dumfries & Galloway	396	14.3	2,770
Fife	1,019	16.1	6,319
Forth Valley	672	15.0	4,476
Grampian	1,357	14.4	9,454
Greater Glasgow and Clyde	2,528	16.0	15,800
Highland	886	15.6	5,663
Lanarkshire	1,536	16.1	9,568
Lothian	1,638	16.1	10,205
Orkney	68	14.8	460
Shetland	47	13.5	349
Tayside	1,109	15.1	7,346
Western Isles	70	15.6	449
<b>Scotland</b>	<b>12,484</b>	<b>15.5</b>	<b>80,553</b>

## Measure 11: Attended Structured Education

Percentage of people with diabetes who have ever attended Level 3 structured education - presented in defined age ranges.

Attended structured education is not one of the applicable Processes of Care for those under 18 years of age, and consequently the associated table and figure for those with type 1 diabetes have been omitted.

### Methodology

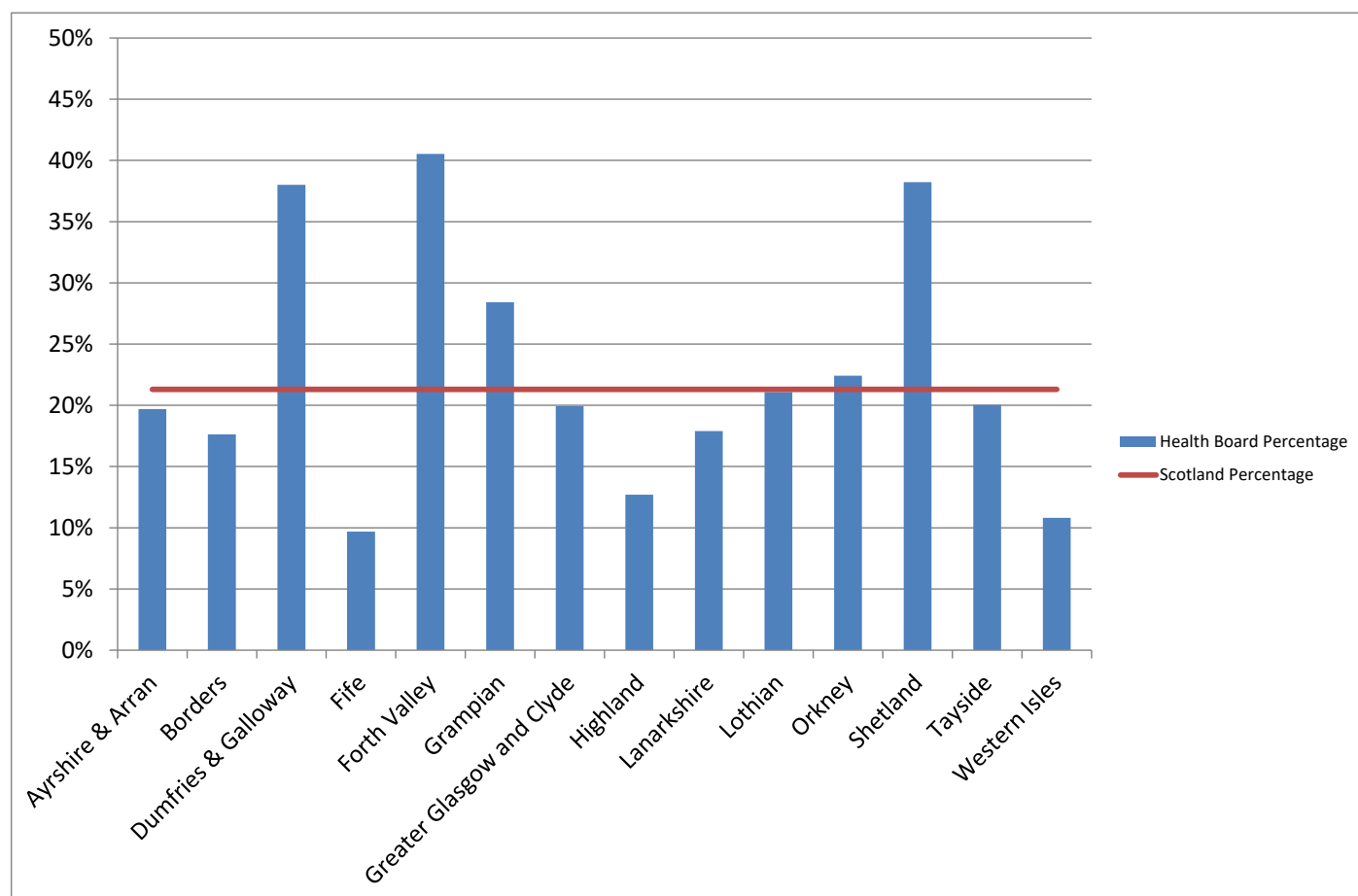
Included population = all people of any age with diabetes are included.

Numerator = number of people with diabetes in each age/type cohort who have at least one "Level 3" education record with "Education Status" = "Participated". The record may have been recorded at any time.

Denominator = the total number of people with diabetes in each age/type cohort.

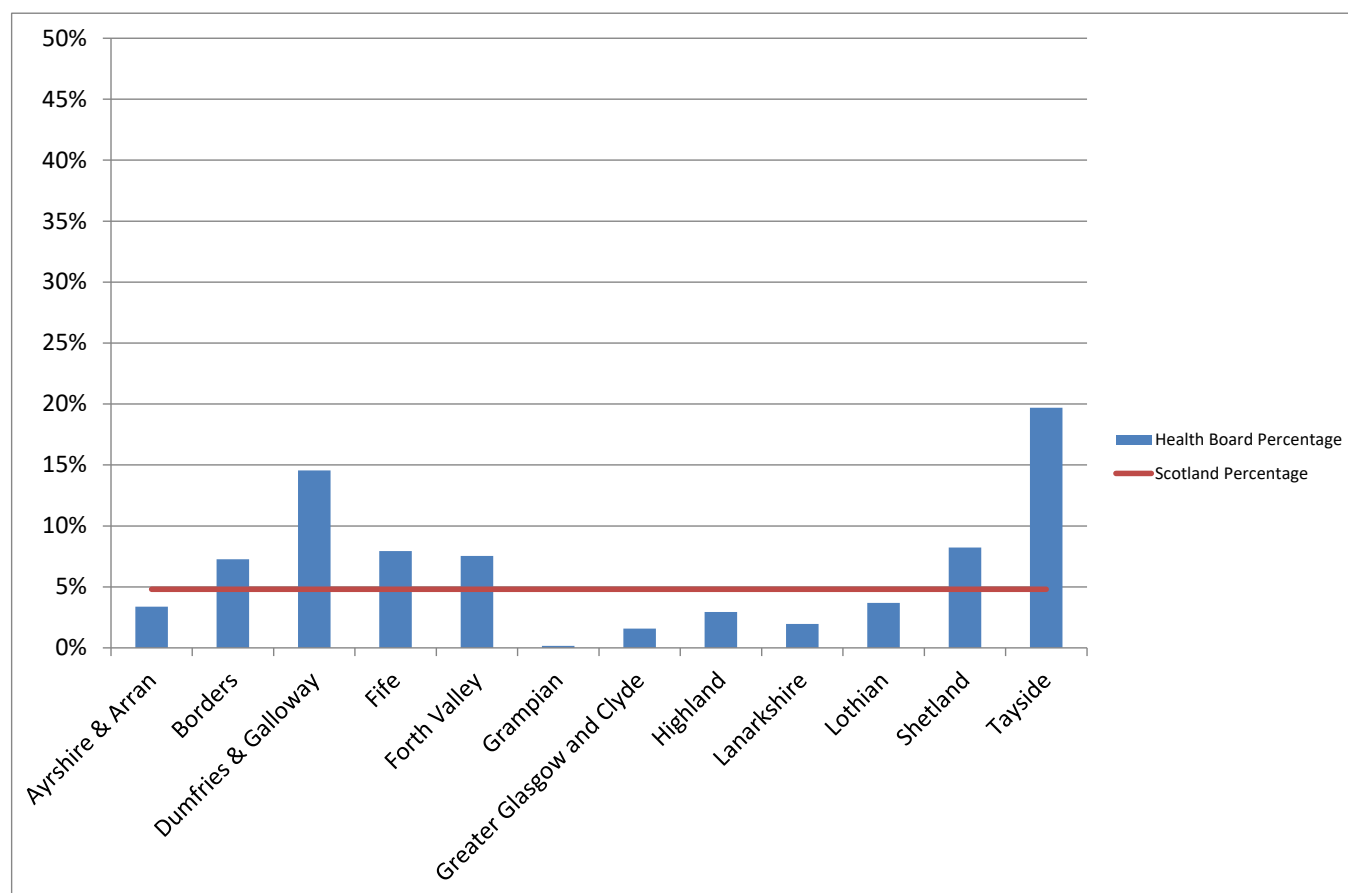
### Notes

An "Education Status" of "Participated" can only be recorded manually in SCI-Diabetes.

**Figure 42 Measure 11: Attended structured education - Type 1 age 18+ by NHS board, Scotland 2019.****Table 56 Measure 11: Attended structured education - Type 1 age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	426	19.7	2,162
Borders	119	17.6	675
Dumfries & Galloway	350	38.0	921
Fife	199	9.7	2,054
Forth Valley	717	40.5	1,769
Grampian	930	28.4	3,272
Greater Glasgow and Clyde	1,223	19.9	6,135
Highland	254	12.7	1,999
Lanarkshire	733	17.9	4,096
Lothian	998	21.1	4,734
Orkney	26	22.4	116
Shetland	52	38.2	136
Tayside	421	20.0	2,101
Western Isles	20	10.8	185
<b>Scotland</b>	<b>6,468</b>	<b>21.3</b>	<b>30,355</b>



**Figure 43 Measure 11: Attended structured education - Type 2 and other age 18+ by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 57 Measure 11: Attended structured education - Type 2 and other age 18+ by NHS board, Scotland 2019.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire & Arran	763	3.4	22,611
Borders	457	7.3	6,285
Dumfries & Galloway	1,284	14.6	8,821
Fife	1,631	7.9	20,562
Forth Valley	1,224	7.5	16,236
Grampian	41	0.2	26,616
Greater Glasgow and Clyde	945	1.6	59,573
Highland	486	2.9	16,528
Lanarkshire	733	2.0	37,248
Lothian	1,431	3.7	38,841
Orkney	*	*	1,123
Shetland	84	8.2	1,020
Tayside	4,311	19.7	21,886
Western Isles	*	*	1,365
<b>Scotland</b>	<b>13,396</b>	<b>4.8</b>	<b>278,715</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Measure 12: Disengaged from Diabetes Care

Percentage of people with diabetes who are disengaged from diabetes care, i.e. no HbA<sub>1c</sub> and no retinal screening in the preceding 15 months - presented in defined age ranges.

Disengaged from Diabetes Care is not one of the applicable Processes of Care for those under 18 years of age, and consequently the associated table and figure for those with type 1 diabetes have been omitted.

### Methodology

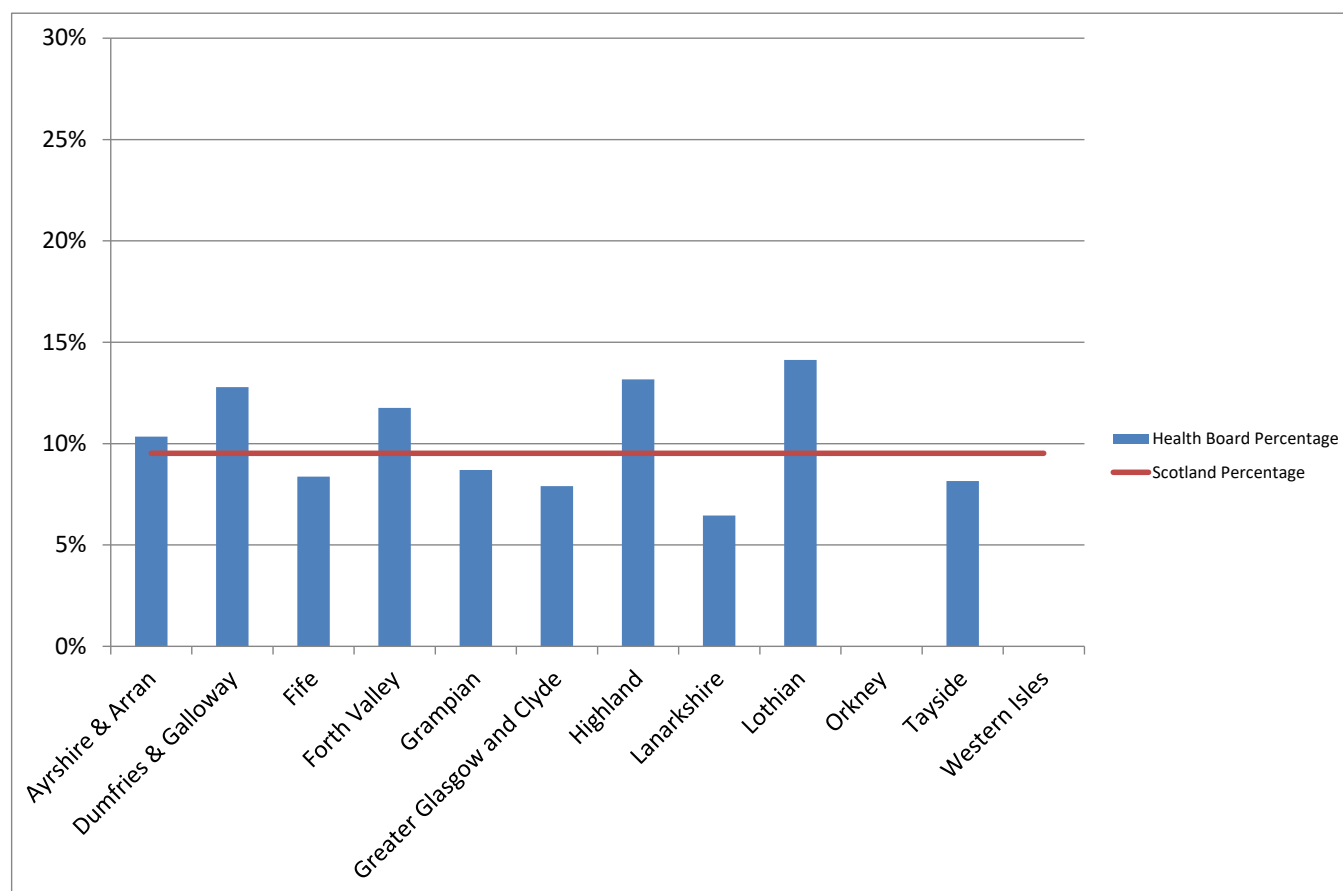
Included population = people with diabetes aged 12 or over who have a duration of diabetes  $\geq 1$  year are included.

Numerator = the total number of people in each age/type cohort who have no record of HbA<sub>1c</sub> and no record of retinal screening in the prior 15 months.

Denominator = the total number of people in each age/type cohort who have a duration of diabetes  $\geq 1$  year

### Notes

People currently suspended from eye-screening or who are under the care of Ophthalmology are considered to be "engaged" with service (in addition to those with a recorded HbA<sub>1c</sub> or retinal screening).

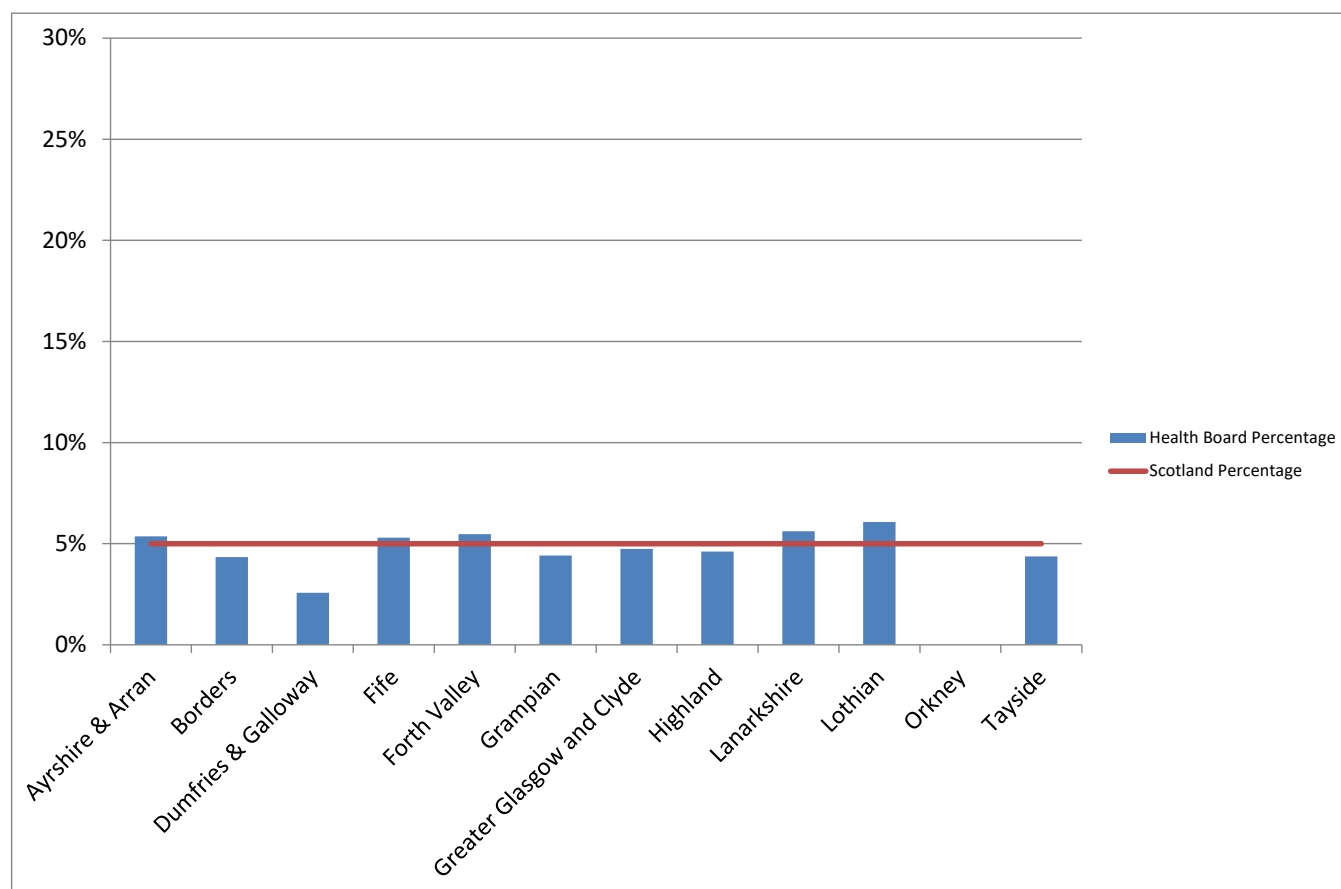
**Figure 44 Measure 12: Disengaged from diabetes care - Type 1 age 18-25 by NHS board, Scotland 2019.**

Note: Bars for boards with hidden data aren't shown.

**Table 58 Measure 12: Disengaged from diabetes care - Type 1 age 18-25 by NHS board, Scotland 2019.**

NHS board	Disengaged		All aged 18-25 (n)
	People (n)	%	
Ayrshire & Arran	29	10.4	280
Borders	*	*	63
Dumfries & Galloway	11	12.8	86
Fife	18	8.4	215
Forth Valley	24	11.8	204
Grampian	32	8.7	368
Greater Glasgow and Clyde	61	7.9	772
Highland	27	13.2	205
Lanarkshire	30	6.5	465
Lothian	83	14.1	587
Orkney	0	0.0	15
Shetland	*	*	9
Tayside	23	8.2	282
Western Isles	0	0.0	18
<b>Scotland</b>	<b>340</b>	<b>9.5</b>	<b>3,569</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 45 Measure 12: Disengaged from diabetes care - Type 1 age 26+ by NHS board, Scotland 2019.**

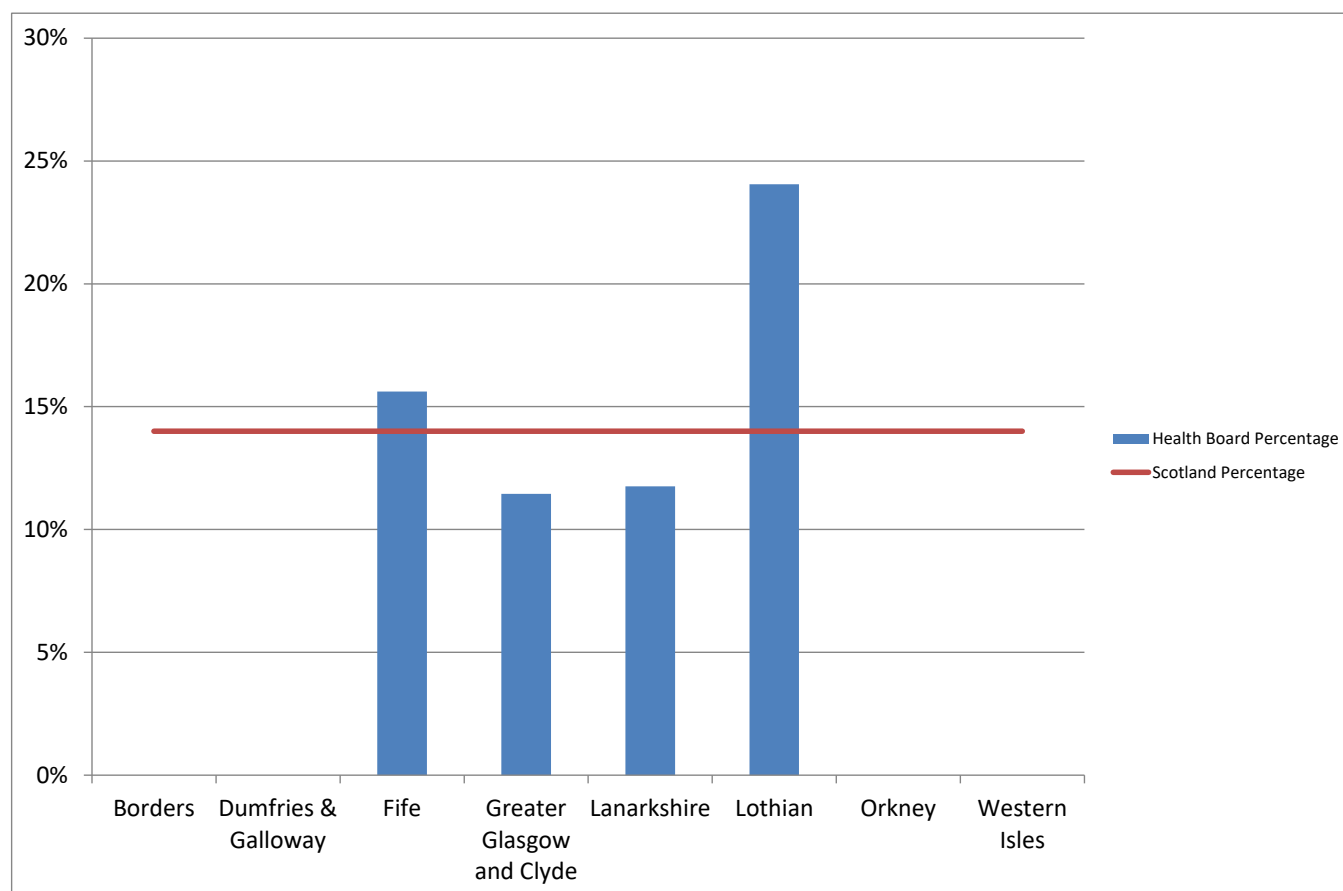
Note: Bars for boards with hidden data aren't shown.

**Table 59 Measure 12: Disengaged from diabetes care – Type 1 Age 26+ by NHS board, Scotland 2019.**

NHS board	Disengaged		All aged 26+ (n)
	People (n)	%	
Ayrshire & Arran	99	5.4	1,847
Borders	26	4.3	599
Dumfries & Galloway	21	2.6	818
Fife	95	5.3	1,793
Forth Valley	83	5.5	1,516
Grampian	126	4.4	2,853
Greater Glasgow and Clyde	248	4.7	5,230
Highland	81	4.6	1,756
Lanarkshire	200	5.6	3,563
Lothian	243	6.1	4,000
Orkney	0	0.0	99
Shetland	*	*	123
Tayside	78	4.4	1,783
Western Isles	*	*	164
<b>Scotland</b>	<b>1,307</b>	<b>5.0</b>	<b>26,144</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 46 Measure 12: Disengaged from diabetes care - Type 2 and other age 18-25 by NHS board, Scotland 2019.**

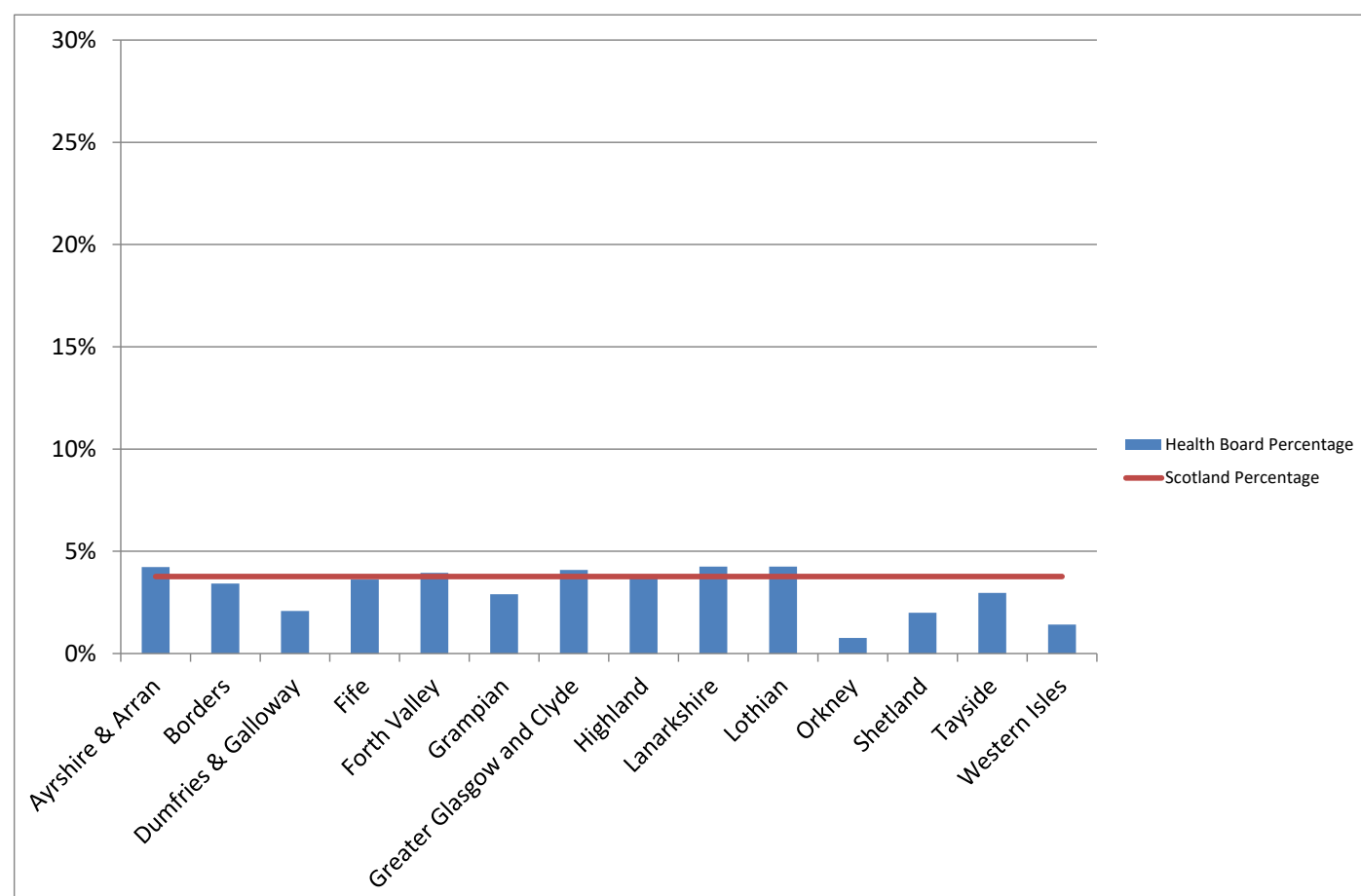


Note: Bars for boards with hidden data aren't shown.

**Table 60 Measure 12: Disengaged from diabetes care - Type 2 and other age 18-25 by NHS board, Scotland 2019.**

NHS board	Disengaged		All aged 18-25 (n)
	People (n)	%	
Ayrshire & Arran	*	*	23
Borders	0	0.0	*
Dumfries & Galloway	0	0.0	12
Fife	5	15.6	32
Forth Valley	*	*	18
Grampian	*	*	36
Greater Glasgow and Clyde	11	11.5	96
Highland	*	*	15
Lanarkshire	6	11.8	51
Lothian	19	24.1	79
Orkney	0	0.0	0
Shetland	*	*	*
Tayside	*	*	34
Western Isles	0	0.0	0
<b>Scotland</b>	<b>57</b>	<b>14.0</b>	<b>407</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Figure 47 Measure 12: Disengaged from diabetes care - Type 2 and other age 26+ by NHS board, Scotland 2019.****Table 61 Measure 12: Disengaged from diabetes care - Type 2 and other age 26+ by NHS board, Scotland 2019.**

NHS board	Disengaged		All aged 26+ (n)
	People (n)	%	
Ayrshire & Arran	897	4.2	21,228
Borders	202	3.4	5,900
Dumfries & Galloway	172	2.1	8,263
Fife	691	3.6	19,090
Forth Valley	589	3.9	14,941
Grampian	716	2.9	24,697
Greater Glasgow and Clyde	2,276	4.1	55,612
Highland	557	3.7	15,067
Lanarkshire	1,454	4.3	34,164
Lothian	1,536	4.3	36,101
Orkney	8	0.8	1,048
Shetland	19	2.0	953
Tayside	613	3.0	20,652
Western Isles	18	1.4	1,269
<b>Scotland</b>	<b>9,748</b>	<b>3.8</b>	<b>258,985</b>

# National and Regional Detail

This section includes additional national and regional (by NHS board) detail.

## Prevalence Regional Detail

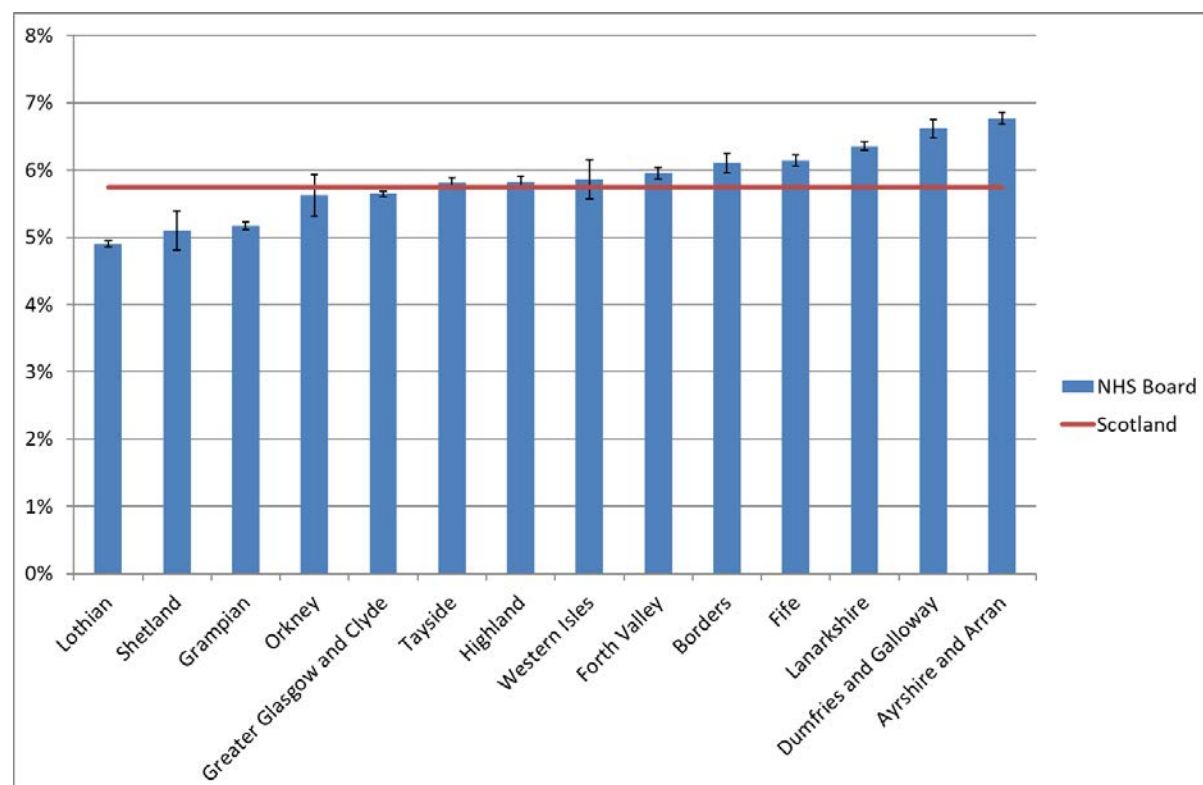
Age-adjusted prevalence is based on direct age/sex standardisation using the Scottish population as the reference population structure. Population figures are based on mid-year population estimates published by National Records of Scotland. Because of publication dates, surveys have in each case used population figures for the previous year - so that the 2019 survey uses diabetes data from 2019 but mid-year population estimates from 2018. This will lead to a very small overestimate of diabetes prevalence.

Differences in prevalence are due to several factors. One is age - type 2 diabetes is more common in older age groups so the age structure of an area will affect the crude prevalence. A health board area with an older population will have a higher crude prevalence; e.g. the crude (unadjusted) prevalence of diabetes in Dumfries & Galloway is above the Scottish average; however when the figure is adjusted for the age of the population, the Dumfries & Galloway prevalence is actually lower than the Scottish average. Other reasons for differences in observed prevalence are given at the start of this section.

**Table 62 Crude and age-adjusted prevalence of diabetes (all types), by NHS board, ranked by age-adjusted prevalence, Scotland 2019.**

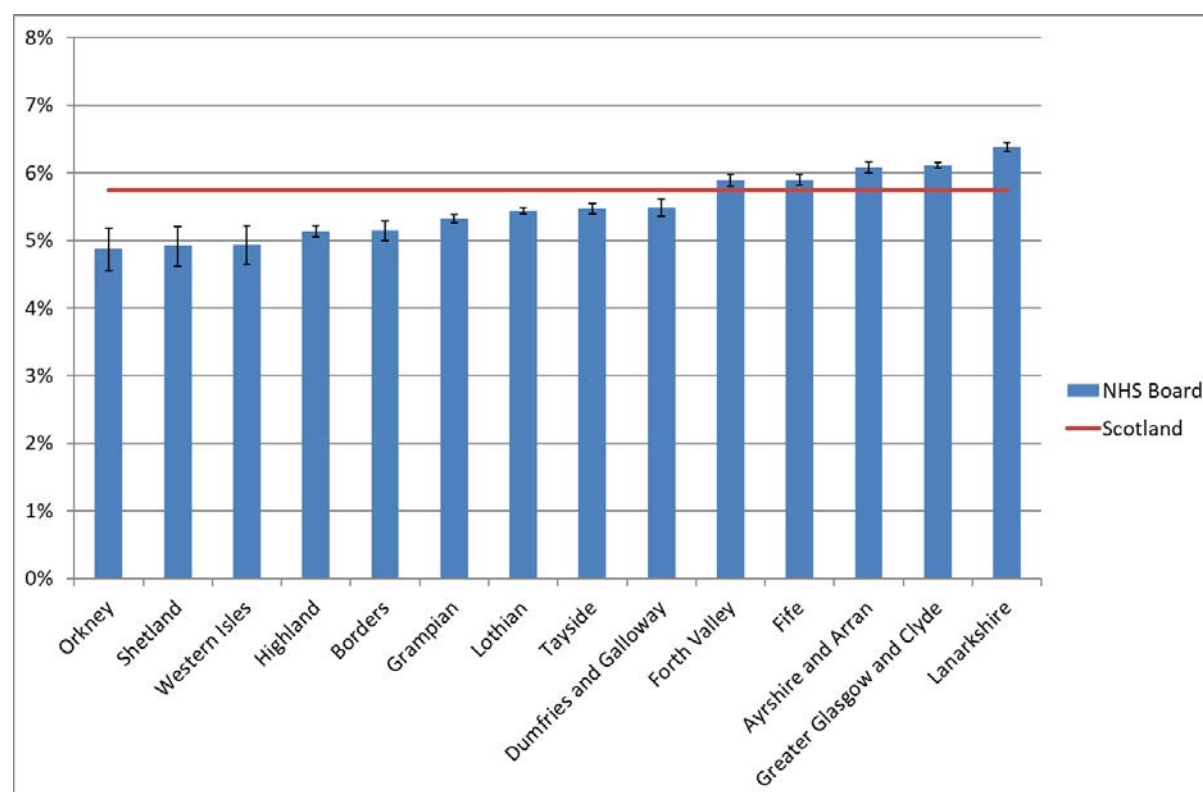
NHS board	Population (n)	Number on the diabetes register at the end of the year (n)	Crude prevalence (%)	Age-adjusted prevalence (%)
Orkney	22,190	1,249	5.6	4.9
Shetland	22,990	1,173	5.1	4.9
Western Isles	26,830	1,573	5.9	4.9
Highland	321,800	18,751	5.8	5.1
Borders	115,270	7,032	6.1	5.1
Grampian	584,550	30,251	5.2	5.3
Lothian	897,770	44,016	4.9	5.4
Tayside	416,080	24,187	5.8	5.5
Dumfries and Galloway	148,790	9,846	6.6	5.5
Forth Valley	306,070	18,216	6.0	5.9
Fife	371,910	22,854	6.1	5.9
Ayrshire and Arran	369,670	25,012	6.8	6.1
Greater Glasgow and Clyde	1,174,980	66,332	5.6	6.1
Lanarkshire	659,200	41,898	6.4	6.4
<b>Scotland</b>	<b>5,438,100</b>	<b>312,390</b>	<b>5.7</b>	<b>5.7</b>

**Figure 48 Crude diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2019.**



Note: Vertical capped lines show 95% confidence intervals.

**Figure 49 Age-adjusted diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2019.**



Note: Vertical lines show 95% confidence intervals.



Age-adjusted prevalence is based on direct age/sex standardisation using the Scottish population as the reference population structure. Population figures are based on mid-year population estimates published by National Records of Scotland. Because of publication dates, surveys have in each case used population figures for the previous year - so that the 2019 survey uses diabetes data from 2019 but mid-year population estimates from 2018. This will lead to a very small overestimate of diabetes prevalence.

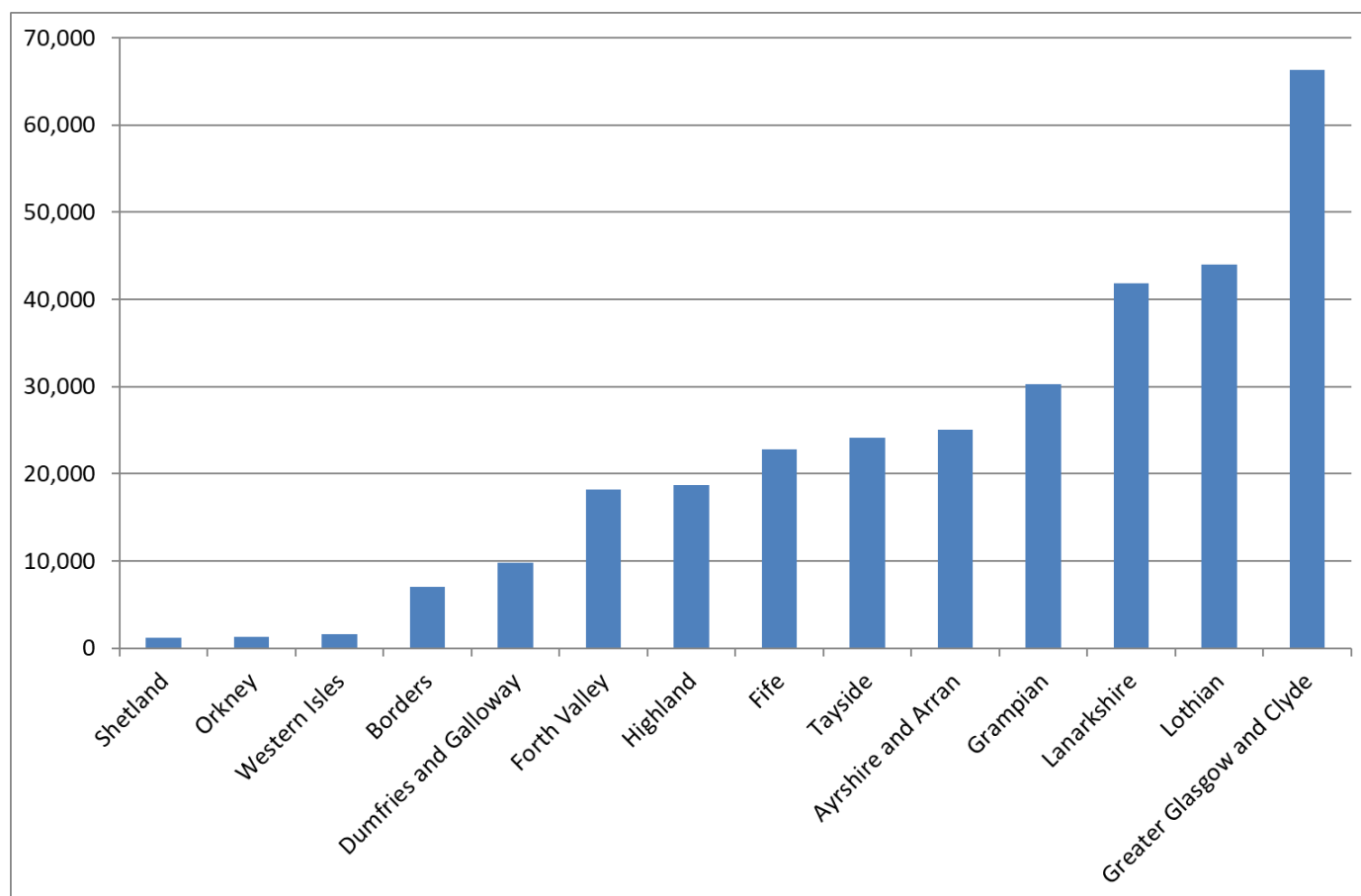
Differences in prevalence are due to several factors. One is age - type 2 diabetes is more common in older age groups so the age structure of an area will affect the crude prevalence. A health board area with an older population will have a higher crude prevalence; e.g. the crude (unadjusted) prevalence of diabetes in Dumfries & Galloway is above the Scottish average; however when the figure is adjusted for the age of the population, the Dumfries & Galloway prevalence is actually lower than the Scottish average. Other reasons for differences in observed prevalence are given at the start of this section.

Table 62 and Figure 48 and Figure 49 show both crude and age-adjusted figures for the prevalence of diabetes of all types in 2019. The age-adjusted figures take account of the fact that the average age differs between boards and that older populations have higher diabetes prevalence. **Error! Reference source not found.** shows that the prevalence of diabetes is particularly high among those aged 65 and over.

**Table 63 Crude prevalence of diabetes for people aged 65 and over (all types), by NHS board, ranked by prevalence, Scotland 2019.**

NHS board	Age >= 65 (n)	Age >= 65 with Diabetes (n)	Prevalence in those aged >= 65 (%)
Western Isles	6,825	899	13.2
Orkney	5,234	709	13.5
Shetland	4,555	640	14.1
Highland	73,956	10,654	14.4
Borders	28,103	4,202	15.0
Dumfries and Galloway	37,879	5,773	15.2
Lothian	146,069	22,553	15.4
Grampian	105,754	16,428	15.5
Tayside	88,474	13,827	15.6
Ayrshire and Arran	82,813	13,572	16.4
Fife	75,590	12,427	16.4
Forth Valley	58,235	9,616	16.5
Greater Glasgow and Clyde	193,326	32,367	16.7
Lanarkshire	119,301	21,273	17.8
<b>Scotland</b>	<b>1,026,114</b>	<b>164,940</b>	<b>16.1</b>

**Figure 50** Number of people with diabetes (all types) in each NHS Health Board, Scotland 2019.



**Note:** The remainder of this report focuses on type 1 and type 2 diabetes and excludes other types.

## Incidence of Type 2 Diabetes

The methodology used in calculating the incidence figures below were updated in 2017, more details are given in the [Type 1 Diabetes Incidence](#) section.

**Table 64 Type 2 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by age, Scotland 2012-2019.**

Age	2012 (a)		2013		2014		2015		2016		2017		2018		2019		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases (n)	Rate	Cases (n)	Rate	Cases (n)	Rate	Cases (n)	Rate	Population	Cases (n)	Rate
0-9	0	0	*	*	0	0	0	0	0	0	*	0	0	0	577,205	*	0
10-19	21	4	*	*	19	3	20	3	17	3	*	4	17	3	569,074	*	4
20-29	208	29	178	25	197	28	165	23	228	31	205	28	188	26	726,806	216	30
30-39	939	148	810	125	756	117	834	129	869	132	898	134	884	129	697,817	1,017	146
40-49	2,733	359	2,570	333	2,467	326	2,432	329	2,364	328	2,225	316	2,169	317	666,364	2,378	357
50-59	4,567	699	4,387	650	4,210	612	4,451	636	4,417	619	4,266	591	4,252	584	732,920	4,872	665
60-69	4,943	940	5,023	930	4,513	830	4,677	853	4,570	825	4,331	771	4,268	767	557,700	4,901	879
>=70	4,596	861	4,876	898	4,217	769	4,472	801	4,508	801	4,269	749	4,202	711	605,967	5,123	845
<b>Total</b>	<b>18,007</b>	<b>360</b>	<b>17,853</b>	<b>353</b>	<b>16,379</b>	<b>324</b>	<b>17,051</b>	<b>336</b>	<b>16,973</b>	<b>334</b>	<b>16,216</b>	<b>317</b>	<b>15,980</b>	<b>312</b>	<b>5,133,725</b>	<b>18,530</b>	<b>361</b>

Note: a) In the years up to 2012, the at-risk population includes those with diagnosed frank diabetes, under-estimating the incidence rate. \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. The Scottish at-risk population figures exclude people with frank diabetes at the end of the previous year whose age is unknown (n = 121).

**Table 65 Type 2 diabetes: Incidence rate (per 100,000 population per year) by age, Scotland 2012-2019.**

Age range	2012 (a)	2013	2014	2015	2016	2017	2018	2019
0-9	0	0	0	0	0	0	0	0
10-19	4	1	3	3	3	4	3	4
20-29	29	25	28	23	31	28	26	30
30-39	148	125	117	129	132	134	129	146
40-49	359	333	326	329	328	316	317	357
50-59	699	650	612	636	619	591	584	665
60-69	940	930	830	853	825	771	767	879
>=70	861	898	769	801	801	749	711	845
<b>Total</b>	<b>360</b>	<b>353</b>	<b>324</b>	<b>336</b>	<b>334</b>	<b>317</b>	<b>312</b>	<b>361</b>

Note: a) In the years prior to 2012, the at-risk population includes those with diagnosed frank diabetes, under-estimating the incidence rate.

See the [Type 1 Diabetes Incidence](#) section for information on people with type 1 diabetes

## Incidence Regional Detail

**Table 66 Type 1 diabetes: Number of new cases and crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by descending rate in 2019, Scotland 2013-2019.**

NHS board	2013		2014		2015		2016		2017		2018		2019		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Mid 2018 Population without diabetes	Cases	Rate
Shetland	*	*	5	23	7	32	*	*	7	32	*	*	21,849	6	27
Forth Valley	52	18	56	20	55	19	43	15	59	21	70	24	288,483	71	25
Dumfries and Galloway	21	15	20	14	23	16	25	18	27	19	30	21	139,126	34	24
Lothian	152	19	147	18	136	17	163	20	145	17	155	18	855,120	194	23
Borders	16	15	12	11	19	18	26	24	15	14	16	15	108,375	23	21
Lanarkshire	88	16	93	15	110	18	113	18	117	19	125	20	618,941	127	21
Fife	47	14	52	15	50	14	74	21	67	19	67	19	349,778	71	20
Highland	62	20	54	18	50	16	50	16	59	19	68	22	303,717	61	20
Western Isles	*	*	8	31	*	*	8	31	*	*	6	24	25,320	*	*
Orkney	0	0	0	0	*	*	*	*	*	*	*	*	20,960	*	*
Greater Glasgow and Clyde	187	16	193	18	194	18	202	19	225	20	210	19	1,109,806	208	19
Grampian	88	16	111	20	111	20	108	19	125	22	105	19	554,960	98	18
Ayrshire and Arran	64	18	73	21	67	19	51	15	60	17	63	18	345,195	58	17
Tayside	65	17	59	15	67	17	76	19	62	16	69	18	392,095	64	16
<b>Scotland</b>	<b>848</b>	<b>17</b>	<b>883</b>	<b>17</b>	<b>898</b>	<b>18</b>	<b>943</b>	<b>19</b>	<b>978</b>	<b>19</b>	<b>993</b>	<b>19</b>	<b>5,133,725</b>	<b>1,024</b>	<b>20</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. This table is deliberately limited to only 7 years of information due to limited space.

**Table 67 Type 1 diabetes: Crude incidence rate of new cases for all ages (cases per 100,000 population per year) by NHS board, ranked by descending rate in 2019, Scotland 2011-2019.**

NHS board	2011	2012	2013	2014	2015	2016	2017	2018	2019
Shetland	*	*	*	23	32	*	32	*	27
Forth Valley	22	25	18	20	19	15	21	24	25
Dumfries and Galloway	14	14	15	14	16	18	19	21	24
Lothian	17	19	19	18	17	20	17	18	23
Borders	16	19	15	11	18	24	14	15	21
Lanarkshire	21	21	16	15	18	18	19	20	21
Fife	23	18	14	15	14	21	19	19	20
Highland	25	16	20	18	16	16	19	22	20
Western Isles	*	36	*	31	*	31	*	24	*
Orkney	26	*	0	0	*	*	*	*	*
Greater Glasgow and Clyde	19	20	16	18	18	19	20	19	19
Grampian	22	17	16	20	20	19	22	19	18
Ayrshire and Arran	20	23	18	21	19	15	17	18	17
Tayside	15	19	17	15	17	19	16	18	16
<b>Scotland</b>	<b>20</b>	<b>20</b>	<b>17</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>20</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. This table is deliberately limited to only 9 years of information due to limited space.

**Table 68 Type 2 diabetes: Number of new cases and crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by descending rate in 2019, Scotland 2013-2019.**

NHS board	2013		2014		2015		2016		2017		2018		2019		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Mid 2018 Population without diabetes	Cases	Rate
Lanarkshire	2,197	405	2,041	329	2,379	384	2,269	368	1,965	318	2,037	329	618,941	2,844	459
Highland	1,023	336	826	271	908	298	1,039	341	1,040	341	1,045	343	303,717	1,378	454
Forth Valley	981	345	844	297	986	346	1,017	355	1,051	365	911	316	288,483	1,255	435
Fife	1,397	402	1,367	394	1,074	310	1,125	324	1,172	336	1,115	319	349,778	1,411	403
Ayrshire and Arran	1,315	373	1,287	367	1,357	389	1,371	394	1,254	361	1,280	370	345,195	1,316	381
Western Isles	90	342	80	307	91	351	94	366	105	412	92	361	25,320	95	375
Dumfries and Galloway	514	361	482	341	506	359	533	379	492	351	429	307	139,126	514	369
Orkney	91	443	67	326	70	341	71	346	89	430	59	284	20,960	74	353
Greater Glasgow and Clyde	4,159	359	3,807	354	4,022	372	3,604	331	3,453	314	3,497	316	1,109,806	3,725	336
Grampian	1,995	364	1,710	309	1,706	306	1,551	277	1,530	273	1,601	287	554,960	1,845	332
Borders	385	357	382	354	397	368	358	333	350	325	338	312	108,375	358	330
Tayside	1,352	346	1,314	336	1,411	360	1,437	366	1,224	312	1,190	303	392,095	1,160	296
Lothian	2,303	285	2,096	258	2,067	252	2,445	295	2,436	290	2,339	276	855,120	2,494	292
Shetland	51	230	76	343	77	348	59	267	55	249	47	214	21,849	61	279
<b>Scotland</b>	<b>17,853</b>	<b>353</b>	<b>16,379</b>	<b>324</b>	<b>17,051</b>	<b>336</b>	<b>16,973</b>	<b>334</b>	<b>16,216</b>	<b>317</b>	<b>15,980</b>	<b>312</b>	<b>5,133,725</b>	<b>18,530</b>	<b>361</b>

Note: This table is deliberately limited to only 7 years of information due to limited space.

**Table 69 Type 2 diabetes: Crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by descending rate in 2019, Scotland 2011-2019.**

NHS board	2011	2012	2013	2014	2015	2016	2017	2018	2019
Lanarkshire	369	390	405	329	384	368	318	329	459
Highland	340	348	336	271	298	341	341	343	454
Forth Valley	313	373	345	297	346	355	365	316	435
Fife	355	390	402	394	310	324	336	319	403
Ayrshire and Arran	444	453	373	367	389	394	361	370	381
Western Isles	284	302	342	307	351	366	412	361	375
Dumfries and Galloway	408	402	361	341	359	379	351	307	369
Orkney	443	318	443	326	341	346	430	284	353
Greater Glasgow and Clyde	331	358	359	354	372	331	314	316	336
Grampian	303	351	364	309	306	277	273	287	332
Borders	357	416	357	354	368	333	325	312	330
Tayside	403	373	346	336	360	366	312	303	296
Lothian	272	279	285	258	252	295	290	276	292
Shetland	382	237	230	343	348	267	249	214	279
<b>Scotland</b>	<b>340</b>	<b>360</b>	<b>353</b>	<b>324</b>	<b>336</b>	<b>334</b>	<b>317</b>	<b>312</b>	<b>361</b>

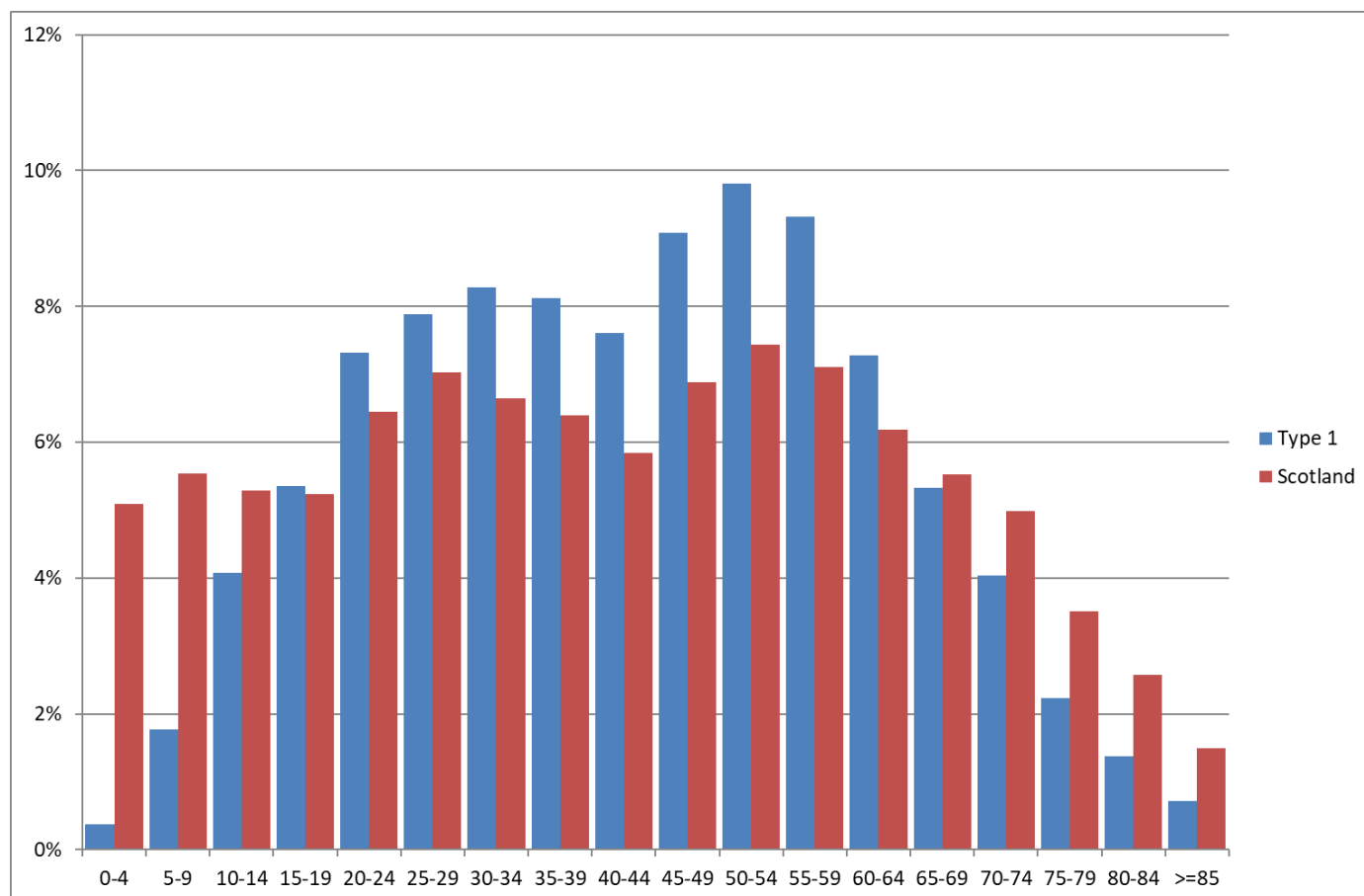
Note: This table is deliberately limited to only 9 years of information due to limited space.



## Age and Sex

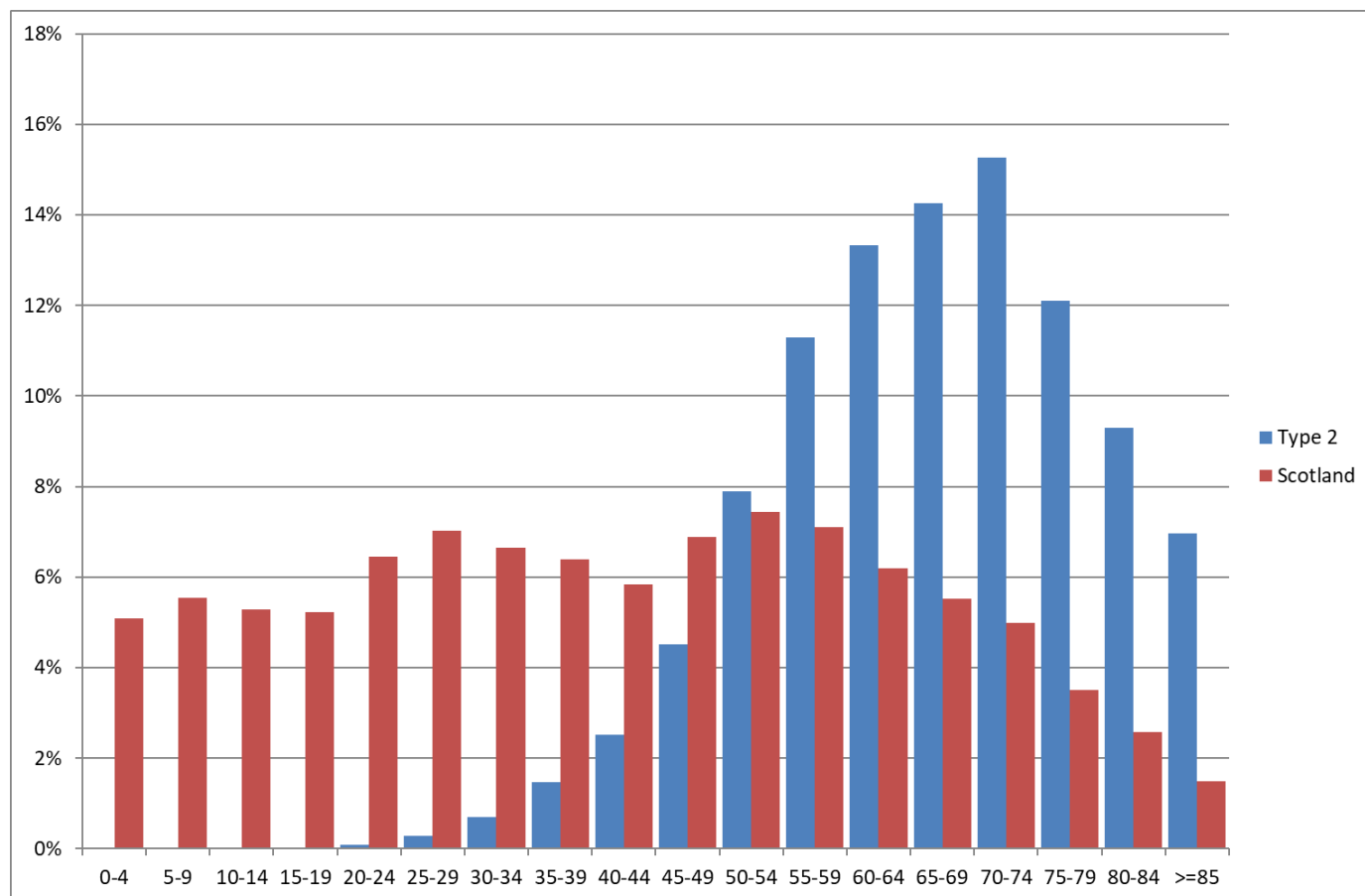
Type 2 diabetes is more common in older people; 52.8% (164,940) of all people with diabetes recorded in the survey are aged 65 years or older (**Error! Reference source not found.**). Figure 51 and Figure 52 show the age distribution of people with type 1 and type 2 diabetes compared with the age distribution of the general population.

**Figure 51 Type 1 diabetes: Age distribution of people recorded as having diabetes compared with the age distribution of general population, Scotland 2019.**



The difference between the age distributions is likely to relate to two factors. The first is the increasing incidence of type 1 diabetes in young people and the second is the recognised decrease of life expectancy of those with type 1 diabetes. A 2015 study of the Scottish type 1 diabetes population (<http://dx.doi.org/10.1001/jama.2014.16425>), using data from SCI-Diabetes, showed that life expectancy, while reduced, is improved compared to older studies.

**Figure 52 Type 2 diabetes: Age distribution of people recorded as having diabetes compared with the age distribution of general population, Scotland 2019.**



**Table 70** Age group of people recorded as having type 1 or type 2 diabetes, percentage in each age group and cumulative percentage in each age group, by diabetes type, Scotland 2019.

Age	Type 1 diabetes			Type 2 diabetes		
	People (n)	%	Cumulative Percentage (%)	People (n)	%	Cumulative Percentage (%)
0-4	126	0.4	0.4	0	0.0	0.0
5-9	592	1.8	2.1	*	0.0	0.0
10-14	1,361	4.1	6.2	*	0.0	0.0
15-19	1,792	5.4	11.6	61	0.0	0.0
20-24	2,447	7.3	18.9	245	0.1	0.1
25-29	2,637	7.9	26.8	777	0.3	0.4
30-34	2,769	8.3	35.1	1,907	0.7	1.1
35-39	2,713	8.1	43.2	4,039	1.5	2.6
40-44	2,542	7.6	50.8	6,901	2.5	5.1
45-49	3,037	9.1	59.9	12,405	4.5	9.6
50-54	3,279	9.8	69.7	21,658	7.9	17.5
55-59	3,117	9.3	79.0	31,001	11.3	28.8
60-64	2,433	7.3	86.3	36,573	13.3	42.1
65-69	1,783	5.3	91.6	39,133	14.3	56.4
70-74	1,351	4.0	95.7	41,894	15.3	71.7
75-79	748	2.2	97.9	33,179	12.1	83.8
80-84	459	1.4	99.3	25,481	9.3	93.0
>=85	241	0.7	100.0	19,081	7.0	100.0
<b>Scotland</b>	<b>33,427</b>	<b>100.0</b>	<b>100.0</b>	<b>274,346</b>	<b>100.0</b>	<b>100.0</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

A greater proportion of those with diagnosed diabetes are male; 55.6% (18,579) of those with type 1 diabetes and 56.4% (154,787) of those with type 2 diabetes. This proportion has remained relatively stable since the survey started in 2001.

## Mortality

**Table 71** The number and crude percentage of those diagnosed with diabetes population (all diabetes types) who have died within the last year, by NHS board, ranked by mortality, Scotland 2019.

NHS board	Deaths	
	n	% of population
Shetland	34	2.8
Lothian	1,557	3.4
Fife	819	3.5
Western Isles	58	3.6
Orkney	47	3.6
Lanarkshire	1,582	3.6
Forth Valley	693	3.7
Greater Glasgow and Clyde	2,544	3.7
Highland	729	3.7
Ayrshire and Arran	976	3.8
Grampian	1,196	3.8
Borders	289	3.9
Tayside	999	4.0
Dumfries and Galloway	423	4.1
<b>Scotland</b>	<b>11,946</b>	<b>3.7</b>

Note: These data were calculated from all people with diabetes who died in the prior year expressed as a percentage of all people with diabetes still alive at the end of the year plus those who died during the year. This does not take account of the fact that as people die during the year the size of the population that remains and is still at risk of death becomes very slightly smaller. As a result, these figures slightly underestimate the true mortality risk. Also, note that comparisons between NHS boards do not account for important differences in age structure which result in higher mortality in boards with older populations.

## Type of Diabetes Regional Detail

**Table 72** Number of people with diabetes and the distribution of diabetes type, by NHS board, ranked by descending percentage with type 2 diabetes, Scotland 2019.

NHS board	Type 1		Type 2		Other types of diabetes	Total
	n	%	n	%		
Ayrshire and Arran	2,399	9.6	22,450	89.8	163	25,012
Orkney	125	10.0	1,115	89.3	9	1,249
Fife	2,268	9.9	20,390	89.2	196	22,854
Tayside	2,301	9.5	21,566	89.2	320	24,187
Dumfries and Galloway	1,018	10.3	8,713	88.5	115	9,846
Greater Glasgow and Clyde	6,724	10.1	58,641	88.4	967	66,332
Forth Valley	1,972	10.8	16,074	88.2	170	18,216
Borders	741	10.5	6,154	87.5	137	7,032
Lanarkshire	4,571	10.9	36,596	87.3	731	41,898
Grampian	3,622	12.0	26,376	87.2	253	30,251
Lothian	5,139	11.7	37,881	86.1	996	44,016
Western Isles	207	13.2	1,353	86.0	13	1,573
Highland	2,213	11.8	16,128	86.0	410	18,751
Shetland	152	13.0	1,005	85.7	16	1,173
<b>Scotland</b>	<b>33,452</b>	<b>10.7</b>	<b>274,442</b>	<b>87.9</b>	<b>4,496</b>	<b>312,390</b>

Note: Percentages (of the total diabetes population) have been calculated for type 1 and type 2 diabetes only.

## Ethnicity

Information on ethnic group was available for 82.3% of the registered population with type 1 and type 2 diabetes (Table 75). The completeness of this information has risen from 69.6% in 2010. Type 2 diabetes is much more common and tends to present at an earlier age in South Asian than White ethnic groups.

**Table 73 Type 1 diabetes: Completeness of recording of ethnic group by NHS board, ranked by decreasing completeness, Scotland 2019.**

NHS board	Ethnic group identified	
	People (n)	Percentage (%)
Dumfries and Galloway	993	97.5
Shetland	148	97.4
Borders	708	95.5
Greater Glasgow and Clyde	6,357	94.5
Forth Valley	1,862	94.4
Fife	2,111	93.1
Lothian	4,773	92.9
Lanarkshire	3,962	86.7
Highland	1,849	83.6
Orkney	102	81.6
Western Isles	165	79.7
Tayside	1,785	77.6
Grampian	2,625	72.5
Ayrshire and Arran	1,679	70.0
<b>Scotland</b>	<b>29,119</b>	<b>87.0</b>

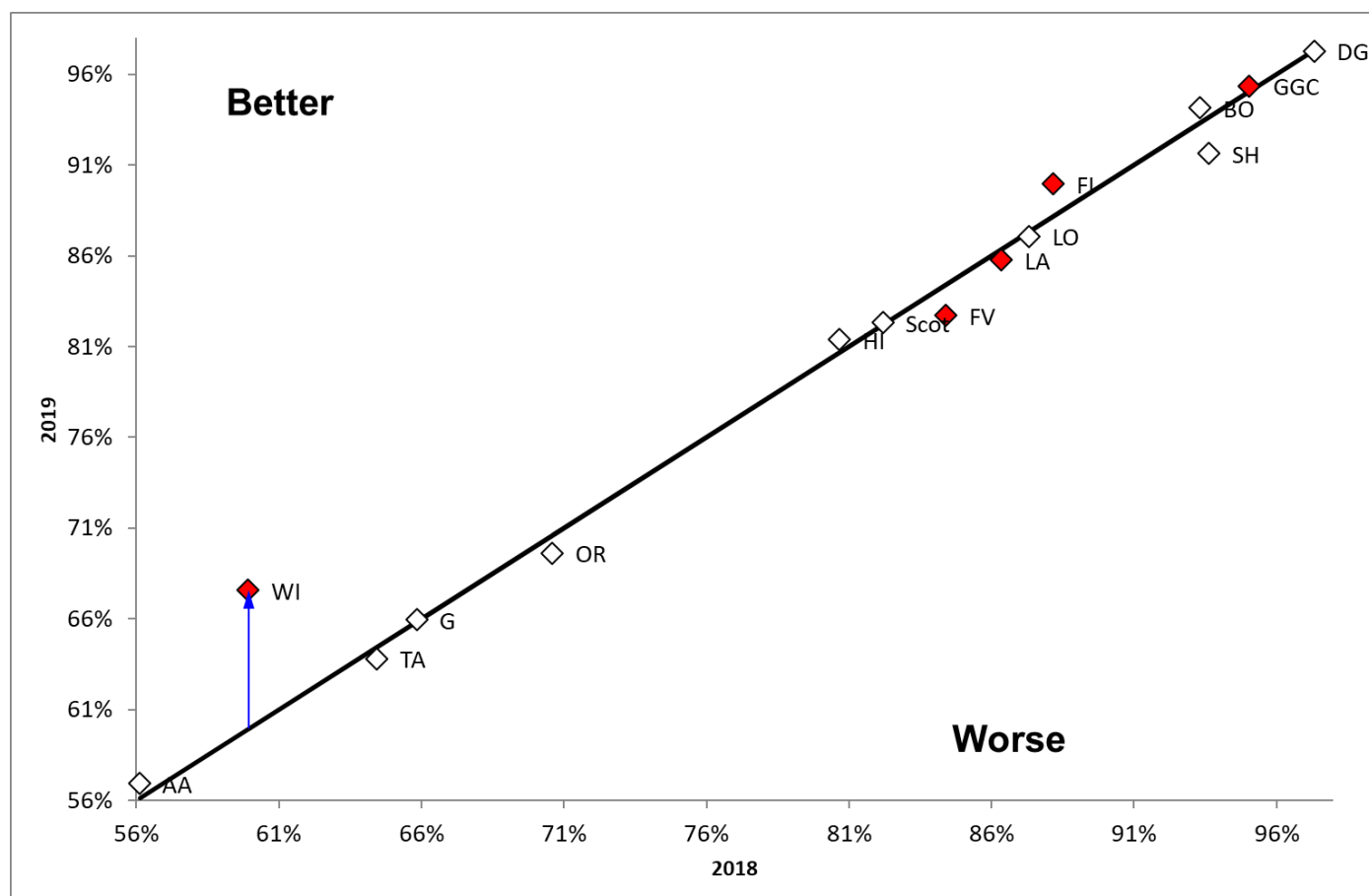
**Table 74 Type 2 diabetes: Completeness of recording of ethnic group by NHS board, ranked by decreasing completeness, Scotland 2019.**

NHS board	Ethnic group identified	
	People (n)	Percentage (%)
Dumfries and Galloway	8,472	97.2
Greater Glasgow and Clyde	55,966	95.4
Borders	5,783	94.0
Shetland	912	90.7
Fife	18,266	89.6
Lothian	32,678	86.3
Lanarkshire	31,344	85.6
Forth Valley	13,061	81.3
Highland	13,071	81.0
Orkney	761	68.3
Western Isles	889	65.7
Grampian	17,152	65.0
Tayside	13,437	62.3
Ayrshire and Arran	12,464	55.5
<b>Scotland</b>	<b>224,256</b>	<b>81.7</b>

**Table 75 Completeness of recording of ethnic group for people with diabetes (type 1 and type 2 combined) by year, Scotland 2010-2019.**

Year	Identified	
	People (n)	%
2019	253,375	82.3
2018	246,969	82.2
2017	241,576	82.0
2016	235,741	81.7
2015	228,993	81.4
2014	222,041	81.1
2013	210,682	79.2
2012	199,587	77.7
2011	190,397	77.5
2010	164,370	69.6

**Figure 53** Completeness of recording of ethnic group for people recorded as having type 1 or type 2 diabetes (combined), Scotland, from 2018 to 2019.



Note: Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019. If any board has changed by more than 4% between 2018 and 2019, arrows showing the direction of change have been added.

### Key

Abbreviation	Health Board	Abbreviation	Health Board	Abbreviation	Health Board
AA	Ayrshire and Arran	G	Grampian	OR	Orkney
BO	Borders	GGC	Greater Glasgow and Clyde	Scot	Scotland
DG	Dumfries and Galloway	HI	Highland	SH	Shetland
FI	Fife	LA	Lanarkshire	TA	Tayside
FV	Forth VALLEY	LO	Lothian	WI	Western Isles



**Table 76 Recorded ethnic group for type 1, type 2 and combined type 1 and type 2 diabetes, Scotland 2019.**

Ethnic group	Type 1 diabetes		Type 2 diabetes		Type 1 and 2	
	People (n)	%	People (n)	%	People (n)	%
A – White	27,729	82.9	204,232	74.4	231,961	75.3
B - Mixed or multiple ethnic groups	661	2.0	6,436	2.3	7,097	2.3
C - Asian, Asian Scottish or Asian British	404	1.2	10,482	3.8	10,886	3.5
D - African, Caribbean or Black	141	0.4	1,368	0.5	1,509	0.5
E - Other ethnic group	184	0.6	1,738	0.6	1,922	0.6
Not recorded	4,333	13.0	50,186	18.3	54,519	17.7

## Duration of Type 2 Diabetes

The date of diagnosis was recorded for 99.1% of people with either type 1 or type 2 diabetes, of whom 6.3% have had diabetes for less than one year and 12.6% have had diabetes for 20 years or more (Table 77). It should be noted that not all dates of diagnosis are accurate, especially for those with long-standing diabetes.

**Table 77 Duration of diabetes (years since diagnosis) by type of diabetes for people with type 1 or type 2 diabetes, Scotland 2019.**

Duration (Years)	Type 1 diabetes		Type 2 diabetes		Type 1 and Type 2	
	People (n)	%	People (n)	%	People (n)	Total %
<1	1,019	3.1	18,342	6.7	19,361	6.3
1-4	3,887	11.8	63,519	23.4	67,406	22.1
5-9	4,771	14.4	72,707	26.7	77,478	25.4
10-14	4,352	13.2	56,323	20.7	60,675	19.9
15-19	4,313	13.0	37,460	13.8	41,773	13.7
20-24	3,620	11.0	14,637	5.4	18,257	6.0
25-29	3,004	9.1	5,623	2.1	8,627	2.8
30-34	2,431	7.4	2,110	0.8	4,541	1.5
34-39	2,003	6.1	696	0.3	2,699	0.9
40-44	1,552	4.7	240	0.1	1,792	0.6
45-49	984	3.0	136	0.1	1,120	0.4
>=50	1,116	3.4	145	0.1	1,261	0.4
<b>Total</b>	<b>33,052</b>	<b>100.0</b>	<b>271,938</b>	<b>100.0</b>	<b>304,990</b>	<b>100.0</b>

Note: Excludes people where date of diagnosis not known (type 1 n = 400; type 2 n = 2504). Since 2017, the Scottish Diabetes Survey has taken a more robust approach to validating date of diagnosis of diabetes than earlier surveys, for example by excluding dates of diagnoses incorrectly recorded as prior to the person's date of birth. Consequently, higher numbers and proportions of people have missing data than for previous Surveys.

See the [Duration of Type 1 Diabetes](#) section for information on people with type 1 diabetes.

## Body Mass Index

Body Mass Index (BMI) was recorded for 82.1% of people with type 1 or type 2 diabetes in the previous 15 months (Table 78). This is a decrease from 89.2% recorded in 2012.

**Table 78 Proportion of people with type 1 or type 2 diabetes (combined) with a record of BMI in the previous 15 months, Scotland 2019.**

Year	BMI recorded (%)
2019	82.1
2018	81.8
2017	82.8
2016	84.6
2015	86.5
2014	87.7
2013	88.7
2012	89.2
2011	88.7
2010	82.0

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3237).

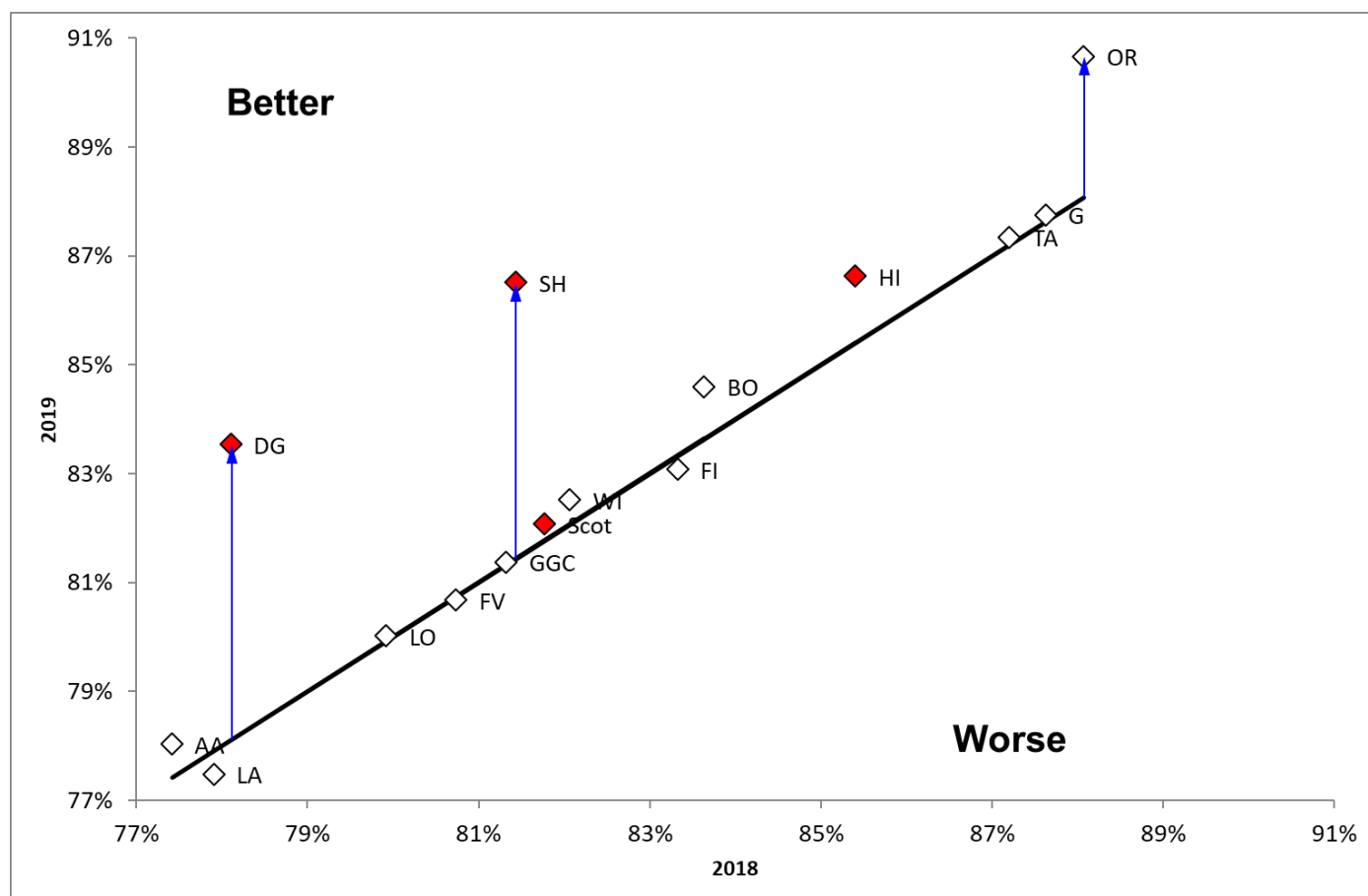
## Body Mass Index Regional Detail

**Table 79** Proportion of people recorded as having type 1 or type 2 diabetes with a record of BMI within the previous 15 months, by NHS board and diabetes type, ranked by decreasing completeness for type 2 diabetes, Scotland 2019.

NHS board	BMI recorded (%)		Total recorded	Total not recorded
	Type 1 diabetes	Type 2 diabetes		
Orkney	94.0	90.3	1,116	115
Grampian	88.9	87.6	26,012	3,633
Tayside	87.3	87.3	20,667	2,997
Highland	83.3	87.0	15,697	2,425
Shetland	92.6	85.7	987	154
Borders	86.1	84.4	5,775	1,052
Dumfries and Galloway	83.9	83.5	8,044	1,586
Western Isles	77.3	83.2	1,269	269
Fife	85.6	82.8	18,634	3,799
Greater Glasgow and Clyde	83.4	81.2	52,690	12,066
Forth Valley	82.4	80.5	14,393	3,450
Lothian	82.6	79.7	34,080	8,514
Ayrshire and Arran	76.7	78.1	19,201	5,409
Lanarkshire	80.9	77.1	31,472	9,151
<b>Scotland</b>	<b>83.5</b>	<b>81.9</b>	<b>250,037</b>	<b>54,620</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (type 1 n = 3095, type 2 n = 142)

**Figure 54** Proportion of people recorded as having type 1 or type 2 diabetes (combined) who had a record of BMI, Scotland, from 2018 to 2019.



Note: Arrows showing the direction of change have been added for all boards with more than 1.5% change between 2018 and 2019. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

**Table 80 Type 1 diabetes: Percentage of people with a record of BMI in the last 15 months grouped by BMI category, NHS board and ranked from low to high by percentage with BMI  $\geq 40\text{kg/m}^2$ , Scotland 2019.**

NHS board	BMI (kg/m2,%)						Total recorded (n)	Not recorded (n)
	Under-weight	Normal	Over-weight	Obese				
	<18.5	18.5-24.9	25-29.9	30-34.9	35-39.9	≥40		
Shetland	0.8	36.5	34.1	17.5	10.3	0.8	126	10
Western Isles	1.4	31.5	37.8	19.6	7.7	2.1	143	42
Forth Valley	1.4	34.2	36.8	18.3	7.1	2.3	1,458	311
Greater Glasgow and Clyde	2.1	36.2	36.5	16.9	5.8	2.6	5,115	1,020
Lothian	1.6	36.9	36.4	16.8	5.6	2.7	3,910	825
Orkney	0.9	33.0	37.6	17.4	8.3	2.8	109	7
Dumfries and Galloway	1.6	35.1	34.2	19.5	6.9	2.8	773	148
Tayside	1.8	33.2	36.3	20.3	5.4	2.9	1,835	266
Highland	1.5	32.3	38.8	19.1	5.3	3.0	1,666	333
Ayrshire and Arran	2.1	32.3	36.7	19.5	6.5	3.1	1,658	504
Borders	1.5	28.2	36.7	21.9	8.6	3.1	581	94
Grampian	0.9	32.4	39.0	18.3	5.9	3.5	2,909	364
Lanarkshire	2.1	31.8	35.7	20.0	6.9	3.5	3,312	784
Fife	1.6	31.4	36.6	20.8	5.8	3.9	1,759	295
Scotland	1.7	33.9	36.8	18.6	6.1	3.0	25,354	5,003

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3095).

Of people with type 1 or type 2 diabetes and a record of BMI (Table 80 and Table 81), 32.3% were overweight (BMI 25-29.9kg/m<sup>2</sup>) and 52.6% were obese (BMI 30kg/m<sup>2</sup> or over).

Of people with type 1 diabetes and a record of BMI (Table 80), 36.8% were overweight (BMI 25-29.9kg/m<sup>2</sup>) and 27.7% were obese (BMI 30kg/m<sup>2</sup> or over).

**Table 81 Type 2 diabetes: Percentage of people with a record of BMI in the last 15 months grouped by BMI category, NHS board and ranked from low to high by percentage with BMI  $\geq 40\text{kg/m}^2$ , Scotland 2019.**

NHS board	BMI (kg/m2, %)						Total recorded (n)	Not recorded (n)
	Under-weight	Normal	Over-weight	Obese				
	<18.5	18.5-24.9	25-29.9	30-34.9	35-39.9	≥40		
Greater Glasgow and Clyde	0.5	14.0	33.1	28.7	14.3	9.5	47,575	11,046
Tayside	0.4	12.3	32.4	29.6	15.4	9.9	18,832	2,731
Grampian	0.5	12.4	31.6	29.8	15.5	10.2	23,103	3,269
Borders	0.3	12.8	31.8	28.7	16.1	10.3	5,194	958
Ayrshire and Arran	0.5	12.4	31.0	30.0	15.6	10.5	17,543	4,905
Highland	0.4	11.5	32.6	29.7	15.3	10.5	14,031	2,092
Lothian	0.6	12.9	31.9	28.9	15.0	10.7	30,170	7,689
Lanarkshire	0.6	11.6	30.8	30.5	15.6	10.9	28,160	8,367
Dumfries and Galloway	0.3	11.9	30.7	30.0	16.2	11.0	7,271	1,438
Western Isles	0.2	11.3	30.0	30.9	16.5	11.1	1,126	227
Forth Valley	0.4	10.8	30.9	29.5	16.6	11.8	12,935	3,139
Fife	0.5	10.7	30.0	29.4	16.6	12.8	16,875	3,504
Orkney	0.4	9.5	31.5	29.4	15.9	13.3	1,007	108
Shetland	0.5	8.8	27.8	30.5	18.4	14.1	861	144
Scotland	0.5	12.4	31.7	29.4	15.4	10.6	224,683	49,617

Note: Excludes children under 18 years of age or who have no recorded date of birth (n = 142).

Of people with type 2 diabetes and a record of BMI (Table 81), 31.7% were overweight (BMI 25-29.9kg/m<sup>2</sup>) and 55.4% were obese (BMI 30kg/m<sup>2</sup> or over).

## Glycaemic Control National and Regional Detail

91.1% of people with type 1 or type 2 diabetes had an HbA<sub>1c</sub> recorded in the previous 15 months (Table 82). It should be noted that HbA<sub>1c</sub> is higher in the winter with an average variability of around 6mmol/mol.

**Table 82 Percentage of people recorded as having type 1 or type 2 diabetes (combined) with a record of HbA<sub>1c</sub> in previous 15 months, Scotland 2019.**

Year	Recorded within previous 15 months (%)
2019	91.1
2018	91.0
2017	91.6
2016	92.6
2015	93.5
2014	94.0
2013	93.3
2012	92.1
2011	91.1
2010	91.4

**Table 83 Type 2 diabetes: Number and percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category by year, Scotland 2010-2019.**

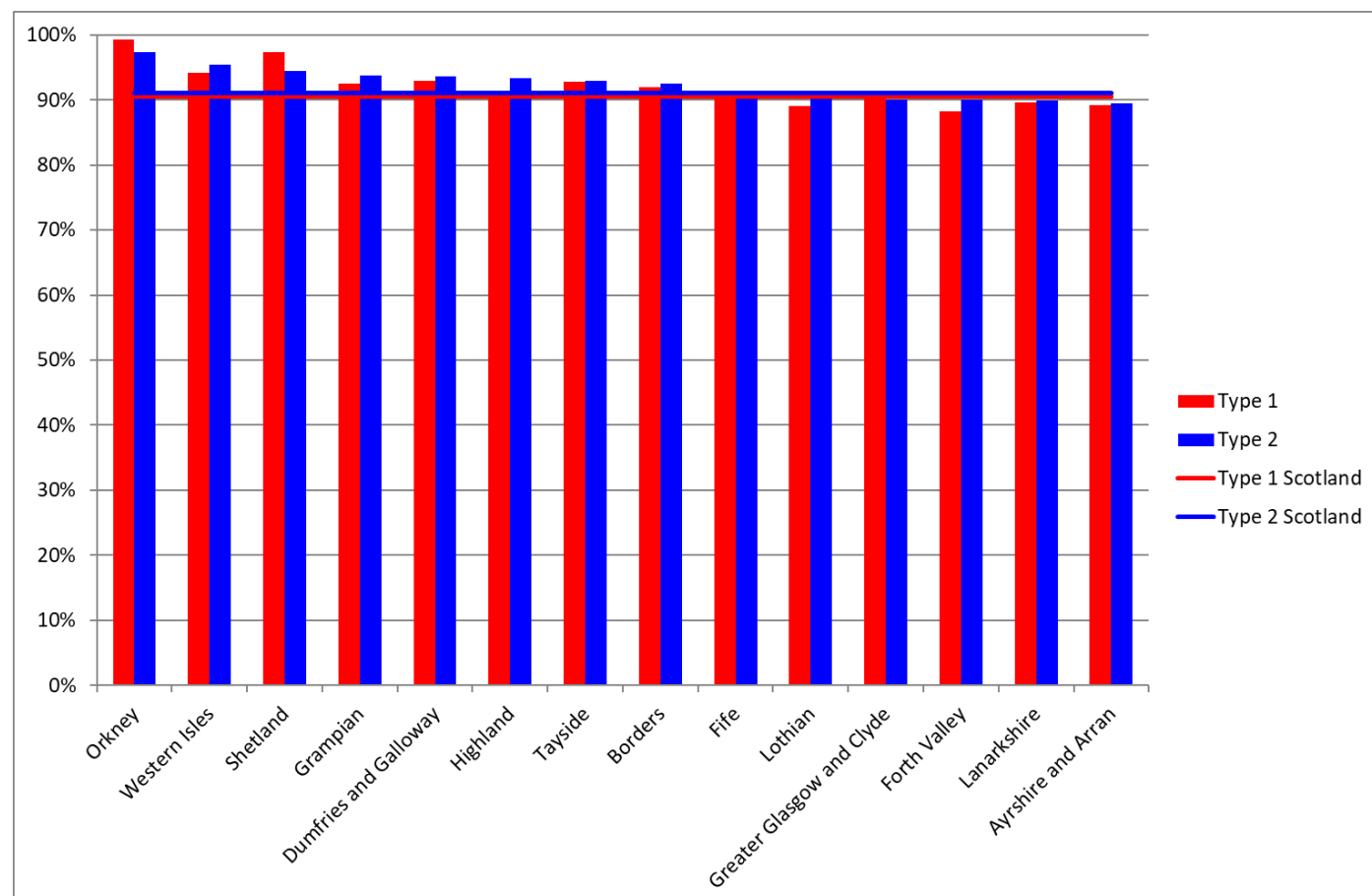
Year	HbA <sub>1c</sub> (mmol/mol)						Total recorded (n)	Not recorded (n)
	< 58		58-75		>75			
	n	%	n	%	n	%		
2019	138,374	55.3	70,314	28.1	41,390	16.6	250,078	24,364
2018	141,143	57.9	64,905	26.6	37,694	15.5	243,742	23,873
2017	141,866	58.7	62,440	25.8	37,306	15.4	241,612	21,659
2016	140,185	58.6	61,832	25.8	37,240	15.6	239,257	18,471
2015	136,132	57.8	61,509	26.1	37,836	16.1	235,477	15,405
2014	141,426	61.4	54,780	23.8	33,981	14.8	230,187	13,863
2013	135,767	61.1	53,972	24.3	32,426	14.6	222,165	14,440
2012	126,141	59.7	52,547	24.8	32,775	15.5	211,463	16,504
2011	123,974	62.1	46,475	23.3	29,177	14.6	199,626	17,888
2010	122,563	64.0	42,603	22.3	26,264	13.7	191,430	16,849

See the [Type 1 Diabetes Glycaemic Control](#) section for information on people with type 1 diabetes.



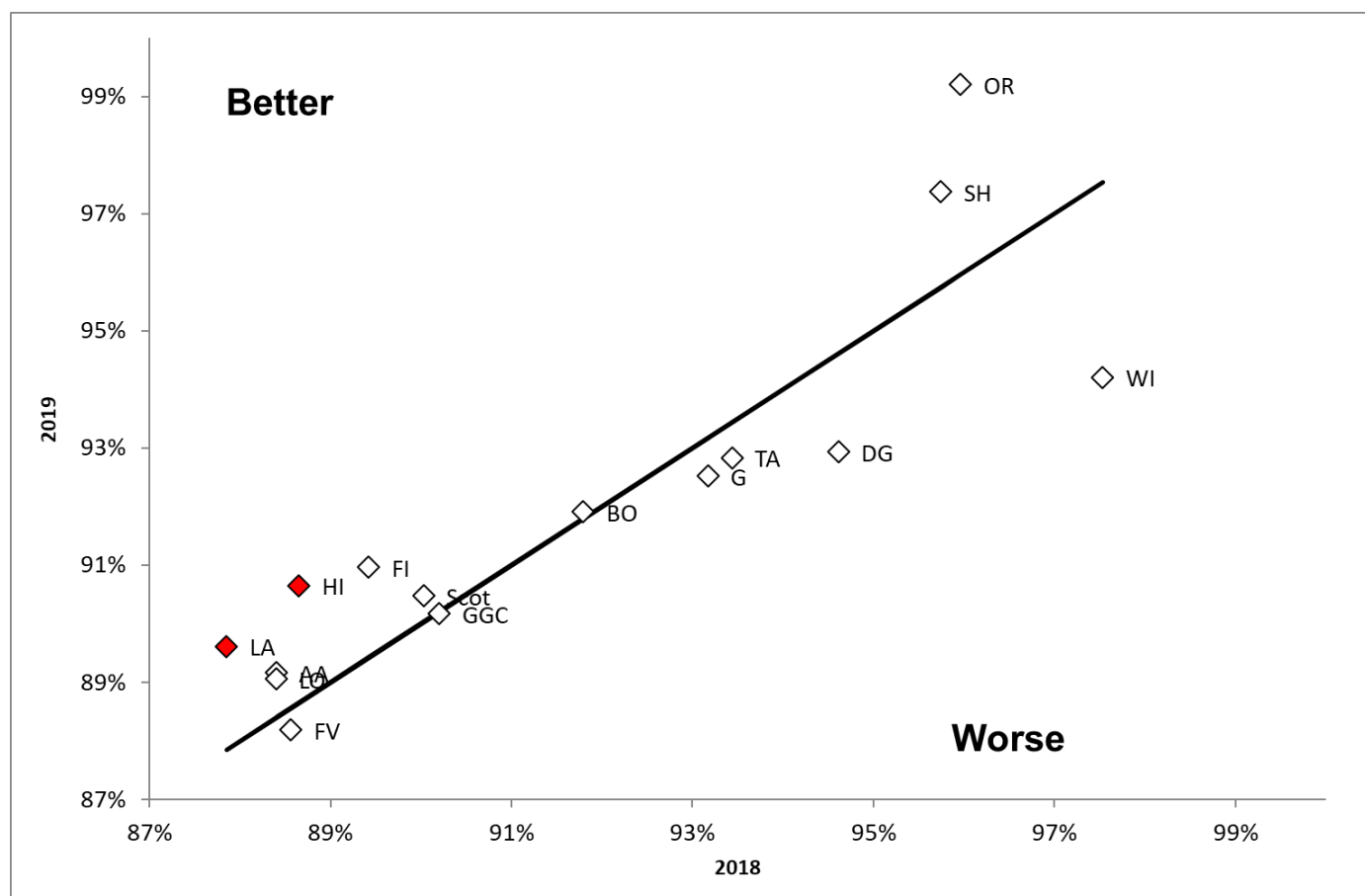
While all laboratories in Scotland are using a standardised (IFCC aligned) HbA<sub>1c</sub> assay, there are some slight differences in actual results between laboratories and some concerns remain about comparability.

**Figure 55** Percentage of people with type 1 or type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by NHS board and diabetes type, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2019.



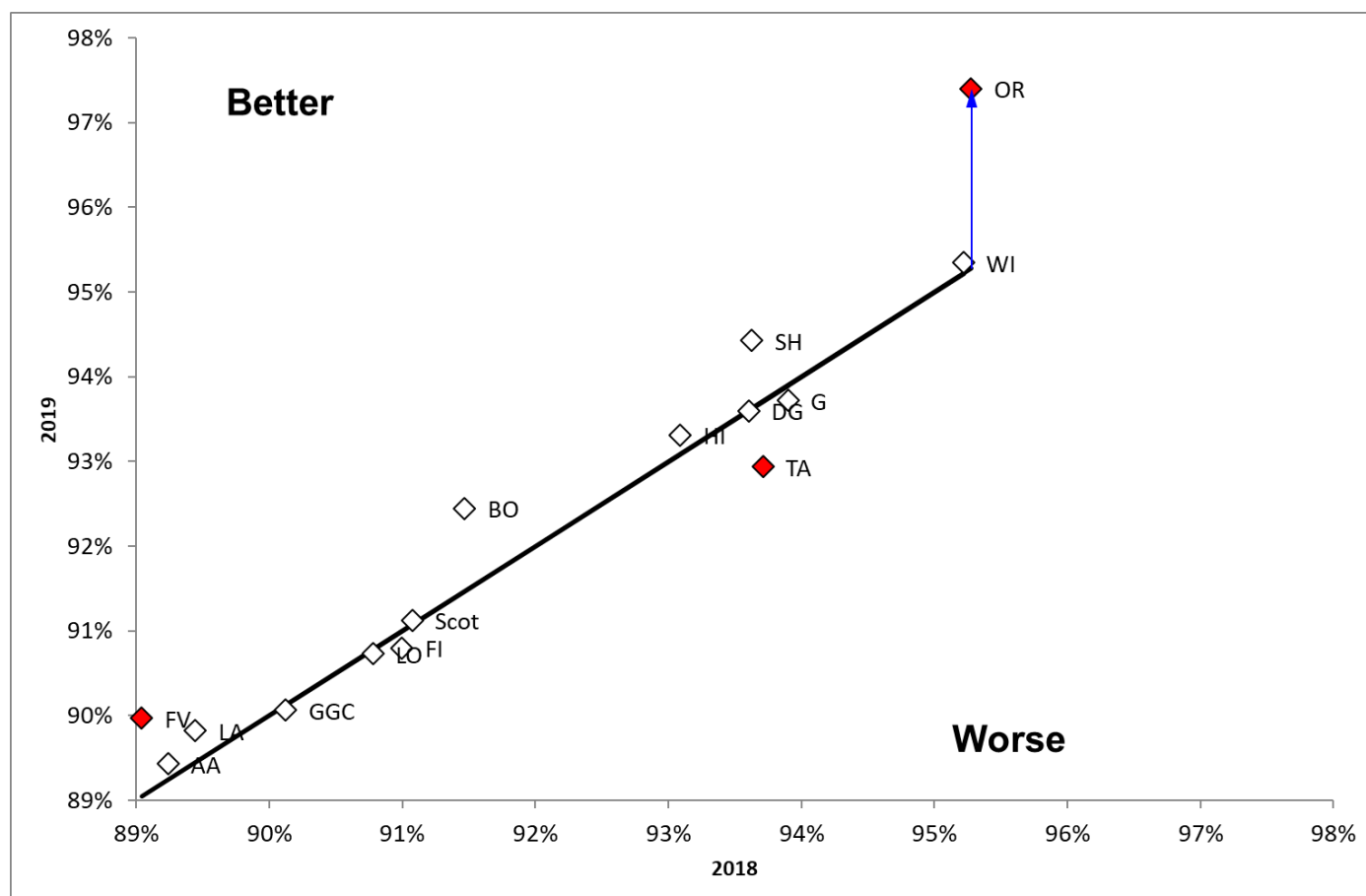
Note: Horizontal lines show figures for Scotland as a whole and bars are ranked by figures for type 2 diabetes

**Figure 56** Proportion of people with type 1 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by health board, Scotland, from 2018 to 2019.



Note: Arrows showing the direction of change have been added for all boards with more than 3.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

**Figure 57** Proportion of people with type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by health board, Scotland, from 2018 to 2019.

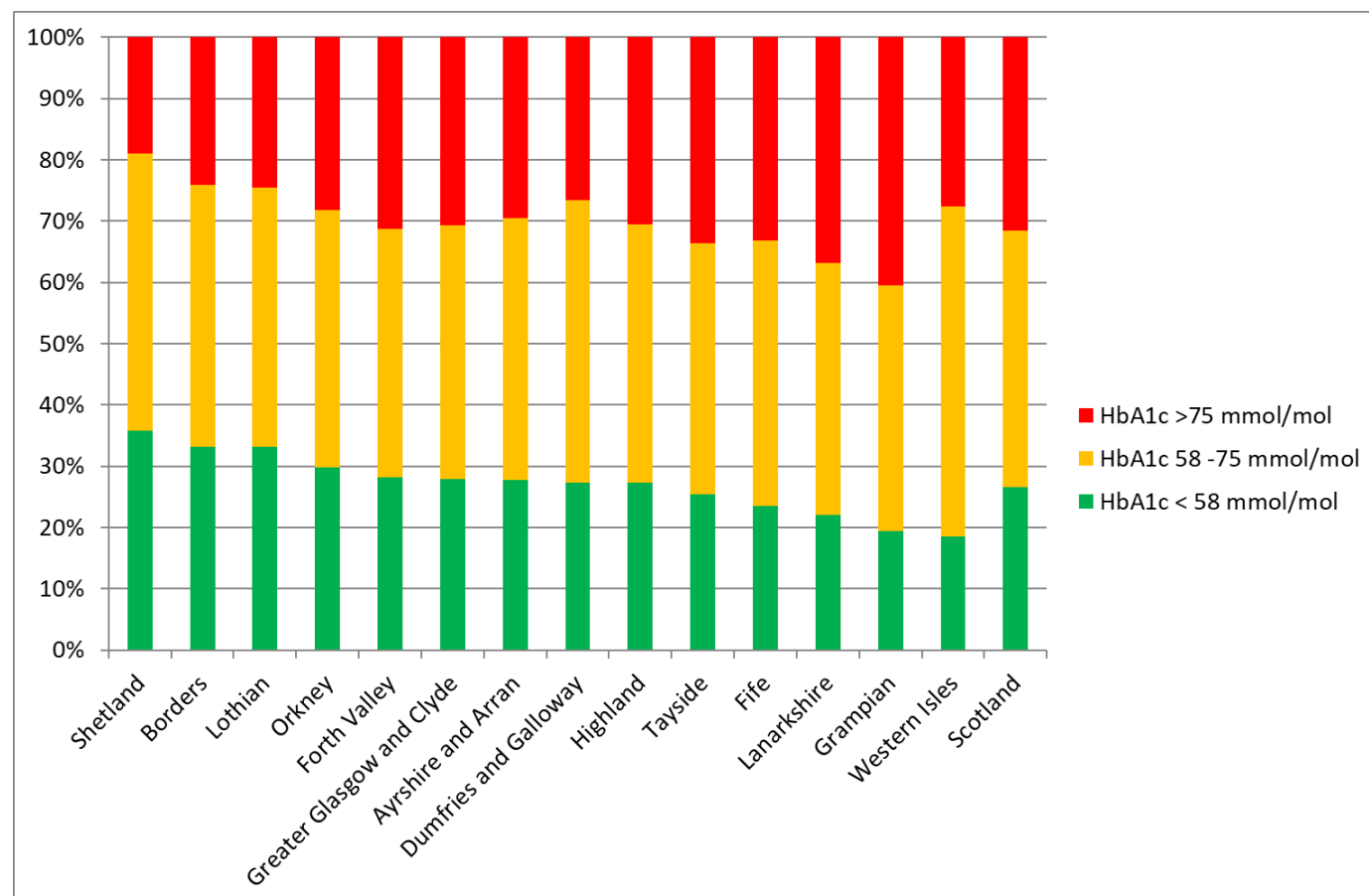


Note: Arrows showing the direction of change have been added for all boards with more than 1.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

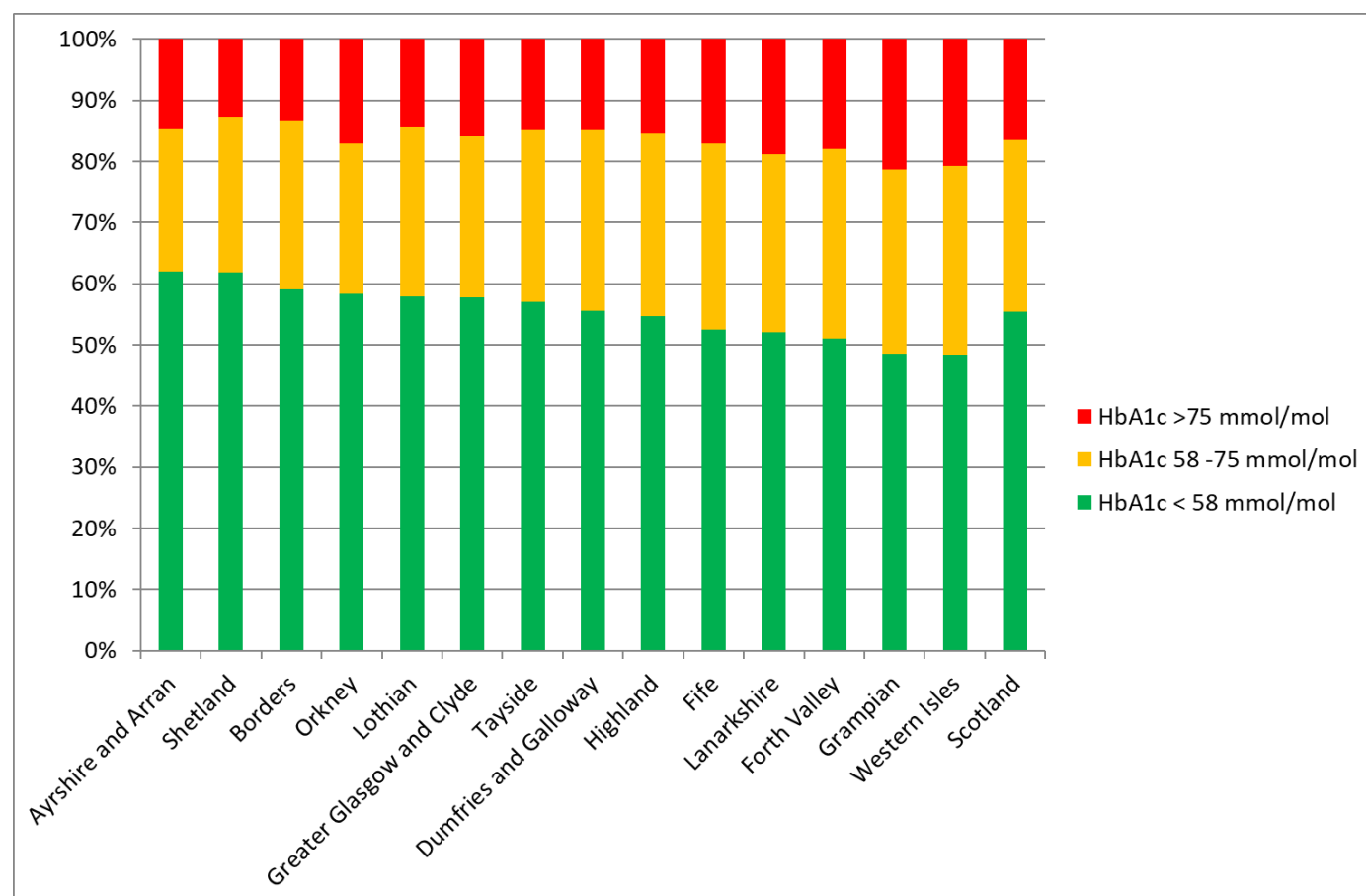
**Table 84** Number and percentage of people with type 1 or type 2 diabetes with a record of HbA1c within the previous 15 months, by diabetes type and NHS board, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2019.

NHS board	Type 1 diabetes			Type 2 diabetes		
	Recorded within previous 15 months		Not recorded (n)	Recorded within previous 15 months		Not recorded (n)
	N	%		n	%	
Orkney	*	*	*	1,086	97.4	29
Western Isles	195	94.2	12	1,290	95.3	63
Shetland	*	*	*	949	94.4	56
Grampian	3,351	92.5	271	24,718	93.7	1,658
Dumfries and Galloway	946	92.9	72	8,155	93.6	558
Highland	2,006	90.6	207	15,049	93.3	1,079
Tayside	2,136	92.8	165	20,042	92.9	1,524
Borders	681	91.9	60	5,689	92.4	465
Fife	2,063	91.0	205	18,513	90.8	1,877
Lothian	4,576	89.0	563	34,367	90.7	3,514
Greater Glasgow and Clyde	6,063	90.2	661	52,814	90.1	5,827
Forth Valley	1,739	88.2	233	14,461	90.0	1,613
Lanarkshire	4,096	89.6	475	32,869	89.8	3,727
Ayrshire and Arran	2,139	89.2	260	20,076	89.4	2,374
<b>Scotland</b>	<b>30,263</b>	<b>90.5</b>	<b>3,189</b>	<b>250,078</b>	<b>91.1</b>	<b>24,364</b>

**Figure 58 Type 1 diabetes: Percentage of people with a recorded HbA<sub>1c</sub>, in each HbA<sub>1c</sub> category for HbA<sub>1c</sub> recorded in the previous 15 months, by NHS board, ranked by decreasing percentage of those with a recoded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2019.**



**Figure 59 Type 2 diabetes: Percentage of people with a recorded HbA<sub>1c</sub>, in each HbA<sub>1c</sub> category for HbA<sub>1c</sub> recorded in the previous 15 months, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2019.**



In 52.2% of people with type 1 or type 2 diabetes with a recorded result, HbA<sub>1c</sub> was less than 58mmol/mol, although this proportion differed by type of diabetes (Table 85 and Table 86).

**Table 85 Type 1 diabetes: HbA<sub>1c</sub> category as a percentage of people with HbA<sub>1c</sub> recorded in previous 15 months, by NHS board, ranked from high to low by percentage with HbA<sub>1c</sub> under 58mmol/mol, Scotland 2019.**

NHS board	HbA <sub>1c</sub> (mmol/mol)						Total recorded (n)	Not recorded (n)
	< 58		58-75		>75			
	n	%	n	%	n	%		
Shetland	53	35.8	*	*	28	18.9	*	*
Borders	226	33.2	291	42.7	164	24.1	681	60
Lothian	1,517	33.2	1,938	42.4	1,121	24.5	4,576	563
Orkney	37	29.8	*	*	35	28.2	*	*
Forth Valley	491	28.2	703	40.4	545	31.3	1,739	233
Greater Glasgow and Clyde	1,688	27.8	2,516	41.5	1,859	30.7	6,063	661
Ayrshire and Arran	595	27.8	912	42.6	632	29.5	2,139	260
Dumfries and Galloway	259	27.4	436	46.1	251	26.5	946	72
Highland	548	27.3	846	42.2	612	30.5	2,006	207
Tayside	544	25.5	873	40.9	719	33.7	2,136	165
Fife	484	23.5	894	43.3	685	33.2	2,063	205
Lanarkshire	900	22.0	1,689	41.2	1,507	36.8	4,096	475
Grampian	649	19.4	1,344	40.1	1,358	40.5	3,351	271
Western Isles	36	18.5	105	53.8	54	27.7	195	12
Scotland	8,027	26.5	12,666	41.9	9,570	31.6	30,263	3,189

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Table 86 Type 2 diabetes: HbA<sub>1c</sub> category as percentage of people with HbA<sub>1c</sub> recorded in previous 15 months, by NHS board, ranked from high to low by percentage with HbA<sub>1c</sub> under 58mmol/mol, Scotland 2019.**

NHS board	HbA <sub>1c</sub> (mmol/mol)						Total recorded (n)	Not recorded (n)
	< 58		58 -75		>75			
	N	%	n	%	n	%		
Ayrshire and Arran	12,433	61.9	4,696	23.4	2,947	14.7	20,076	2,374
Shetland	587	61.9	242	25.5	120	12.6	949	56
Borders	3,356	59.0	1,578	27.7	755	13.3	5,689	465
Orkney	633	58.3	267	24.6	186	17.1	1,086	29
Lothian	19,907	57.9	9,472	27.6	4,988	14.5	34,367	3,514
Greater Glasgow and Clyde	30,461	57.7	13,957	26.4	8,396	15.9	52,814	5,827
Tayside	11,438	57.1	5,633	28.1	2,971	14.8	20,042	1,524
Dumfries and Galloway	4,534	55.6	2,406	29.5	1,215	14.9	8,155	558
Highland	8,229	54.7	4,490	29.8	2,330	15.5	15,049	1,079
Fife	9,708	52.4	5,630	30.4	3,175	17.2	18,513	1,877
Lanarkshire	17,112	52.1	9,572	29.1	6,185	18.8	32,869	3,727
Forth Valley	7,372	51.0	4,491	31.1	2,598	18.0	14,461	1,613
Grampian	11,980	48.5	7,482	30.3	5,256	21.3	24,718	1,658
Western Isles	624	48.4	398	30.9	268	20.8	1,290	63
Scotland	138,374	55.3	70,314	28.1	41,390	16.6	250,078	24,364



**Table 87 Type 1 diabetes: HbA<sub>1c</sub> category as percent of all those with HbA<sub>1c</sub> recorded in the previous 15 months (HbA<sub>1c</sub> in mmol/mol), by NHS board, ranked by percentage with HbA<sub>1c</sub> over 75mmol/mol, Scotland 2019.**

NHS board	HbA <sub>1c</sub> (mmol/mol, %)						Total recorded (n)	Not recorded (n)
	< 53	53-57	58-63	64-68	69-75	> 75		
Shetland	16.9	18.9	17.6	19.6	8.1	18.9	*	*
Borders	19.7	13.5	17.6	11.3	13.8	24.1	681	60
Lothian	18.6	14.6	17.0	13.6	11.7	24.5	4,576	563
Dumfries and Galloway	15.5	11.8	18.3	13.3	14.5	26.5	946	72
Western Isles	11.3	7.2	20.5	12.3	21.0	27.7	195	12
Orkney	16.9	12.9	16.9	12.1	12.9	28.2	*	*
Ayrshire and Arran	16.0	11.8	17.1	13.3	12.2	29.5	2,139	260
Highland	14.9	12.4	16.8	12.7	12.6	30.5	2,006	207
Greater Glasgow and Clyde	15.7	12.2	16.2	12.6	12.8	30.7	6,063	661
Forth Valley	15.4	12.8	15.1	11.7	13.6	31.3	1,739	233
Fife	13.2	10.2	17.0	13.4	12.9	33.2	2,063	205
Tayside	15.7	9.8	17.1	10.9	12.9	33.7	2,136	165
Lanarkshire	11.9	10.1	14.9	12.8	13.6	36.8	4,096	475
Grampian	10.9	8.5	14.4	12.2	13.5	40.5	3,351	271
<b>Scotland</b>	<b>14.9</b>	<b>11.6</b>	<b>16.2</b>	<b>12.7</b>	<b>12.9</b>	<b>31.6</b>	<b>30,263</b>	<b>3,189</b>

**Table 88 Type 2 diabetes: HbA<sub>1c</sub> category as percent of all those with HbA<sub>1c</sub> recorded in the previous 15 months (HbA<sub>1c</sub> in mmol/mol), by NHS board, ranked by percentage with HbA<sub>1c</sub> over 75 mmol/mol, Scotland 2019.**

NHS board	HbA <sub>1c</sub> (mmol/mol, %)						Total recorded (n)	Not recorded (n)
	< 53	53-57	58-63	64-68	69-75	> 75		
Shetland	47.9	13.9	11.9	8.3	5.3	12.6	949	56
Borders	43.6	15.4	13.5	7.5	6.8	13.3	5,689	465
Lothian	42.3	15.6	13.4	7.8	6.4	14.5	34,367	3,514
Ayrshire and Arran	47.1	14.8	10.6	7.3	5.4	14.7	20,076	2,374
Tayside	41.8	15.3	13.5	7.9	6.7	14.8	20,042	1,524
Dumfries and Galloway	40.5	15.1	14.6	8.5	6.5	14.9	8,155	558
Highland	39.1	15.6	14.2	8.5	7.2	15.5	15,049	1,079
Greater Glasgow and Clyde	43.3	14.4	12.9	7.3	6.2	15.9	52,814	5,827
Orkney	43.6	14.6	11.8	6.7	6.1	17.1	1,086	29
Fife	36.2	16.3	14.4	8.6	7.4	17.2	18,513	1,877
Forth Valley	35.6	15.3	14.6	8.9	7.6	18.0	14,461	1,613
Lanarkshire	36.8	15.3	13.5	8.1	7.5	18.8	32,869	3,727
Western Isles	31.9	16.4	12.6	9.1	9.1	20.8	1,290	63
Grampian	34.0	14.5	13.4	8.8	8.1	21.3	24,718	1,658
<b>Scotland</b>	<b>40.2</b>	<b>15.1</b>	<b>13.3</b>	<b>8.0</b>	<b>6.8</b>	<b>16.6</b>	<b>250,078</b>	<b>24,364</b>

**Table 89 Mean HbA<sub>1c</sub> (mmol/mol) recorded in the previous 15 months, by NHS board, for people with type 1 diabetes by age and for type 2 diabetes (all ages combined), ranked by mean HbA<sub>1c</sub> for those with type 2 diabetes, Scotland 2019.**

NHS board	Type 1 diabetes: Age in years											Type 2 diabetes (all ages)
	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60-79	>79	
Shetland	-	70	57	74	75	74	62	68	63	61	70	57
Ayrshire and Arran	63	61	62	73	74	73	69	69	68	65	63	58
Borders	56	54	61	70	67	69	70	68	66	63	64	58
Dumfries and Galloway	65	60	68	71	83	72	71	67	66	65	67	59
Greater Glasgow and Clyde	65	61	64	72	72	71	68	68	70	67	66	59
Lothian	64	60	61	72	70	65	65	65	67	65	68	59
Orkney	67	-	78	71	84	74	63	66	65	64	71	59
Tayside	65	63	67	76	73	75	70	69	69	67	71	59
Highland	66	62	59	68	75	73	68	72	67	67	66	60
Fife	56	64	70	80	74	74	70	69	71	68	68	61
Forth Valley	60	59	66	76	76	71	69	69	69	67	70	61
Lanarkshire	68	60	65	75	80	74	72	72	71	69	71	61
Grampian	60	60	63	80	82	74	71	73	73	71	76	63
Western Isles	-	62	63	61	72	73	69	69	69	69	72	63

## Cardiovascular Risk National and Regional Detail

### Blood Pressure

83.7% of people with type 1 and 88.6% of people with type 2 diabetes had their BP recorded within the previous 15 months (Table 90). The proportions of people whose blood pressure has been recorded has declined over the last 10 years.

Note: Data from people of all ages are included in these blood pressure figures, in contrast to the processes of care, where there are restrictions.

**Table 90** Number and percentage of people with type 1 or type 2 diabetes with a recorded BP within the previous 15 months, Scotland 2010-2019.

Year	Type 1 diabetes			Type 2 diabetes		
	BP Recorded		Population (n)	BP Recorded		Population (n)
	n	%		n	%	
2019	28,008	83.7	33,452	243,171	88.6	274,442
2018	27,458	83.6	32,828	237,210	88.6	267,615
2017	26,524	84.3	31,447	236,329	89.8	263,271
2016	26,248	84.9	30,899	236,721	91.8	257,728
2015	26,298	86.6	30,356	234,631	93.5	250,881
2014	26,201	87.9	29,802	230,710	94.5	244,050
2013	25,395	86.8	29,261	224,420	94.9	236,605
2012	24,574	85.2	28,849	215,702	94.6	227,967
2011	24,165	85.5	28,272	204,782	94.1	217,514
2010	23,977	85.9	27,910	196,638	94.4	208,279

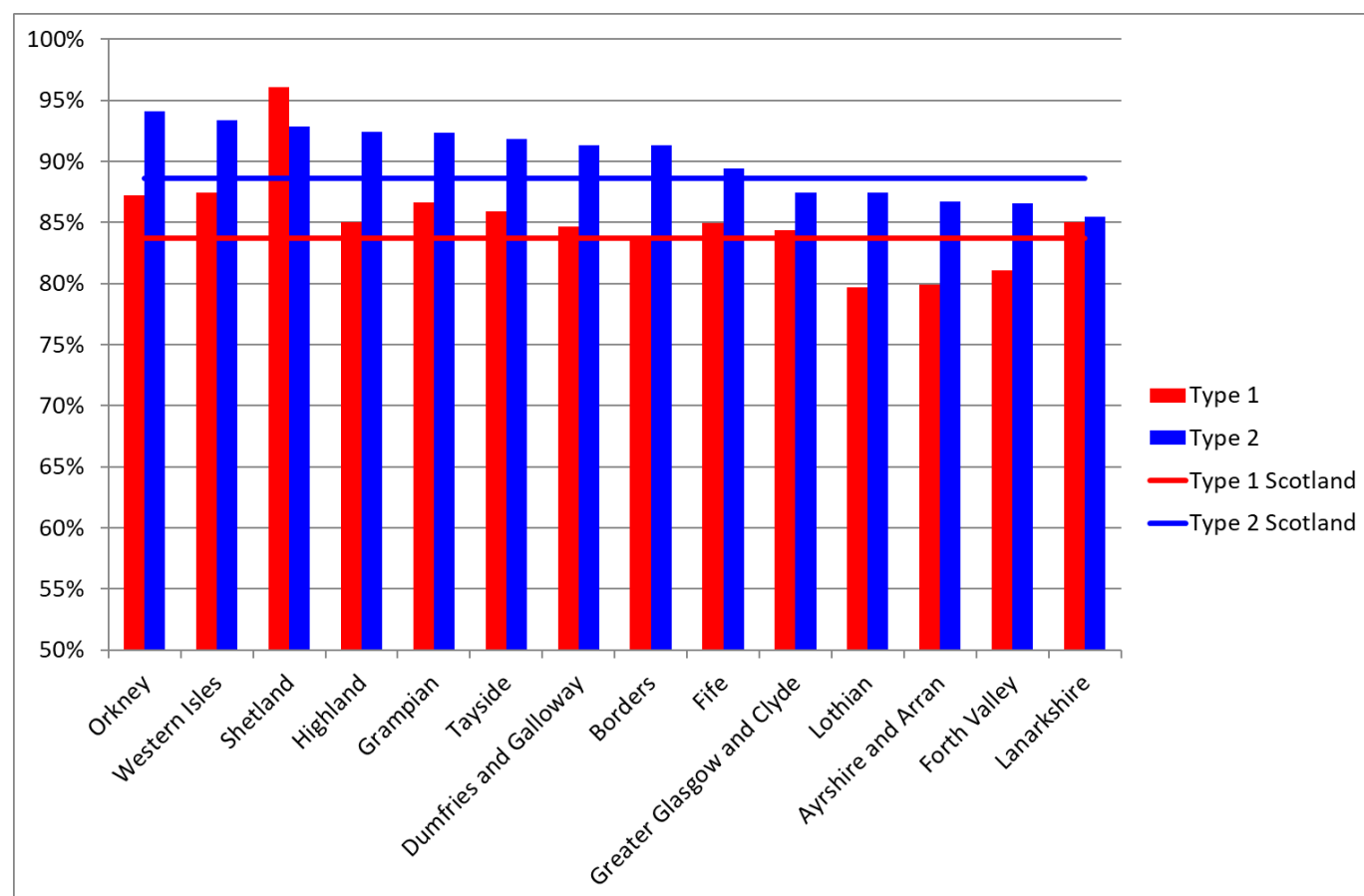
See the [Type 1 Diabetes Blood Pressure](#) section for information on people with type 1 diabetes.

## Blood Pressure Regional Detail

Overall 88.1% of people with type 1 or type 2 diabetes had their BP recorded within the previous 15 months (Table 91). Of those, 74.1% had a systolic BP less than or equal to 140 mmHg (Table 92 and Table 94), suggesting reasonable control of blood pressure. Figures for blood pressure recording by NHS board are shown in Figure 60. Data for blood pressure control for people with type 1 diabetes are shown in Figure 61, Figure 62 and Figure 63 (Table 92 and Table 93) and for people with type 2 diabetes in Figure 64, Figure 65 and Figure 66 (Table 94 and Table 95).

Note: Data from people of all ages are included in these blood pressure figures, in contrast to the processes of care, where there are restrictions.

**Figure 60 Percentage of people with type 1 or type 2 diabetes (by diabetes type) with a recording of BP in the previous 15 months, by NHS board; ranked by figures for type 2, Scotland 2019.**



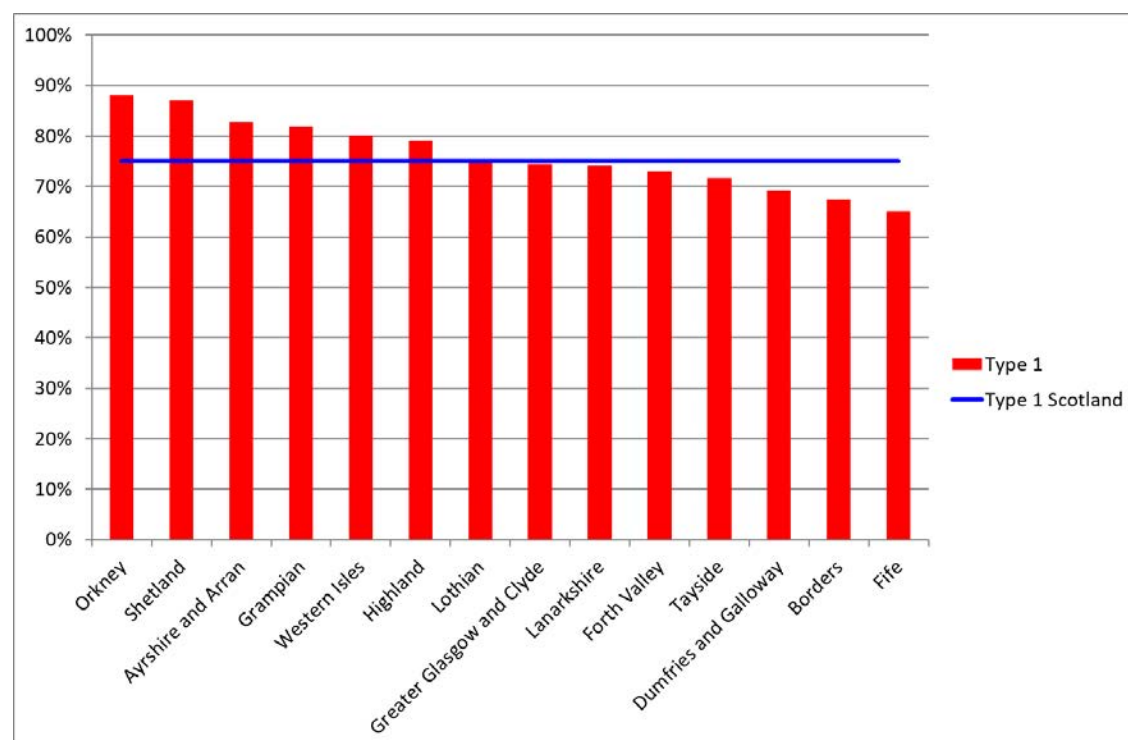
Note: Y axis is interrupted at 50%; Horizontal lines show mean levels for Scotland as a whole.

**Table 91** Number and percentage of people with type 1 and type 2 diabetes with a recording of BP in the previous 15 months, by NHS board and diabetes type, ranked by figures for type 2 diabetes, Scotland 2019.

NHS board	Recorded within previous 15 months			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	109	87.2	1,049	94.1
Western Isles	181	87.4	1,263	93.3
Shetland	146	96.1	933	92.8
Highland	1,881	85.0	14,906	92.4
Grampian	3,138	86.6	24,350	92.3
Tayside	1,976	85.9	19,810	91.9
Dumfries and Galloway	862	84.7	7,955	91.3
Borders	622	83.9	5,618	91.3
Fife	1,926	84.9	18,227	89.4
Greater Glasgow and Clyde	5,673	84.4	51,284	87.5
Lothian	4,093	79.6	33,128	87.5
Ayrshire and Arran	1,917	79.9	19,460	86.7
Forth Valley	1,599	81.1	13,907	86.5
Lanarkshire	3,885	85.0	31,281	85.5
<b>Scotland</b>	<b>28,008</b>	<b>83.7</b>	<b>243,171</b>	<b>88.6</b>

Note: The numbers in this table relate to all ages.

**Figure 61 Type 1 diabetes: Percentage of people with most recent systolic blood pressure (SBP)  $\leq$  140 mmHg in the last 15 months by NHS board, ranked by percentage  $>$  140 mmHg, Scotland 2019.**



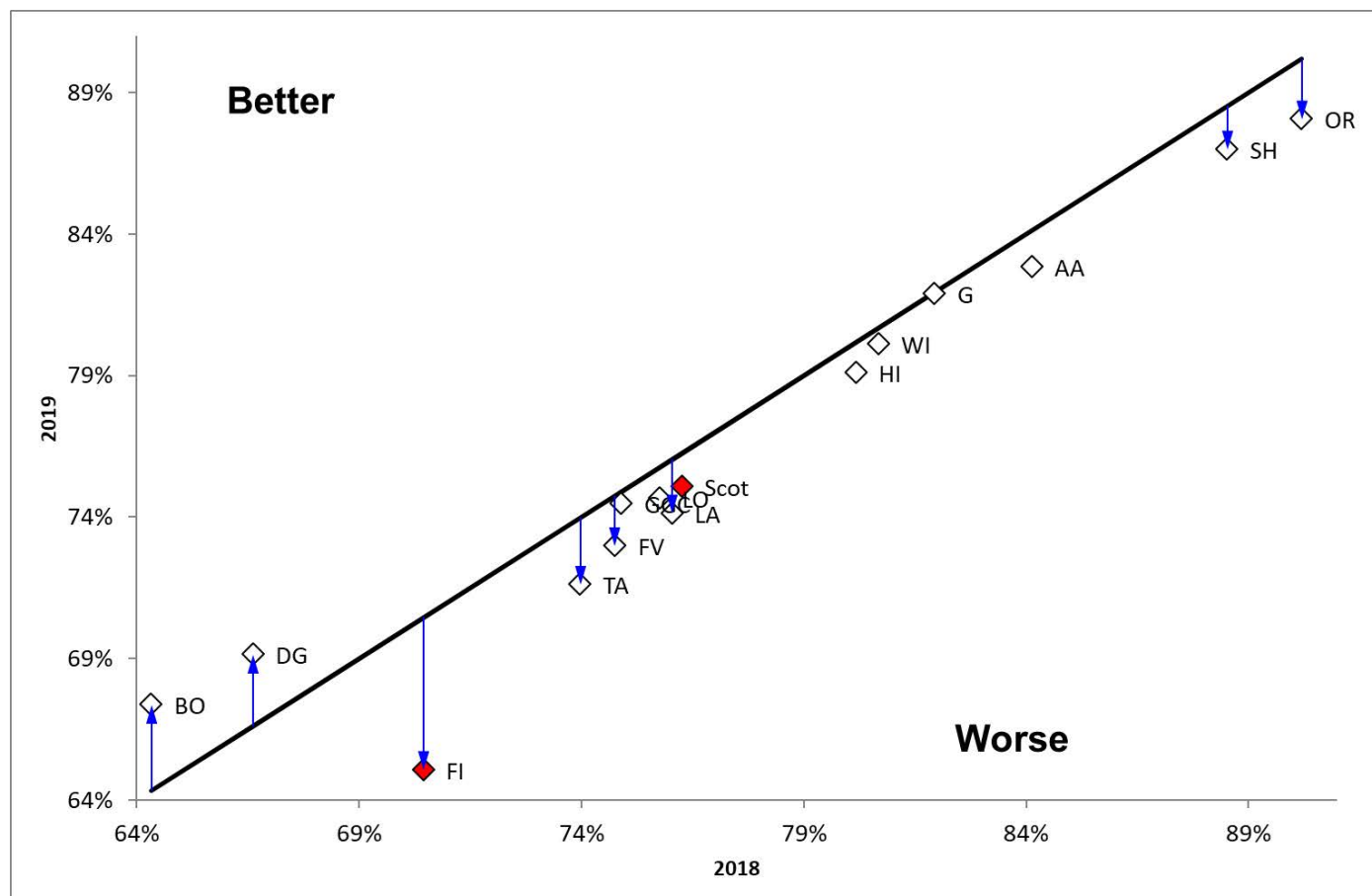
Note: Horizontal line indicates mean level for Scotland as a whole.

**Table 92 Type 1 diabetes: Number and percentage of people with systolic blood pressure (SBP)  $\leq$  140 mmHg by NHS board, ranked by percentage  $>$  140 mmHg, Scotland 2019.**

NHS board	Systolic BP $\leq$ 140		Systolic BP $>$ 140		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Orkney	96	88.1	13	11.9	109	16	12.8
Shetland	127	87.0	19	13.0	146	6	3.9
Ayrshire and Arran	1,588	82.8	329	17.2	1,917	482	20.1
Grampian	2,570	81.9	568	18.1	3,138	484	13.4
Western Isles	145	80.1	36	19.9	181	26	12.6
Highland	1,488	79.1	393	20.9	1,881	332	15.0
Lothian	3,056	74.7	1,037	25.3	4,093	1,046	20.4
Greater Glasgow and Clyde	4,225	74.5	1,448	25.5	5,673	1,051	15.6
Lanarkshire	2,880	74.1	1,005	25.9	3,885	686	15.0
Forth Valley	1,167	73.0	432	27.0	1,599	373	18.9
Tayside	1,415	71.6	561	28.4	1,976	325	14.1
Dumfries and Galloway	596	69.1	266	30.9	862	156	15.3
Borders	419	67.4	203	32.6	622	119	16.1
Fife	1,253	65.1	673	34.9	1,926	342	15.1
<b>Scotland</b>	<b>21,025</b>	<b>75.1</b>	<b>6,983</b>	<b>24.9</b>	<b>28,008</b>	<b>5,444</b>	<b>16.3</b>

Note: Restricted to most recent value recorded in the previous 15 months – those with only older results are classed as missing (not recorded).

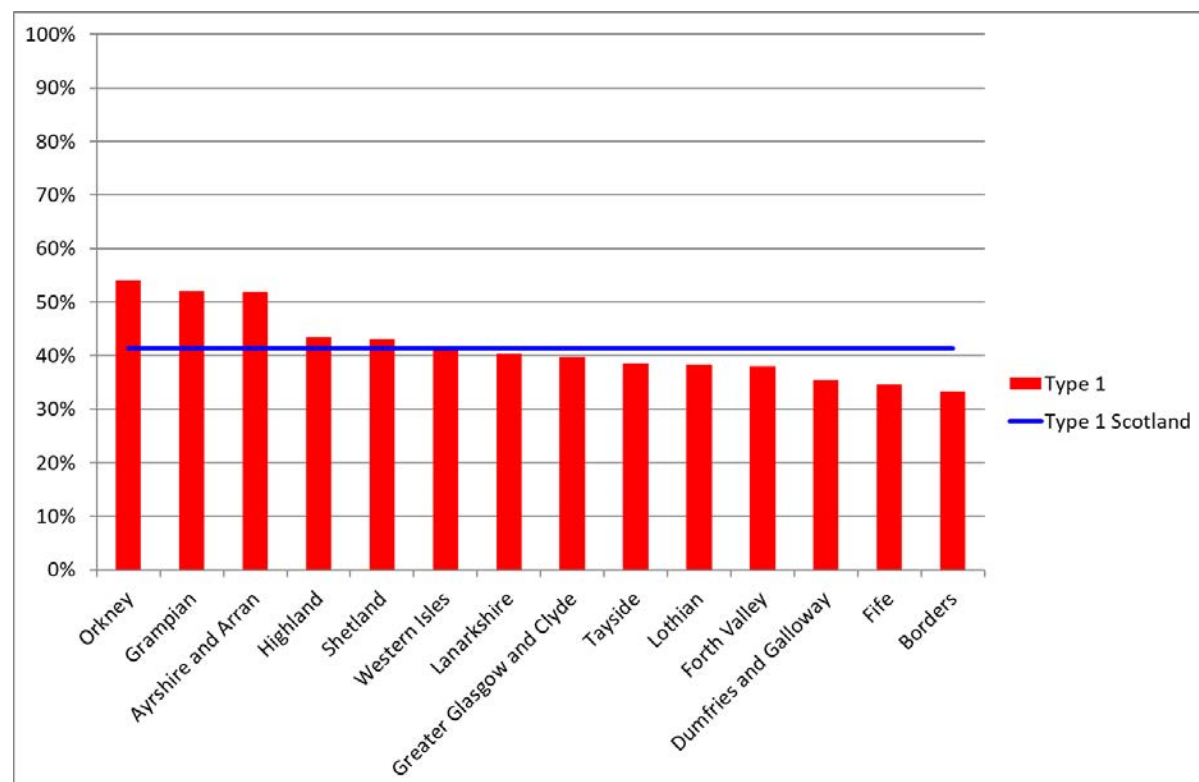
**Figure 62 Type 1 diabetes: Percentage of people with SBP  $\leq$  140 mmHg, Scotland, from 2018 to 2019.**



Note: Arrows showing the direction of change have been added for all boards with more than 2.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.



**Figure 63 Type 1 diabetes: Percentage of people with most recent blood pressure in the last 15 months < 130 mmHg (systolic) and ≤ 80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.**



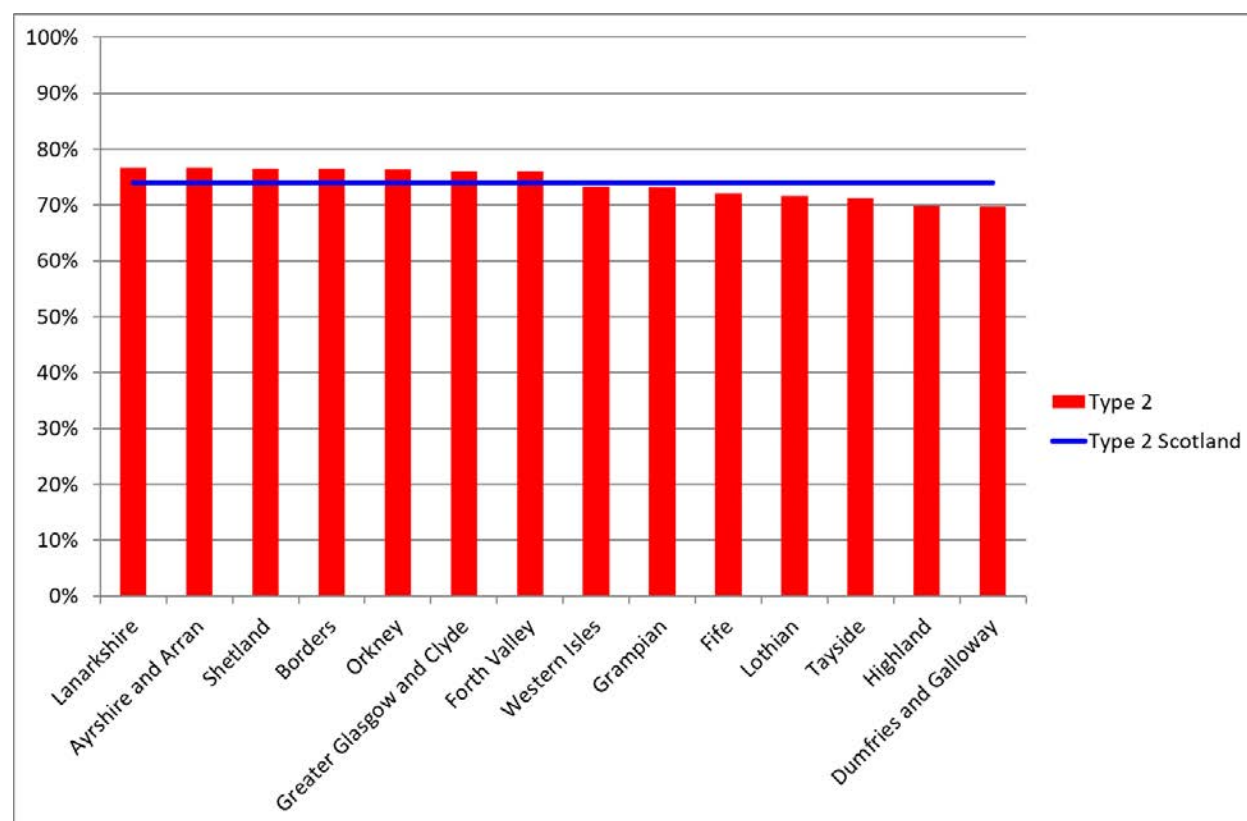
Note: Horizontal line indicates mean level for Scotland as a whole.

**Table 93 Type 1 diabetes: Number and percentage of people most recent blood pressure in the last 15 months < 130 mmHg (systolic) and ≤ 80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.**

NHS board	Met BP target		Did not meet BP target		Total recorded (n)	Not recorded	
	N	%	n	%		n	%
Orkney	59	54.1	50	45.9	109	16	12.8
Grampian	1,633	52.0	1,505	48.0	3,138	484	13.4
Ayrshire and Arran	994	51.9	923	48.1	1,917	482	20.1
Highland	817	43.4	1,064	56.6	1,881	332	15.0
Shetland	63	43.2	83	56.8	146	6	3.9
Western Isles	75	41.4	106	58.6	181	26	12.6
Lanarkshire	1,566	40.3	2,319	59.7	3,885	686	15.0
Greater Glasgow and Clyde	2,257	39.8	3,416	60.2	5,673	1,051	15.6
Tayside	763	38.6	1,213	61.4	1,976	325	14.1
Lothian	1,570	38.4	2,523	61.6	4,093	1,046	20.4
Forth Valley	608	38.0	991	62.0	1,599	373	18.9
Dumfries and Galloway	306	35.5	556	64.5	862	156	15.3
Fife	667	34.6	1,259	65.4	1,926	342	15.1
Borders	207	33.3	415	66.7	622	119	16.1
<b>Scotland</b>	<b>11,585</b>	<b>41.4</b>	<b>16,423</b>	<b>58.6</b>	<b>28,008</b>	<b>5,444</b>	<b>16.3</b>

Note: Those with only results older than 15 months are classed as missing (not recorded).

**Figure 64 Type 2 diabetes: Percentage of people with most recent systolic blood pressure (SBP)  $\leq$  140 mmHg in the last 15 months by NHS board, ranked by percentage  $>$  140 mmHg, Scotland 2019.**



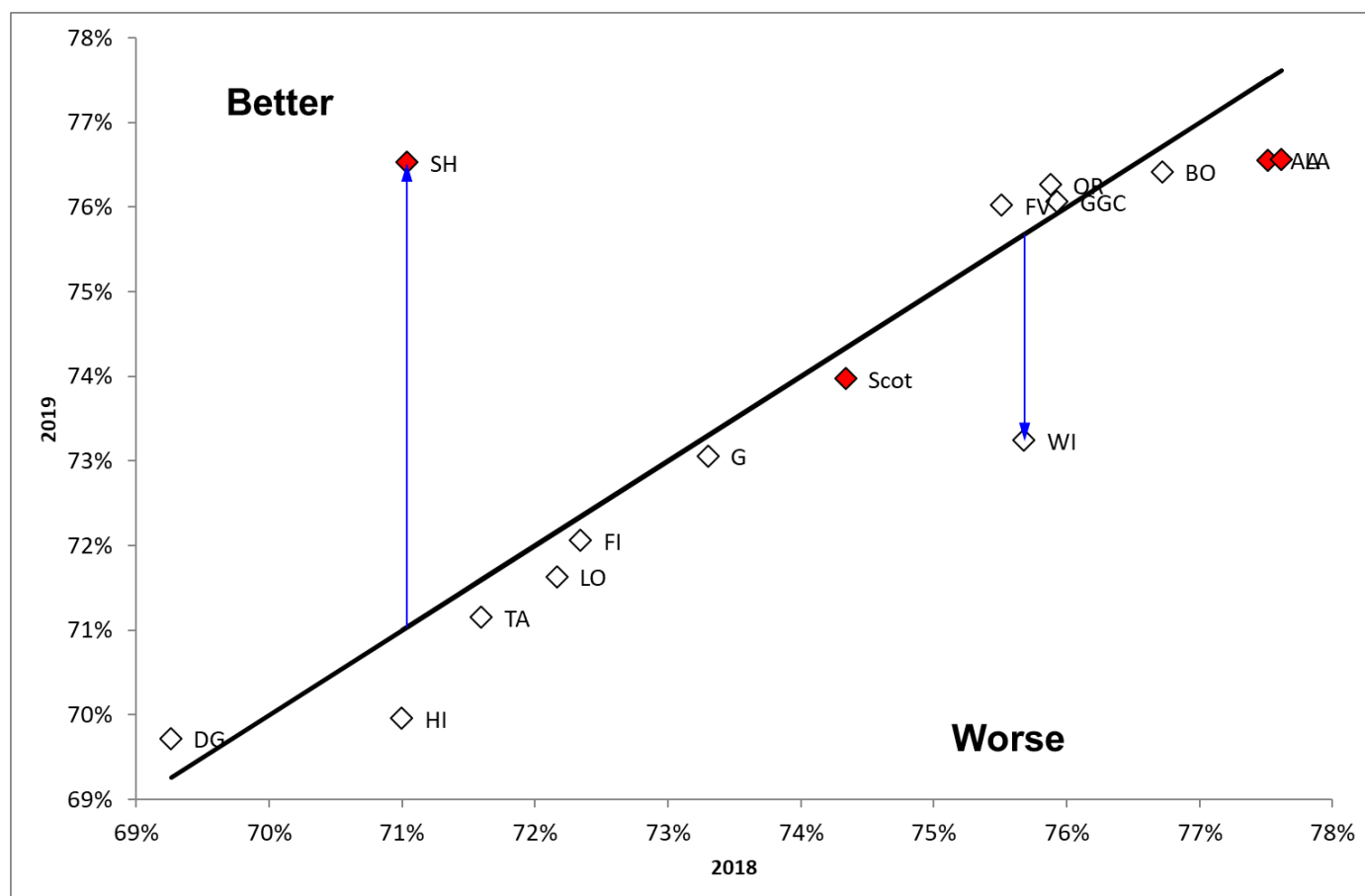
Horizontal line indicates mean level for Scotland as a whole

**Table 94 Type 2 diabetes: Number and percentage of people with systolic blood pressure (SBP)  $\leq$  140 mmHg by NHS board, ranked by percentage  $>$  140 mmHg, Scotland 2019.**

NHS board	BP $\leq$ 140		BP $>$ 140		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Lanarkshire	23,948	76.6	7,333	23.4	31,281	5,315	14.5
Ayrshire and Arran	14,897	76.6	4,563	23.4	19,460	2,990	13.3
Shetland	714	76.5	219	23.5	933	72	7.2
Borders	4,293	76.4	1,325	23.6	5,618	536	8.7
Orkney	800	76.3	249	23.7	1,049	66	5.9
Greater Glasgow and Clyde	39,009	76.1	12,275	23.9	51,284	7,357	12.5
Forth Valley	10,572	76.0	3,335	24.0	13,907	2,167	13.5
Western Isles	925	73.2	338	26.8	1,263	90	6.7
Grampian	17,789	73.1	6,561	26.9	24,350	2,026	7.7
Fife	13,134	72.1	5,093	27.9	18,227	2,163	10.6
Lothian	23,729	71.6	9,399	28.4	33,128	4,753	12.5
Tayside	14,095	71.2	5,715	28.8	19,810	1,756	8.1
Highland	10,427	70.0	4,479	30.0	14,906	1,222	7.6
Dumfries and Galloway	5,546	69.7	2,409	30.3	7,955	758	8.7
<b>Scotland</b>	<b>179,878</b>	<b>74.0</b>	<b>63,293</b>	<b>26.0</b>	<b>243,171</b>	<b>31,271</b>	<b>11.4</b>

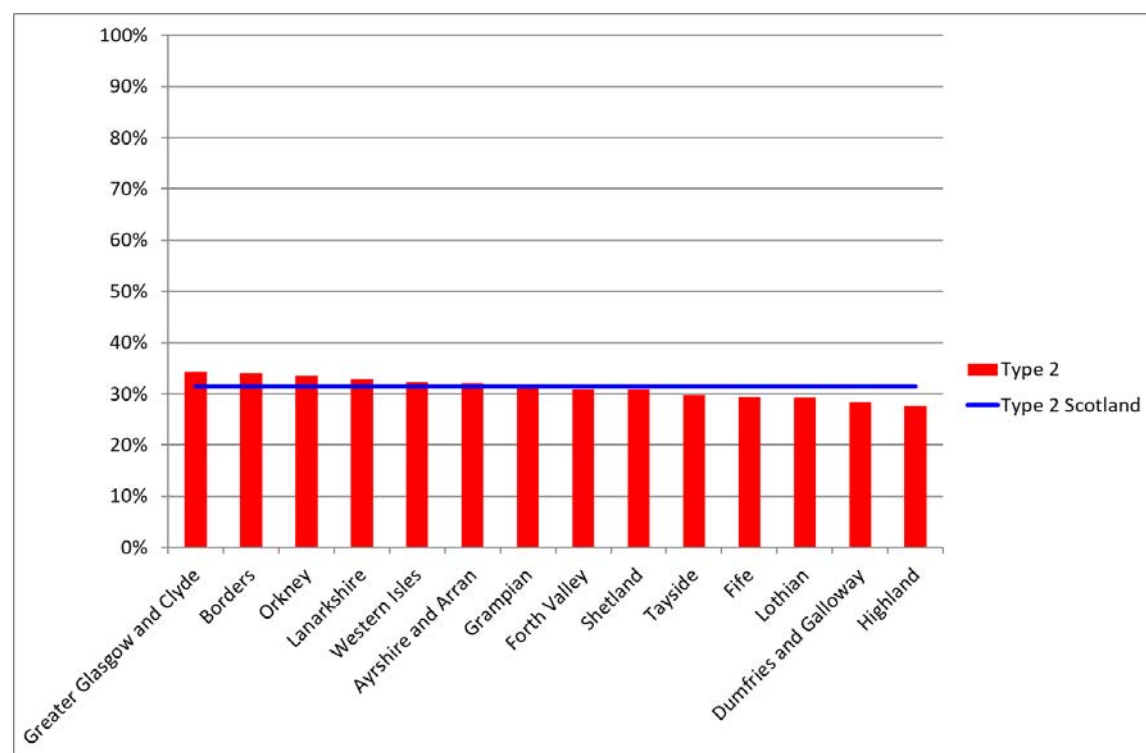
Note: Those with only results older than 15 months are classed as missing (not recorded).

**Figure 65 Type 2 diabetes: Percentage of people with SBP  $\leq$  140 mmHg, Scotland, from 2018 to 2019.**



Note: Arrows showing the direction of change have been added for all boards with more than 2.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

**Figure 66 Type 2 diabetes: Percentage of people with most recent blood pressure in the last 15 months < 130 mmHg (systolic) and ≤ 80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.**



Note: Horizontal line indicates mean level for Scotland as a whole.

**Table 95 Type 2 diabetes: Number and percentage of people with most recent blood pressure in the last 15 months < 130 mmHg (systolic) and ≤ 80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.**

NHS board	Met BP target		Did not meet BP target		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Greater Glasgow and Clyde	17,573	34.3	33,711	65.7	51,284	7,357	12.5
Borders	1,911	34.0	3,707	66.0	5,618	536	8.7
Orkney	352	33.6	697	66.4	1,049	66	5.9
Lanarkshire	10,279	32.9	21,002	67.1	31,281	5,315	14.5
Western Isles	407	32.2	856	67.8	1,263	90	6.7
Ayrshire and Arran	6,226	32.0	13,234	68.0	19,460	2,990	13.3
Grampian	7,718	31.7	16,632	68.3	24,350	2,026	7.7
Forth Valley	4,301	30.9	9,606	69.1	13,907	2,167	13.5
Shetland	288	30.9	645	69.1	933	72	7.2
Tayside	5,880	29.7	13,930	70.3	19,810	1,756	8.1
Fife	5,365	29.4	12,862	70.6	18,227	2,163	10.6
Lothian	9,716	29.3	23,412	70.7	33,128	4,753	12.5
Dumfries and Galloway	2,254	28.3	5,701	71.7	7,955	758	8.7
Highland	4,118	27.6	10,788	72.4	14,906	1,222	7.6
<b>Scotland</b>	<b>76,388</b>	<b>31.4</b>	<b>166,783</b>	<b>68.6</b>	<b>243,171</b>	<b>31,271</b>	<b>11.4</b>

Note. Restricted to most recent value recorded in the previous 15 months – those with only older results are classed as missing (not recorded).

**Table 96** Percentage of people with diabetes (type 1 and type 2 combined) with systolic blood pressure (SBP)  $\leq 140$  mmHg by year, Scotland 2010-2019.

Year	Total	Systolic BP $\leq 140$ (%)	Systolic BP $> 140$ (%)	Not recorded (%)
2019	307,894	74.1	25.9	11.9
2018	300,443	74.5	25.5	11.9
2017	294,718	74.9	25.1	10.8
2016	288,627	76.6	23.4	7.2
2015	281,237	77.8	22.2	6.2
2014	273,852	78.5	21.5	6.0
2013	256,866	78.6	21.4	6.4
2012	256,816	77.5	22.5	6.9
2011	228,948	76.0	24.0	6.6
2010	220,615	74.9	25.1	6.1

**Table 97** Type 1 diabetes: Mean BP (mmHg) recorded in previous 15 months in people aged  $< 40$  years, by NHS board, ranked by mean systolic BP, Scotland 2019.

NHS board	Mean systolic BP (mmHg)	Mean diastolic BP (mmHg)
Orkney	118	72
Ayrshire and Arran	120	73
Grampian	122	73
Shetland	122	75
Western Isles	122	76
Highland	123	74
Lanarkshire	124	75
Greater Glasgow and Clyde	125	77
Lothian	125	78
Dumfries and Galloway	126	77
Tayside	126	76
Borders	127	77
Forth Valley	127	77
Fife	129	76

**Table 98 Type 2 diabetes: Mean BP recorded in previous 15 months in people aged 50-59 years, by NHS board, ranked by mean systolic BP, Scotland 2019.**

NHS board	Mean systolic BP (mmHg)	Mean diastolic BP (mmHg)
Orkney	131	78
Shetland	131	78
Greater Glasgow and Clyde	131	79
Borders	132	79
Forth Valley	132	79
Grampian	132	79
Lanarkshire	132	79
Western Isles	132	80
Ayrshire and Arran	133	78
Fife	133	80
Highland	133	80
Tayside	133	80
Lothian	133	81
Dumfries and Galloway	134	80

## Total Cholesterol Summary

Cholesterol level was recorded in 83.0% of people with type 1 or type 2 diabetes within the previous 15 months (Table 99), the lowest proportion of recording in the last 10 years.

**Table 99 Number and percentage of people with diabetes (type 1 and type 2 combined) with cholesterol < 5mmol/l, by year (denominator those with recording of cholesterol within the previous 15 months) by year, Scotland 2010-2019.**

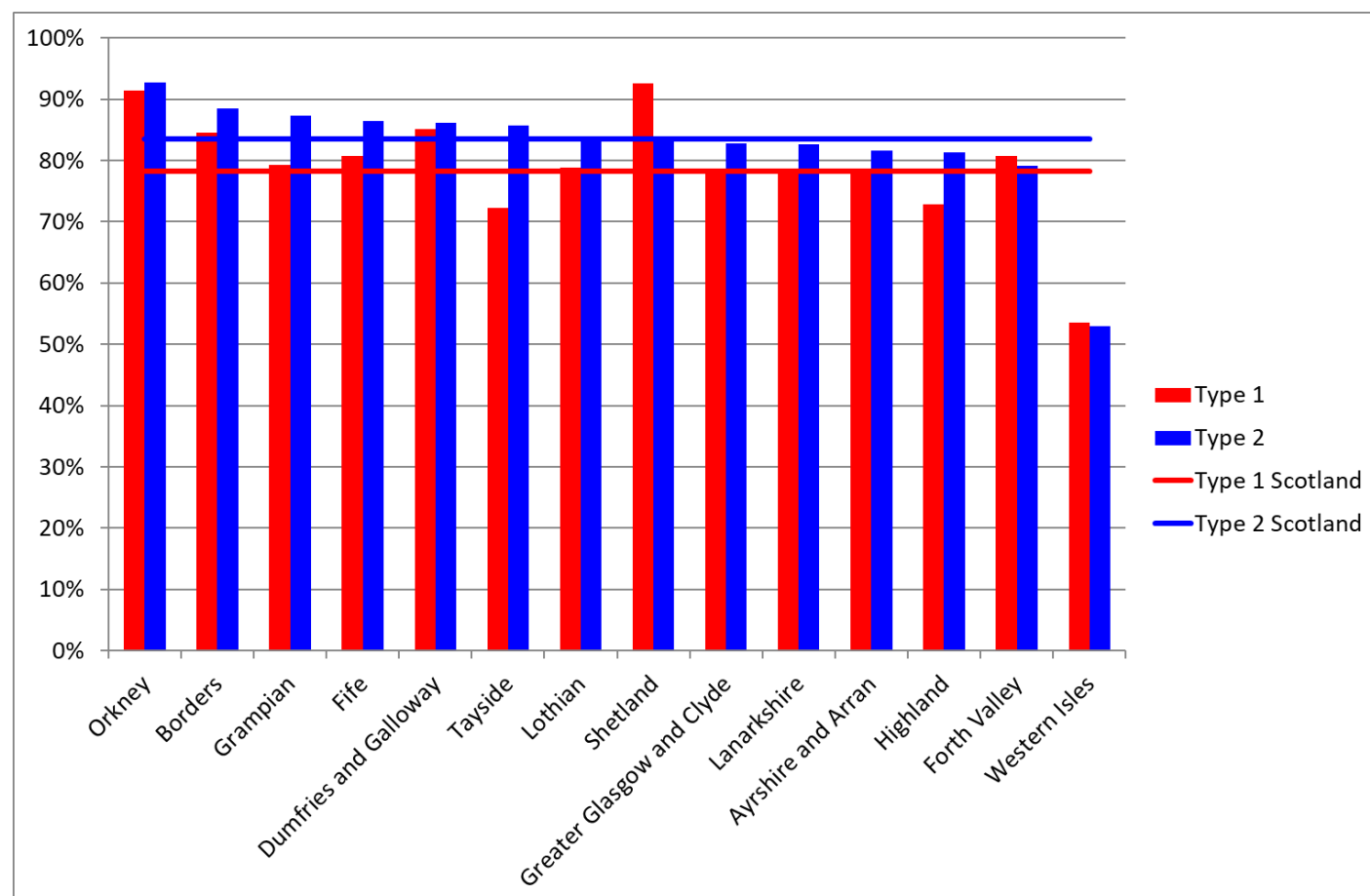
Year	Cholesterol ≤ 5		Cholesterol > 5		Not recorded		Recorded (%)	Total Eligible Population (n)
	Number	%	Number	%	Number	%		
2019	197,513	78.1	55,467	21.9	51,677	17.0	83.0	304,657
2018	192,771	77.6	55,554	22.4	48,918	16.5	83.5	297,243
2017	188,985	76.5	58,131	23.5	44,446	15.2	84.8	291,562
2016	191,365	77.6	55,287	22.4	38,805	13.6	86.4	285,457
2015	194,520	78.9	52,093	21.1	31,512	11.3	88.7	278,125
2014	196,091	79.8	49,502	20.2	25,132	9.3	90.7	270,725
2013	191,130	79.9	47,970	20.1	23,654	9.0	91.0	262,754
2012	182,643	79.5	47,145	20.5	23,895	9.4	90.6	253,683
2011	174,832	79.8	44,364	20.2	25,604	10.4	89.2	245,786
2010	169,367	80.4	41,391	19.6	24,440	10.4	89.6	235,198

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3237).

See the [Type 1 Diabetes Total Cholesterol](#) section for information on people with type 1 diabetes.

## Total Cholesterol Regional Detail

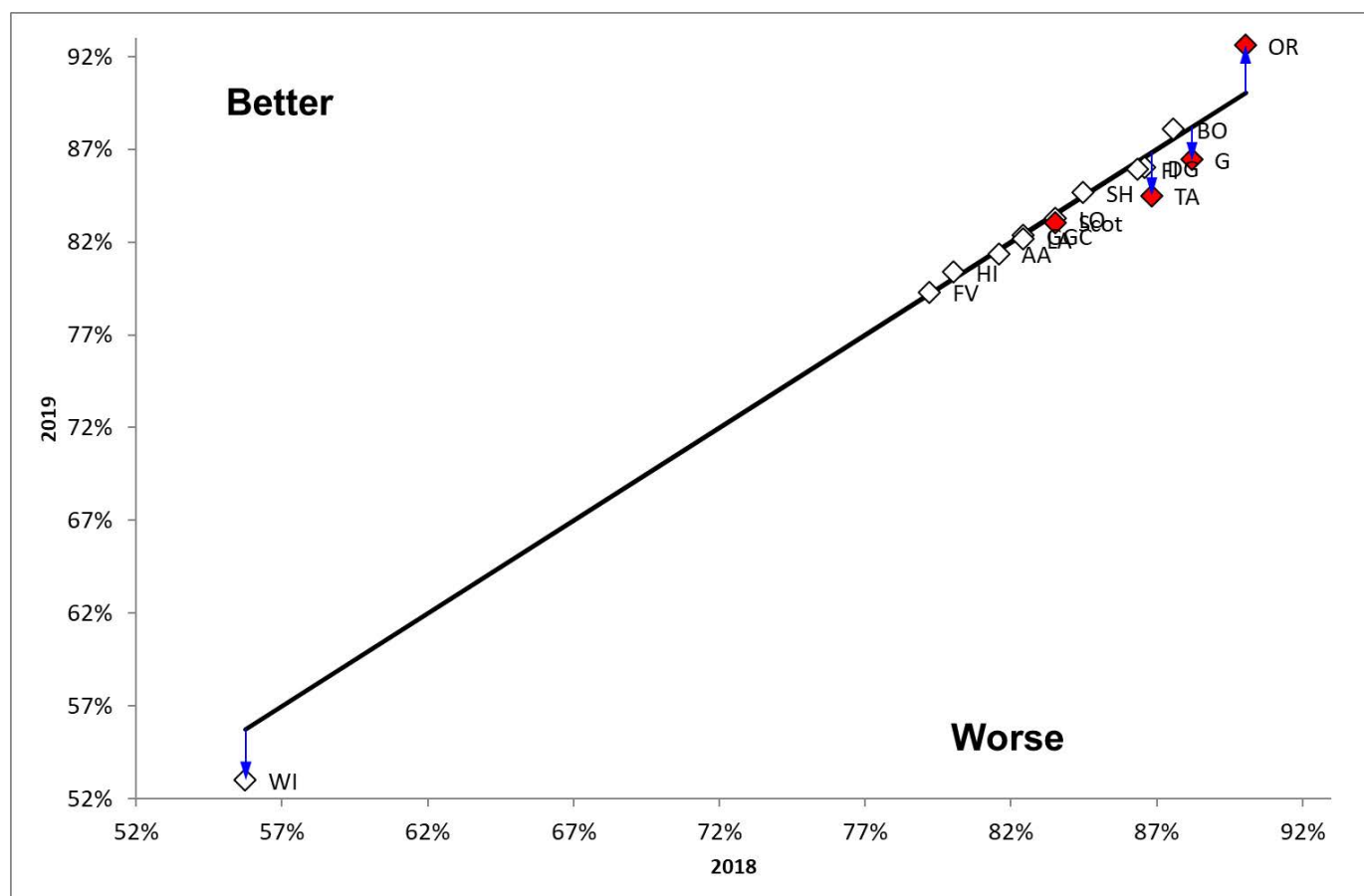
**Figure 67** Percentage of people with type 1 or type 2 diabetes with a record of cholesterol within the previous 15 months by diabetes type and NHS board, ranked by the percentage of people with type 2 diabetes with a record of cholesterol, Scotland 2019.



Note: Horizontal lines indicate figures for Scotland as a whole. Excludes children under 18 years or who have no recorded date of birth (type 1 n = 3095, type 2 n = 142).

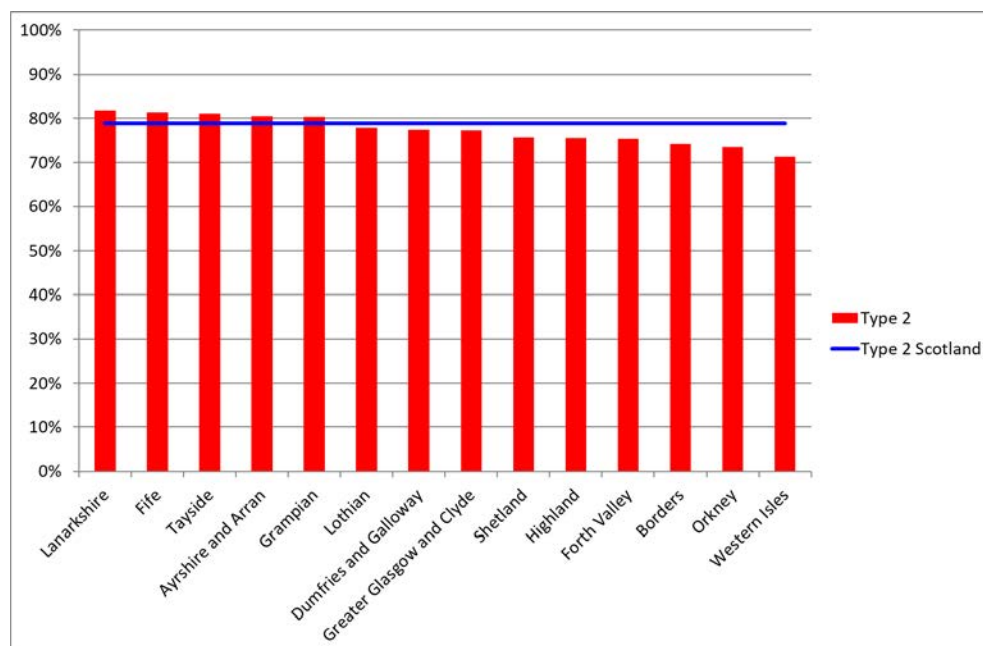


**Figure 68 Percentage of people with diabetes (type 1 and type 2 combined) with a record of cholesterol within the previous 15 months, Scotland, from 2018 to 2019.**



Note: Arrows showing the direction of change have been added for boards with more than 1% change over the period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

**Figure 69 Type 2 diabetes: Percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , by NHS board (denominator those with recording of cholesterol within the previous 15 months), Scotland 2019.**



Note: Excludes children under 18 years or who have no recorded date of birth (n = 142); Horizontal line indicates mean level for Scotland as a whole.

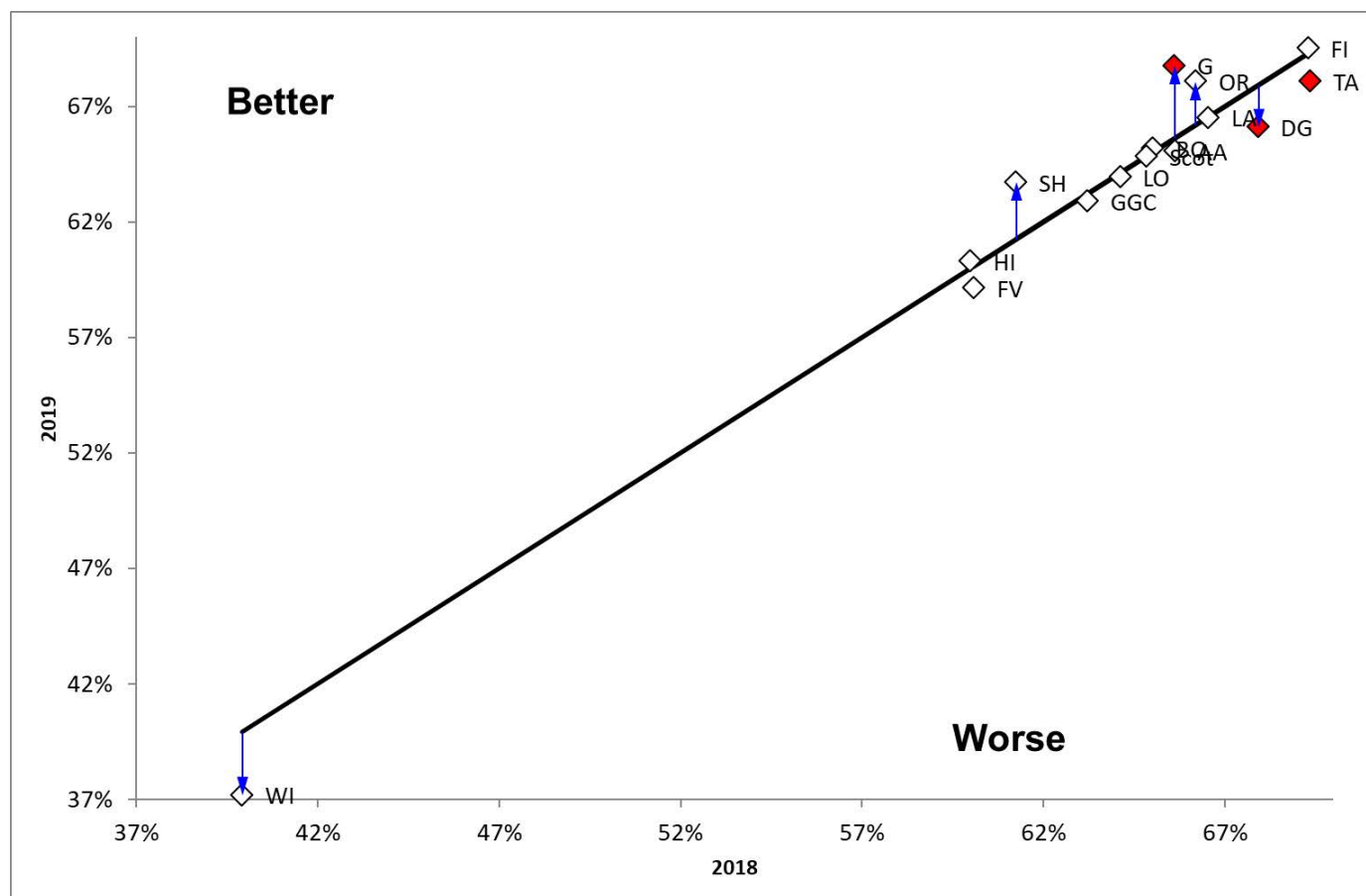
Total cholesterol was less than or equal to 5.0mmol/l in 78.1% of people with a recorded result (Table 11 and Table 100).

**Table 100 Type 2 diabetes: Number and percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , Scotland 2019.**

NHS board	Total cholesterol $\leq 5$ (%)	Total recorded (n)	Not recorded (%)
Lanarkshire	81.8	30,174	17.4
Fife	81.3	17,610	13.6
Tayside	81.1	18,474	14.3
Ayrshire and Arran	80.4	18,331	18.3
Grampian	80.3	23,024	12.7
Lothian	77.8	31,723	16.2
Dumfries and Galloway	77.4	7,498	13.9
Greater Glasgow and Clyde	77.3	48,547	17.2
Shetland	75.7	840	16.4
Highland	75.6	13,110	18.7
Forth Valley	75.5	12,717	20.9
Borders	74.3	5,442	11.5
Orkney	73.6	1,034	7.3
Western Isles	71.3	716	47.1
<b>Scotland</b>	<b>78.8</b>	<b>229,240</b>	<b>16.4</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 142).

**Figure 70** Percentage of people with diabetes (type 1 and type 2 combined) with cholesterol  $\leq 5$  mmol/l within the previous 15 months, Scotland, from 2018 to 2019.



Note: Arrows showing the direction of change have been added for all boards with more than 1.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2018 and 2019.

**Table 101 Type 2 diabetes: Mean total cholesterol recorded in previous 15 months in people aged 50-59 years, by NHS board, ranked by mean cholesterol, Scotland 2019.**

NHS board	Mean total cholesterol (mmol/l)
Fife	4.1
Lanarkshire	4.2
Tayside	4.2
Ayrshire and Arran	4.2
Grampian	4.2
Shetland	4.3
Dumfries and Galloway	4.3
Lothian	4.3
Greater Glasgow and Clyde	4.3
Forth Valley	4.4
Highland	4.4
Orkney	4.4
Western Isles	4.4
Borders	4.5

## Smoking Status National and Regional Detail

The smoking status in the last 15 months was recorded for 73% of people with diabetes (type 1 and 2 combined) (Table 102). Overall, 16.0% reported that they currently smoke. Note: Data from people of all ages are included in these smoking figures.

**Table 102 Percentage of people with diabetes (type 1 and type 2 combined) who were recorded as current, ex- or never-smokers (denominator those with record of smoking status) by year, Scotland 2014-2019.**

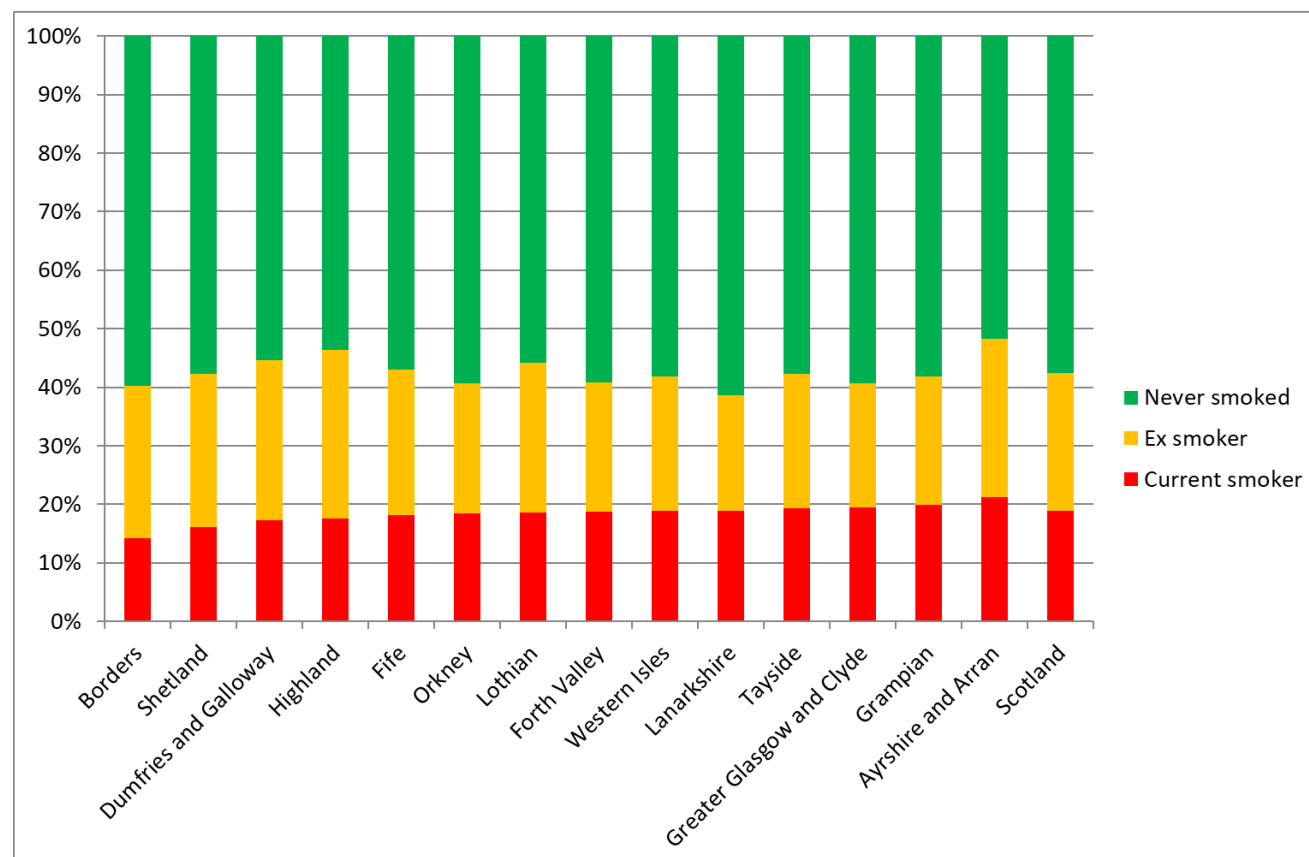
Year	Current smoker (%)	Ex-smoker (%)	Never smoked (%)	Not recorded (%)
2019	16.0	36.1	47.9	27.0
2018	16.3	36.5	47.2	26.5
2017	16.9	36.3	46.8	24.7
2016	17.7	36.4	45.9	21.8
2015	18.1	36.6	45.4	18.8
2014	18.8	36.3	45.0	15.4

Table 103 and Table 104 show those with a recorded smoking status in the last 15 months. Overall, 16.0% reported that they currently smoke (18.9% type 1 and 15.7% type 2). Figure 71 and Figure 72 graphically show the percentages of the smoking status, including those without a recording, using people with diabetes (type 1 and type 2 combined) as the denominator.

See the type 1 Smoking Status section for information on people with type 1 diabetes.

Note: Data from people of all ages are included in these smoking figures.

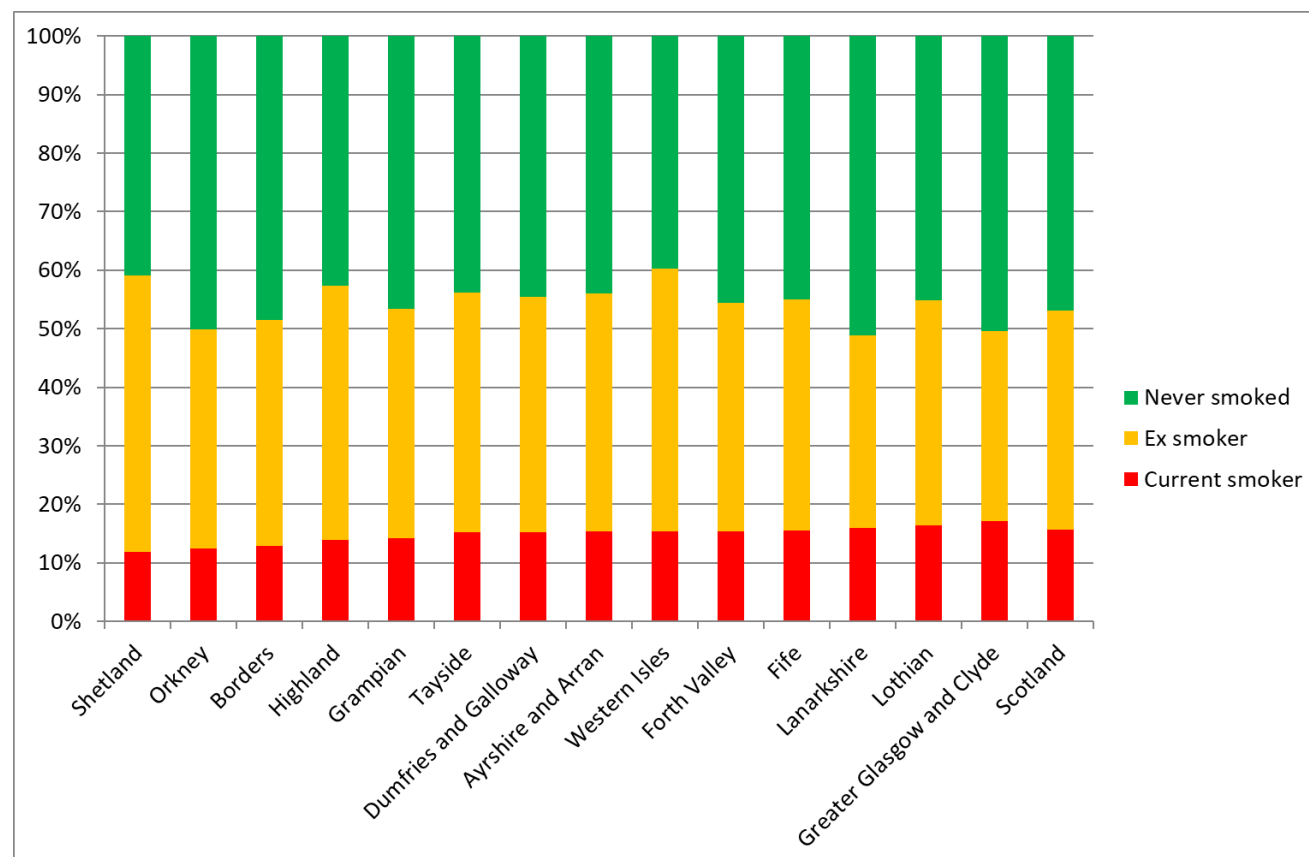
**Figure 71 Type 1 diabetes: Smoking status as a percentage of all those with type 1 diabetes, by NHS Health Board, ordered by current smoker percentage, Scotland 2019.**



**Table 103 Type 1 diabetes: Percentage of people who were recorded as current, ex- or never-smokers, by NHS board (denominator those with a record of smoking status); ordered by current smoker percentage, Scotland 2019.**

NHS board	No. with known status	Current smoker (%)	Ex-smoker (%)	Never smoked (%)	Recorded (%)
Borders	487	14.2	26.1	59.8	65.7
Shetland	137	16.1	26.3	57.7	90.1
Dumfries and Galloway	741	17.3	27.4	55.3	72.8
Highland	1,576	17.6	28.7	53.7	71.2
Fife	1,772	18.2	24.7	57.1	78.1
Orkney	108	18.5	22.2	59.3	86.4
Lothian	3,328	18.7	25.5	55.8	64.8
Forth Valley	1,465	18.8	22.0	59.2	74.3
Western Isles	122	18.9	23.0	58.2	58.9
Lanarkshire	2,566	18.9	19.7	61.4	56.1
Tayside	1,403	19.3	23.0	57.7	61.0
Greater Glasgow and Clyde	4,288	19.4	21.3	59.3	63.8
Grampian	2,118	19.9	21.9	58.2	58.5
Ayrshire and Arran	1,308	21.3	27.0	51.8	54.5
<b>Scotland</b>	<b>21,419</b>	<b>18.9</b>	<b>23.5</b>	<b>57.6</b>	<b>64.0</b>

**Figure 72 Type 2 diabetes: Smoking status as a percentage of all those with type 2 diabetes, by NHS Health Board, ordered by current smoker percentage, Scotland 2019.**



**Table 104 Type 2 diabetes: Percentage of people who were recorded as current, ex- or never-smokers, by NHS board (denominator those with a record of smoking status); ranked by percentage who are current smokers, Scotland 2019.**

NHS board	No. with known status	Current smoker (%)	Ex smoker (%)	Never smoked (%)	Recorded (%)
Shetland	839	11.9	47.2	40.9	83.5
Orkney	931	12.5	37.5	50.1	83.5
Borders	4,568	12.9	38.6	48.6	74.2
Highland	12,705	13.9	43.4	42.7	78.8
Grampian	20,197	14.2	39.3	46.5	76.6
Tayside	17,054	15.2	41.0	43.8	79.1
Dumfries and Galloway	6,236	15.2	40.2	44.6	71.6
Ayrshire and Arran	16,732	15.4	40.7	44.0	74.5
Western Isles	1,028	15.4	44.8	39.8	76.0
Forth Valley	11,838	15.4	39.0	45.6	73.6
Fife	15,065	15.6	39.4	45.0	73.9
Lanarkshire	26,050	15.9	32.9	51.2	71.2
Lothian	26,333	16.4	38.4	45.2	69.5
Greater Glasgow and Clyde	43,854	17.2	32.4	50.3	74.8
<b>Scotland</b>	<b>203,430</b>	<b>15.7</b>	<b>37.5</b>	<b>46.9</b>	<b>74.1</b>

## Complications of Diabetes Regional Detail

### Myocardial Infarction and Cardiac Revascularisation Summary

27,740 (9.0%) of registered people have a record of a previous MI in primary care records (Table 105). Others will have had an MI but not survived. There have been improvements in recording, increased use of procedures and better survival following an MI in recent years. 21,892 (7.1%) people included in the survey have a record of having undergone cardiac revascularisation (Table 105), including coronary artery bypass graft (CABG) and percutaneous transluminal coronary angioplasty (PTCA).

See the [Myocardial Infarction and Cardiac Regional Detail](#) sections for information on people with type 1 diabetes

**Table 105 Percentage of people with diabetes (type 1 and type 2 combined) who are recorded as having had a previous myocardial infarction (MI) or cardiac revascularisation by year, Scotland 2010-2019.**

Year	Myocardial infarction (%)	Cardiac Revascularisation (%)
2019	9.0	7.1
2018	9.0	7.1
2017	9.0	7.0
2016	9.0	6.9
2015	9.1	6.9
2014	9.2	6.9
2013	9.3	6.8
2012	9.4	6.7
2011	9.5	6.6
2010	9.1	6.4

Note: The Myocardial infarction column shows the percentage of people with diabetes who have ever had a record of a heart attack and survived.



## Myocardial Infarction Regional Detail

**Table 106** Number and percentage of people with type 1 or type 2 diabetes recorded as having had a previous myocardial infarction (MI), by diabetes type and NHS board, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.

NHS board	Recorded as having had an MI			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	5	4.0	90	8.1
Grampian	126	3.5	2,337	8.9
Fife	80	3.5	1,833	9.0
Dumfries and Galloway	44	4.3	806	9.3
Shetland	5	3.3	93	9.3
Lothian	150	2.9	3,534	9.3
Tayside	82	3.6	2,024	9.4
Forth Valley	51	2.6	1,516	9.4
Borders	37	5.0	588	9.6
Western Isles	6	2.9	130	9.6
Ayrshire and Arran	98	4.1	2,233	9.9
Lanarkshire	198	4.3	3,658	10.0
Highland	102	4.6	1,617	10.0
Greater Glasgow and Clyde	234	3.5	6,063	10.3
<b>Scotland</b>	<b>1,218</b>	<b>3.6</b>	<b>26,522</b>	<b>9.7</b>

## Cardiac Revascularisation Regional Detail

**Table 107** Number and percentage of people with type 1 or type 2 diabetes who have a record of cardiac revascularisation by NHS board and diabetes type, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.

NHS board	Recorded as having undergone cardiac revascularisation			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Western Isles	6	2.9	73	5.4
Orkney	5	4.0	67	6.0
Fife	60	2.6	1,279	6.3
Forth Valley	41	2.1	1,084	6.7
Shetland	5	3.3	74	7.4
Dumfries and Galloway	36	3.5	644	7.4
Tayside	72	3.1	1,607	7.5
Lothian	126	2.5	2,831	7.5
Borders	23	3.1	462	7.5
Lanarkshire	144	3.2	2,815	7.7
Ayrshire and Arran	72	3.0	1,741	7.8
Greater Glasgow and Clyde	179	2.7	4,618	7.9
Highland	75	3.4	1,354	8.4
Grampian	119	3.3	2,280	8.6
<b>Scotland</b>	<b>963</b>	<b>2.9</b>	<b>20,929</b>	<b>7.6</b>

## Stroke

15,616 (5.1%) people with diabetes were recorded as having ever had a cerebrovascular accident (stroke), an increase in numbers, but a similar percentage to that in previous surveys (5.1% in 2017 and 2018, 5.0% in 2016 and 2015, 4.9% in 2014, 5.0% in 2013, 4.9% in 2012 and 2011 and 5.0% in 2010).

**Table 108 Number and percentage of people with type 1 or type 2 diabetes who were recorded as ever having had a stroke, by NHS board and diabetes type, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.**

NHS board	Recorded as having had a stroke			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	*	*	36	3.2
Grampian	75	2.1	1,225	4.6
Western Isles	6	2.9	63	4.7
Tayside	45	2.0	1,028	4.8
Dumfries and Galloway	24	2.4	433	5.0
Forth Valley	39	2.0	809	5.0
Lanarkshire	103	2.3	1,846	5.0
Shetland	*	*	53	5.3
Highland	46	2.1	901	5.6
Fife	58	2.6	1,140	5.6
Greater Glasgow and Clyde	144	2.1	3,370	5.7
Lothian	110	2.1	2,205	5.8
Ayrshire and Arran	63	2.6	1,373	6.1
Borders	19	2.6	400	6.5
<b>Scotland</b>	<b>734</b>	<b>2.2</b>	<b>14,882</b>	<b>5.4</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Kidney Function and Disease Regional Detail

### Serum Creatinine National and Regional Detail

Serum creatinine was recorded in the previous 15 months for 91.7% (281,041) of people aged over 12 years of age or older (Table 110).

**Table 109 Percentage of people with diabetes (type 1 and type 2 combined) who had a record of serum creatinine within the previous 15 months by year, Scotland 2010-2019.**

Year	Record of serum creatinine within previous 15 months %	Total eligible population (n)
2019	91.7	306,566
2018	91.6	299,121
2017	92.1	293,411
2016	93.1	287,336
2015	94.1	280,003
2014	94.4	272,651
2013	93.3	264,695
2012	92.6	255,640
2011	91.2	244,800
2010	90.8	235,198

Note: Excludes children under 12 years of age or people who have no date of birth recorded (n = 1328).

See the [Type 1 Diabetes Serum Creatinine](#) section for information on people with type 1 diabetes.

***Serum Creatinine Regional Detail*****Table 110** Number and percentage of people with type 1 or type 2 diabetes who have a record of serum creatinine within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.

NHS board	Serum creatinine recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	People (n)	%	People (n)	%	
Orkney	118	97.5	1,092	97.9	1,210
Shetland	142	96.6	968	96.3	1,110
Western Isles	168	84.8	1,293	95.6	1,461
Borders	654	91.0	5,872	95.4	6,526
Dumfries and Galloway	889	91.0	8,310	95.4	9,199
Grampian	3,073	88.1	25,159	95.4	28,232
Tayside	1,951	87.5	20,352	94.4	22,303
Fife	1,920	88.3	19,065	93.5	20,985
Lothian	4,293	86.0	35,248	93.1	39,541
Lanarkshire	3,878	88.7	33,899	92.8	37,777
Greater Glasgow and Clyde	5,686	87.8	54,393	92.8	60,079
Forth Valley	1,663	88.3	14,796	92.0	16,459
Ayrshire and Arran	1,826	79.2	19,905	88.7	21,731
Highland	1,472	68.8	12,956	80.3	14,428
<b>Scotland</b>	<b>27,733</b>	<b>86.1</b>	<b>253,308</b>	<b>92.3</b>	<b>281,041</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102).

## Urinary Albuminuria

**Table 111** Number and percentage of people with type 1 or type 2 diabetes and a record of estimated urinary albumin value within the previous 15 months, by diabetes type by year, Scotland 2012-2019.

Year	Urinary albumin recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	Number	%	Number	%	
2019	20,450	63.5	180,620	65.8	201,070
2018	19,844	62.8	177,039	66.2	196,883
2017	18,928	62.6	177,868	67.6	196,796
2016	18,815	63.3	180,497	70.1	199,312
2015	18,180	62.2	178,151	71.0	196,331
2014	18,516	64.5	177,646	72.8	196,162
2013	17,256	61.2	166,551	70.4	183,807
2012	16,851	60.7	157,564	69.1	174,415

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102). In some cases, urinary albumin was estimated from albumin/creatinine ratio (ACR). This table is limited to the years since 2012 due to the absence of data prior to that.

See the [Type 1 Diabetes Urinary Albuminuria](#) section for information on people with type 1 diabetes

**Table 112** Number and percentage of people with type 1 or type 2 diabetes with a record of estimated urinary albumin value within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.

NHS board	Urinary albumin recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	People (n)	%	People (n)	%	
Orkney	95	78.5	912	81.8	1,007
Tayside	1,429	64.1	16,650	77.2	18,079
Grampian	2,577	73.9	19,531	74.1	22,108
Dumfries and Galloway	661	67.7	6,142	70.5	6,803
Fife	1,516	69.7	13,892	68.2	15,408
Lothian	3,575	71.6	25,741	68.0	29,316
Forth Valley	1,207	64.1	10,741	66.8	11,948
Shetland	120	81.6	671	66.8	791
Western Isles	84	42.4	903	66.7	987
Ayrshire and Arran	1,227	53.2	14,701	65.5	15,928
Highland	1,211	56.6	10,515	65.2	11,726
Greater Glasgow and Clyde	4,008	61.9	38,144	65.1	42,152
Lanarkshire	2,440	55.8	21,413	58.6	23,853
Borders	300	41.7	664	10.8	964
<b>Scotland</b>	<b>20,450</b>	<b>63.5</b>	<b>180,620</b>	<b>65.8</b>	<b>201,070</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102). In some cases, urinary albumin was estimated from albumin/creatinine ratio (ACR).

**Table 113** Number and percentage of people with type 1 or type 2 diabetes with a record of estimated glomerular filtration rate (eGFR) within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage of people with type 2 diabetes, Scotland 2019.

NHS board	Estimated glomerular filtration rate (eGFR) recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	People (n)	%	People (n)	%	
Orkney	113	97.4	1,093	98.0	1,206
Shetland	134	98.5	967	96.2	1,101
Western Isles	157	84.9	1,295	95.7	1,452
Grampian	2,931	89.6	25,164	95.4	28,095
Dumfries and Galloway	855	92.8	8,309	95.4	9,164
Tayside	1,818	86.5	20,347	94.4	22,165
Fife	1,814	88.3	19,053	93.5	20,867
Greater Glasgow and Clyde	5,393	87.9	54,390	92.8	59,783
Highland	1,687	84.4	14,885	92.3	16,572
Lothian	4,109	86.8	34,909	92.2	39,018
Lanarkshire	3,555	86.8	33,654	92.1	37,209
Forth Valley	1,573	88.9	14,797	92.1	16,370
Ayrshire and Arran	1,925	89.0	20,637	91.9	22,562
Borders	584	86.5	5,420	88.1	6,004
<b>Scotland</b>	<b>26,648</b>	<b>87.8</b>	<b>254,920</b>	<b>92.9</b>	<b>281,568</b>



## End Stage Renal Failure

End stage renal failure implies a need for renal dialysis or transplantation and may occur as a consequence of diabetic nephropathy or from other causes of kidney disease.

**Table 114 Number and percentage of people with type 1 or type 2 diabetes recorded as having end stage renal failure, by NHS board and diabetes type, ranked by percentage of people with type 2 diabetes, Scotland 2019.**

NHS board	Recorded as having end stage renal failure			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	*	*	*	*
Shetland	*	*	*	*
Borders	15	2.0	22	0.4
Ayrshire and Arran	33	1.4	83	0.4
Fife	20	0.9	97	0.5
Lanarkshire	82	1.8	195	0.5
Tayside	34	1.5	120	0.6
Grampian	64	1.8	150	0.6
Highland	30	1.4	98	0.6
Forth Valley	26	1.3	98	0.6
Lothian	49	1.0	247	0.7
Dumfries and Galloway	20	2.0	59	0.7
Greater Glasgow and Clyde	97	1.4	446	0.8
Western Isles	*	*	14	1.0
<b>Scotland</b>	<b>474</b>	<b>1.4</b>	<b>1,634</b>	<b>0.6</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Diabetic Eye Screening and Disease Regional Detail

### Diabetic Retinal Screening

84.4% of people eligible for screening had a record of eye screening through the retinal screening service in the previous 15 months, including those attending ophthalmology services (Table 115).

Table 115 shows the proportion of people aged 12 years or older who were either screened, were receiving eye-care via specialist services or were deliberately (for clinical or social reasons) suspended from screening as a proportion of the total number of people who had a record of date of birth and were over 12 years of age.

See the [Type 1 Diabetes Diabetic Retinal Screening](#) section for information on people with type 1 diabetes.

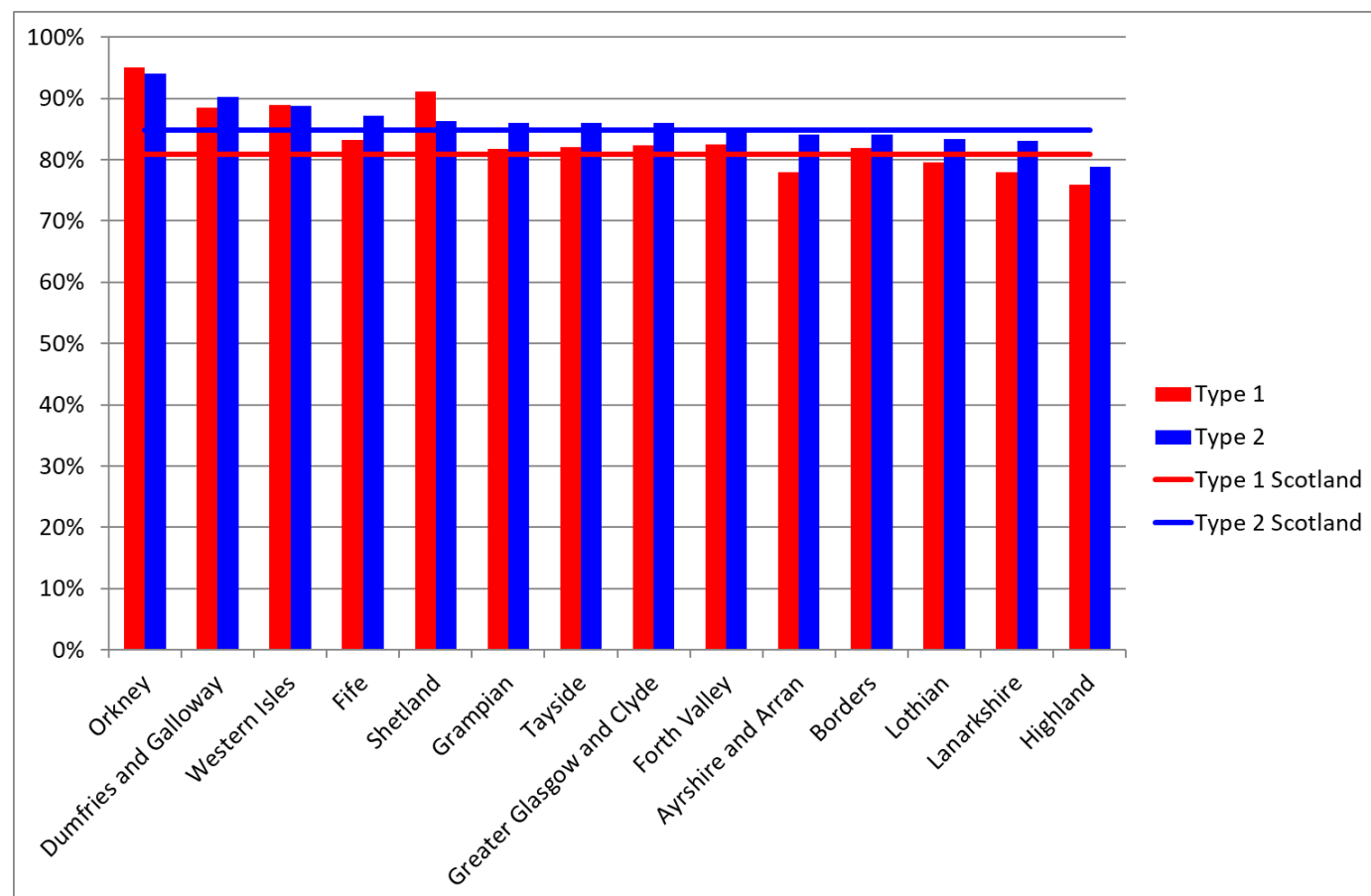
**Table 115 Percentage of people with diabetes (type 1 and type 2 combined) who were recorded as having had eye-screening, ophthalmology care or an appropriate suspension from screening (depending on methodology at the time of the report) by year, Scotland 2010-2019**

Year	Recorded within previous 15 months (%)
2019	84.4
2018	84.2
2017	82.4
2016	85.4
2015	85.7
2014	86.4
2013	86.7
2012	86.1
2011	85.6
2010	85.1

Note: Excludes children under 12 years or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102). In 2017, data in this table were revised, with years 2013-2015 0.1% lower than previously reported.

## Diabetic Retinal Screening Regional Detail

**Figure 73** Percentage of people with type 1 or type 2 diabetes with a record of diabetic retinopathy screening within the previous 15 months through retinal screening service, including those attending ophthalmology clinics and those suspended, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.



Note: Excludes people under 12 years of age and people whose date of birth has not been recorded (type 1 n = 3095, type 2 n = 142).

Table 116 and Table 117 show the number and proportion of people of appropriate age ( $\geq 12$  years) who were either screened, were receiving eye-care via specialist services or were deliberately (for clinical or social reasons) suspended from screening as a proportion of the total number of people who had a record of date of birth and were over 12 years of age.

**Table 116** Number and percentage of people with type 1 and type 2 diabetes of appropriate age (>12 years) who were either recorded as having had diabetic retinopathy screening within the previous 15 months, were attending specialist ophthalmology clinics or were appropriately suspended from screening as a proportion of the total number of people who had a record of date of birth and were over 12 years of age; by NHS board and diabetes type, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2019.

NHS board	Type 1 diabetes		Type 2 diabetes		All (Type 1 and Type 2)		Not recorded (n)
	People (n)	%	People (n)	%	People (n)	%	
Orkney	115	95.0	1,049	94.1	1,164	94.2	72
Dumfries and Galloway	864	88.4	7,858	90.2	8,722	90.0	964
Western Isles	176	88.9	1,201	88.8	1,377	88.8	174
Fife	1,809	83.2	17,754	87.1	19,563	86.7	2,992
Shetland	134	91.2	867	86.3	1,001	86.9	151
Grampian	2,854	81.8	22,686	86.0	25,540	85.5	4,324
Tayside	1,829	82.1	18,541	86.0	20,370	85.6	3,425
Greater Glasgow and Clyde	5,334	82.3	50,388	85.9	55,722	85.6	9,386
Forth Valley	1,553	82.4	13,564	84.4	15,117	84.2	2,841
Ayrshire and Arran	1,798	78.0	18,874	84.1	20,672	83.5	4,083
Borders	589	81.9	5,172	84.1	5,761	83.8	1,110
Lothian	3,972	79.6	31,579	83.4	35,551	82.9	7,314
Lanarkshire	3,412	78.0	30,339	83.1	33,751	82.5	7,153
Highland	1,625	75.9	12,715	78.9	14,340	78.5	3,926
<b>Scotland</b>	<b>26,064</b>	<b>80.9</b>	<b>232,587</b>	<b>84.8</b>	<b>258,651</b>	<b>84.4</b>	<b>47,915</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102)

**Table 117 Numbers of people eligible for retinopathy screening, numbers screened and percentages of those who had a record of screening (type 1 and type 2 combined), ranked from high to low by percentage of screened people, Scotland 2019.**

NHS board	Eligible for screening (n)	Screened	
		People (n)	%
Orkney	1,131	1,059	93.6
Dumfries and Galloway	8,584	7,620	88.8
Western Isles	1,453	1,279	88.0
Fife	21,714	18,722	86.2
Shetland	1,091	940	86.2
Grampian	28,076	23,752	84.6
Greater Glasgow and Clyde	60,707	51,321	84.5
Tayside	21,720	18,295	84.2
Forth Valley	17,204	14,363	83.5
Borders	6,347	5,237	82.5
Ayrshire and Arran	22,828	18,745	82.1
Lothian	39,844	32,530	81.6
Lanarkshire	38,117	30,964	81.2
Highland	17,369	13,443	77.4
<b>Scotland</b>	<b>286,185</b>	<b>238,270</b>	<b>83.3</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102)

**Table 118** Number and prevalence (per 10,000 people with type 1 diabetes who are recorded as blind) of causes of blindness, ranked from low to high by prevalence of blindness caused by diabetes, Scotland 2019.

NHS board	Diabetic cause		Total Recorded		Total on register (n)
	n	Prevalence	n	Prevalence	
Borders	0	0.0	*	*	741
Dumfries and Galloway	0	0.0	7	68.8	1,018
Highland	0	0.0	8	36.2	2,213
Orkney	0	0.0	*	*	125
Shetland	0	0.0	0	0.0	152
Western Isles	0	0.0	0	0.0	207
Lothian	*	*	14	27.2	5,139
Lanarkshire	*	*	41	89.7	4,571
Grampian	*	*	25	69.0	3,622
Ayrshire and Arran	*	*	13	54.2	2,399
Greater Glasgow and Clyde	*	*	32	47.6	6,724
Forth Valley	*	*	10	50.7	1,972
Tayside	*	*	17	73.9	2,301
Fife	*	*	14	61.7	2,268
<b>Scotland</b>	<b>16</b>	<b>4.8</b>	<b>183</b>	<b>54.7</b>	<b>33,452</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

**Table 119** Number and prevalence (per 10,000 people with type 2 diabetes who are recorded as blind) of causes of blindness, ranked by diabetic cause prevalence, Scotland 2019.

NHS board	Diabetic cause		Total Recorded		Total on register (n)
	n	Prevalence	n	Prevalence	
Borders	0	0.0	34	55.2	6,154
Dumfries and Galloway	0	0.0	59	67.7	8,713
Grampian	0	0.0	216	81.9	26,376
Greater Glasgow and Clyde	0	0.0	374	63.8	58,641
Lothian	0	0.0	203	53.6	37,881
Orkney	0	0.0	8	71.7	1,115
Shetland	0	0.0	5	49.8	1,005
Western Isles	0	0.0	5	37.0	1,353
Lanarkshire	*	*	271	74.1	36,596
Ayrshire and Arran	*	*	92	41.0	22,450
Forth Valley	*	*	72	44.8	16,074
Tayside	*	*	135	62.6	21,566
Fife	*	*	128	62.8	20,390
Highland	*	*	99	61.4	16,128
<b>Scotland</b>	<b>9</b>	<b>0.3</b>	<b>1,701</b>	<b>62.0</b>	<b>274,442</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Foot Complications National and Regional Detail

**Table 120 Type 1 diabetes: Number and percentage of people with active foot disease, high, moderate or low foot risk score recorded in the previous 15 months, by NHS board, ranked by decreasing percentage foot risk score recorded, Scotland 2019.**

NHS board	Recorded as having active foot disease		Recorded as having high foot risk score		Recorded as having moderate foot risk score		Recorded as having low foot risk score		Foot risk score recorded	
	n	%	n	%	n	%	n	%	n	%
Shetland	0	0.0	*	*	*	*	122	91.7	133	90.5
Orkney	0	0.0	6	7.0	11	12.8	69	80.2	86	71.1
Highland	23	1.6	134	9.2	126	8.6	1,180	80.7	1,463	68.3
Forth Valley	19	1.5	107	8.4	102	8.1	1,039	82.0	1,267	67.3
Dumfries and Galloway	11	1.7	41	6.5	62	9.8	517	81.9	631	64.6
Borders	*	*	55	12.1	*	*	356	78.2	455	63.3
Western Isles	*	*	*	*	22	18.2	76	62.8	121	61.1
Ayrshire and Arran	39	2.8	67	4.8	71	5.1	1,218	87.3	1,395	60.5
Greater Glasgow and Clyde	128	3.4	319	8.4	260	6.8	3,090	81.4	3,797	58.6
Tayside	33	2.5	125	9.6	108	8.3	1,040	79.6	1,306	58.6
Grampian	62	3.0	120	5.9	156	7.7	1,698	83.4	2,036	58.4
Lanarkshire	101	4.2	203	8.4	199	8.2	1,911	79.2	2,414	55.2
Lothian	64	2.3	182	6.6	194	7.1	2,299	83.9	2,739	54.9
Fife	31	2.9	91	8.5	89	8.3	861	80.3	1,072	49.3
<b>Scotland</b>	<b>515</b>	<b>2.7</b>	<b>1,475</b>	<b>7.8</b>	<b>1,449</b>	<b>7.7</b>	<b>15,476</b>	<b>81.8</b>	<b>18,915</b>	<b>58.7</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102).



**Table 121 Type 2 diabetes: Number and percentage of people with active foot disease, high, moderate or low foot risk score recorded in the previous 15 months, by NHS board, ranked by decreasing percentage foot risk score recorded, Scotland 2019.**

NHS board	Recorded as having active foot disease		Recorded as having high foot risk score		Recorded as having moderate foot risk score		Recorded as having low foot risk score		Foot risk score recorded	
	n	%	n	%	n	%	n	%	n	%
Shetland	14	1.7	26	3.1	85	10.3	704	84.9	829	82.5
Orkney	17	1.9	146	16.6	206	23.4	512	58.1	881	79.0
Tayside	181	1.1	1,200	7.3	2,622	16.0	12,361	75.5	16,364	75.9
Highland	139	1.1	949	7.8	1,661	13.7	9,410	77.4	12,159	75.4
Western Isles	28	2.9	246	25.1	244	24.8	464	47.3	982	72.6
Grampian	237	1.3	814	4.3	2,320	12.3	15,540	82.2	18,911	71.7
Dumfries and Galloway	53	0.9	256	4.2	718	11.8	5,078	83.2	6,105	70.1
Borders	30	0.7	188	4.7	447	11.1	3,362	83.5	4,027	65.5
Ayrshire and Arran	129	0.9	481	3.4	1,268	8.8	12,476	86.9	14,354	63.9
Forth Valley	60	0.6	411	4.0	1,469	14.3	8,307	81.1	10,247	63.7
Lothian	390	1.6	1,407	5.9	3,310	13.8	18,854	78.7	23,961	63.3
Greater Glasgow and Clyde	702	1.9	2,417	6.7	4,666	12.9	28,463	78.5	36,248	61.8
Fife	205	1.7	957	8.2	2,107	18.0	8,457	72.1	11,726	57.5
Lanarkshire	360	1.7	1,123	5.4	2,228	10.7	17,169	82.2	20,880	57.2
<b>Scotland</b>	<b>2,545</b>	<b>1.4</b>	<b>10,621</b>	<b>6.0</b>	<b>23,351</b>	<b>13.1</b>	<b>141,157</b>	<b>79.4</b>	<b>177,674</b>	<b>64.8</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1226, type 2 n = 102).

## Foot Ulceration National and Regional Detail

### *Foot Ulceration*

**Table 122** Percentage of people with diabetes (type 1 and type 2 combined) who had a record of ever having had a foot ulcer by year, Scotland 2010-2019.

Year	Recorded as ever having had a foot ulcer (%)
2019	4.7
2018	4.7
2017	4.7
2016	4.7
2015	4.8
2014	4.9
2013	5.2
2012 (a)	5.1
2011	4.3
2010	4.4

Note: (a) The increase in recorded foot ulcers between 2011 and 2012 is likely to be due to better recording rather than a real increase in the number of foot ulcers.

14,418 (4.7%) people with type 1 or type 2 diabetes were reported to have had a foot ulcer (Table 123).

**Table 123** Number and percentage of people with diabetes with a record of ever having had a foot ulcer, by NHS board and diabetes type, ranked by ascending percentage of people with type 2 diabetes, Scotland 2019.

NHS board	Recorded as ever having had a foot ulcer			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Grampian	170	4.7	597	2.3
Ayrshire and Arran	142	5.9	547	2.4
Borders	48	6.5	154	2.5
Forth Valley	169	8.6	403	2.5
Dumfries and Galloway	67	6.6	258	3.0
Shetland	*	*	33	3.3
Tayside	153	6.6	778	3.6
Fife	157	6.9	818	4.0
Highland	137	6.2	658	4.1
Lothian	356	6.9	1,807	4.8
Greater Glasgow and Clyde	648	9.6	2,930	5.0
Orkney	*	*	57	5.1
Lanarkshire	746	16.3	2,459	6.7
Western Isles	16	7.7	102	7.5
<b>Scotland</b>	<b>2,817</b>	<b>8.4</b>	<b>11,601</b>	<b>4.2</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

See the [Type 1 Diabetes Foot Ulceration](#) section for information on people with type 1 diabetes.

## Lower Limb Amputation National and Regional Detail

There were 1,555 (0.5%) people recorded as having a major lower limb amputation (Table 124).

**Table 124 Number and percentage of people with diabetes (type 1 and type 2 combined) who had a record of ever having had a major lower limb amputation by year, Scotland 2010-2019.**

Year	Lower limb amputation	
	People (n)	%
2019 (a)	1,555	0.5
2018 (a)	1,401	0.5
2017 (b)	2,000	0.7
2016 (b)	2,055	0.7
2015 (b)	2,092	0.7
2014 (b)	2,111	0.8
2013 (b)	2,064	0.8
2012 (b)	1,854	0.7
2011	1,359	0.6
2010	1,250	0.5

Note: (a) During the validation of the 2019 survey, an error in the processing of this data was spotted. This error underestimated the numbers of people with amputations in 2018 and 2019. Data for 2019 were recalculated and are likely to be a close approximation of the actual number, and data for 2018 are likely to be an underestimate. (b) Between 2012 and 2017, amputation of digits were inadvertently included in the calculation.

**Table 125** Number and percentage of people with type 1 or type 2 diabetes with a record of ever having had a major lower limb amputation, by NHS board and diabetes type, ranked by ascending percentage of people with type 2 diabetes, Scotland 2019.

NHS board	Recorded as ever having had a lower limb amputation			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Lanarkshire	32	0.7	124	0.3
Highland	20	0.9	65	0.4
Lothian	24	0.5	162	0.4
Forth Valley	15	0.8	70	0.4
Grampian	30	0.8	118	0.4
Orkney	*	*	5	0.4
Ayrshire and Arran	24	1.0	102	0.5
Borders	8	1.1	28	0.5
Tayside	18	0.8	108	0.5
Greater Glasgow and Clyde	58	0.9	318	0.5
Fife	17	0.7	114	0.6
Shetland	*	*	6	0.6
Dumfries and Galloway	19	1.9	56	0.6
Western Isles	*	*	9	0.7
<b>Scotland</b>	<b>270</b>	<b>0.8</b>	<b>1,285</b>	<b>0.5</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Other Statistics

### My Diabetes My Way

“My Diabetes My Way” ([www.mydiabetesmyway.scot.nhs.uk](http://www.mydiabetesmyway.scot.nhs.uk)) is the NHS Scotland interactive diabetes website that helps to support people who have diabetes and their carers.

**Table 126 Numbers of people with type 1 and type 2 diabetes registered to access and actively accessing their clinical information using the “My Diabetes My Way” website by year, Scotland 2013-2019.**

Year	Registered Users				Active users	
	Type 1 diabetes	Type 2 diabetes	Total people	Yearly change (%)	Number	Yearly change (%)
2019	13,327	34,016	47,343	17.9	26,361	21.1
2018	12,120	28,021	40,141	28.2	21,768	31.6
2017	9,972	21,337	31,309	29.1	16,536	39.7
2016	8,570	15,685	24,255	43.2	11,840	58.6
2015	6,456	10,478	16,934	67.6	7,463	101.8
2014	2,722	7,383	10,105	55.0	3,699	92.4
2013	2,195	4,325	6,520	*	1,923	*

Note: \* - the Yearly Change (%) for 2013 cannot be calculated as no data is available for the previous year.

At the end of 2019, 26,361 people had accessed their results using “My Diabetes My Way” (Table 126). During the final 3 months of 2019, a total of 7,040 (26.7% of all active users) had logged in. Healthcare providers across NHS Scotland are encouraged to raise awareness of My Diabetes My Way services amongst their patient cohorts.

My Diabetes My Way is currently offering to complete a mail-out on behalf of GP Practices in order to make unregistered people aware of the service. This mail-out will be completed at no cost to the practice on verification of a patient list, provided by SCI-Diabetes.

Further information and awareness materials may be requested by emailing the My Diabetes My Way project team on [mydiabetesmyway@nhs.net](mailto:mydiabetesmyway@nhs.net).

## My Diabetes My Way Regional Detail

The table below shows the number of people who had registered to access their own clinical information using the website by the end of 2019. Records access is a key objective of the Scottish Diabetes Improvement Plan.

**Table 127 Number and percentage of people with type 1 and type 2 diabetes registered to access their clinical information using the “My Diabetes My Way” website by NHS board ordered by decreasing total percentage of registered users, Scotland 2019.**

NHS board	Type 1 diabetes			Type 2 diabetes			Total		
	n	Pop.	%	n	Pop.	%	n	Pop.	%
Orkney	69	125	55.2	160	1,115	14.3	229	1,240	18.5
Greater Glasgow and Clyde	2,939	6,724	43.7	9,083	58,641	15.5	12,022	65,365	18.4
Borders	331	741	44.7	888	6,154	14.4	1,219	6,895	17.7
Shetland	53	152	34.9	147	1,005	14.6	200	1,157	17.3
Tayside	806	2,301	35.0	3,282	21,566	15.2	4,088	23,867	17.1
Grampian	1,502	3,622	41.5	3,619	26,376	13.7	5,121	29,998	17.1
Lothian	2,392	5,139	46.5	4,598	37,881	12.1	6,990	43,020	16.2
Western Isles	51	207	24.6	188	1,353	13.9	239	1,560	15.3
Forth Valley	1,082	1,972	54.9	1,600	16,074	10.0	2,682	18,046	14.9
Lanarkshire	1,888	4,571	41.3	3,983	36,596	10.9	5,871	41,167	14.3
Fife	671	2,268	29.6	2,520	20,390	12.4	3,191	22,658	14.1
Ayrshire and Arran	712	2,399	29.7	2,035	22,450	9.1	2,747	24,849	11.1
Dumfries and Galloway	264	1,018	25.9	802	8,713	9.2	1,066	9,731	11.0
Highland	567	2,213	25.6	1,111	16,128	6.9	1,678	18,341	9.1
<b>Scotland</b>	<b>13,327</b>	<b>33,452</b>	<b>39.8</b>	<b>34,016</b>	<b>274,442</b>	<b>12.4</b>	<b>47,343</b>	<b>307,894</b>	<b>15.4</b>

Note: The above figures show the number of people who had registered to access their diabetes data at the end of 2019. Registration may be initiated by the patient via the My Diabetes My Way website, or by a clinician using SCI-Diabetes. Following registration, a patient must provide their consent to proceed and verify their email address. At this stage, a username and password are emailed to the patient.

## NHS Research Scotland (NRS) Diabetes Research Register'

The NRS Diabetes Research Register allows patient with diabetes living in Scotland to give their permission to be matched to and contacted about taking part in diabetes-related research. The table below shows the number of patients who had joined the register by the end of 2019.

**Table 128 Numbers of people with type 1 and type 2 diabetes who had joined the NRS Diabetes Register by the end of 2019, by NHS board, Scotland 2019.**

NHS board	People on the NRS Diabetes Register			People with type 1 or type 2 diabetes (n)	Percentage of people with type 1 or type 2 diabetes on the NRS Diabetes Register (%)
	Type 1 diabetes	Type 2 diabetes	Total		
Ayrshire and Arran	29	76	105	25,012	0.4
Borders	18	30	48	7,032	0.7
Dumfries and Galloway	131	508	639	9,846	6.5
Fife	208	361	569	22,854	2.5
Forth Valley	84	180	264	18,216	1.4
Grampian	177	598	775	30,251	2.6
Greater Glasgow and Clyde	796	2,580	3,376	66,332	5.1
Highland	474	745	1,219	18,751	6.5
Lanarkshire	248	649	897	41,898	2.1
Lothian	984	1,696	2,680	44,016	6.1
Orkney	*	*	*	1,249	*
Shetland	*	*	*	1,173	*
Tayside	451	2,554	3,005	24,187	12.4
Western Isles	*	*	11	1,573	0.7
<b>Scotland</b>	<b>3,615</b>	<b>9,981</b>	<b>13,596</b>	<b>312,390</b>	<b>4.4</b>

Note: \* indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

Individuals are able to sign up to the NRS Diabetes Register directly at:

<https://www.nhsresearchscotland.org.uk/research-areas/diabetes/get-involved>

NRS Diabetes offer a mail-out on behalf of GP Practices to give patients the opportunity to join the register. Signing up is a simple process which can be completed by email or by posting



back a registration leaflet to NRS Diabetes for free. Mail-outs will be completed by NRS Diabetes at no cost or extra work to the practice. The only step required is for the practice to verify an externally produced list to remove any unsuitable patients.

To receive further information, registration leaflets or awareness materials or, if you are a researcher interested in using the register please contact NRS Diabetes at [administrator-sdrn@dundee.ac.uk](mailto:administrator-sdrn@dundee.ac.uk).

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- Prof Helen Colhoun
- Dr Scott Cunningham
- Dr Fraser Gibb
- Dr Brian Kennon
- Dr Sam Philip
- Dr Stuart Ritchie
- Dr William Simpson
- Mrs Diane Smith
- Prof Sarah Wild
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# List of Tables

Table 1	Number of people with diabetes, crude prevalence of diabetes and annual changes in numbers/proportions by year for Scotland, 2010-2019.
Table 2	Number of people with diabetes by diabetes type, Scotland 2019.
Table 3	Type 1 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by age, Scotland 2012-2019.
Table 4	Type 1 diabetes: Incidence rate (per 100,000 population per year) by age and year, Scotland 2011-2019.
Table 5	Duration of diabetes (years since diagnosis) for people with type 1 diabetes, Scotland 2019.
Table 6	Type 1 diabetes: Number and percentage of people with a record of HbA <sub>1c</sub> in each HbA <sub>1c</sub> category, Scotland 2010-2019.
Table 7	Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and year, Scotland 2013-2019.
Table 8	Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and NHS board, ranked from high to low by percentage of people aged under 18 using an insulin pump, Scotland 2019.
Table 9	Number and percentage of people with type 1 diabetes with a recorded BP within the previous 15 months in Scotland 2010-2019.
Table 10	Number and percentage of people with type 1 diabetes with cholesterol < 5mmol/l, by year (denominator those with recording of cholesterol within the previous 15 months), Scotland 2012-2019.
Table 11	Type 1 diabetes: Number and percentage of people with cholesterol ≤5mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol ≤5mmol/l, Scotland 2019.
Table 12	Percentage of people with type 1 diabetes who were recorded as current, ex- or never-smokers (denominator those with record of smoking status), Scotland 2012-2019.
Table 13	Percentage of people with type 1 diabetes who are recorded as having had a previous myocardial infarction (MI) or cardiac revascularisation, Scotland 2012-2019.
Table 14	Percentage of people with type 1 diabetes who had a record of serum creatinine within the previous 15 months, Scotland 2012-2019.

Table 15	Number and percentage of people with type 1 diabetes who have a record of estimated urinary albumin value available on SCI-Diabetes within the previous 15 months, Scotland 2012-2019.
Table 16	Percentage of people with type 1 diabetes who were recorded as having had diabetic eye-screening, ophthalmology care or an appropriate suspension from screening (depending on methodology at the time of the report), Scotland 2012-2019.
Table 17	Percentage of people with type 1 diabetes who had a record of ever having had a foot ulcer, Scotland 2012-2019.
Table 18	Proportions of all people with diabetes under 16 years of age by age band and health board, Scotland 2019.
Table 19	Number of new cases and incidence rate (per 100,000 population per year) for people under 16 years of age by age band and health board, Scotland 2019.
Table 20	Number and percentage of people with diabetes under 16 years of age recorded as using an insulin pump by NHS board, Scotland 2019.
Table 21	Number and percentage of people with diabetes under 16 years of age eligible for diabetic retinopathy screening (DRS) who were screened within the last 15 months by NHS board, Scotland 2019.
Table 22	Number and Percentage of people with diabetes under 16 years of age with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2019.
Table 23	Number and percentage of people with diabetes under 16 years of age with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2019.
Table 24	Number and percentage of people with diabetes under 16 years of age recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2019.
Table 25	Number and percentage of people with diabetes under 16 years of age recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2019.
Table 26	Number and percentage of people with diabetes under 16 years of age with a recorded HbA <sub>1c</sub> within the previous 15 months by NHS board, Scotland 2019.
Table 27	Applicability of Care Processes by Age Category.
Table 28	Measure 1: Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2019.

Table 29	Measure 1: Receiving all applicable processes of care - Type 1 and other age 12-17 by NHS board, Scotland 2019.
Table 30	Measure 1: Receiving all applicable processes of care - Type 1 Age 18+ by NHS board, Scotland 2019.
Table 31	Measure 1: Receiving all applicable processes of care - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 32	Measure 2: HbA <sub>1c</sub> in target range after 1 year - Type 1 and other age 0-11 by NHS board, Scotland 2019.
Table 33	Measure 2: HbA <sub>1c</sub> in target range after 1 year - Type 1 and other age 12-17 by NHS board, Scotland 2019.
Table 34	Measure 2: HbA <sub>1c</sub> in target range after 1 year - Type 1 age 18+ by NHS board, Scotland 2019.
Table 35	Measure 2: HbA <sub>1c</sub> in target range after 1 year - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 36	Measure 3: HbA <sub>1c</sub> control - Type 1 and other age 0-11 by NHS board, Scotland 2019.
Table 37	Measure 3: HbA <sub>1c</sub> control - Type 1 and other age 12-17 by NHS board, Scotland 2019.
Table 38	Measure 3: HbA <sub>1c</sub> control - Type 1 age 18+ by NHS board, Scotland 2019.
Table 39	Measure 3: HbA <sub>1c</sub> control - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 40	Measure 4: Current smokers - Type 1 and other age 12-17 by NHS board, Scotland 2019.
Table 41	Measure 4: Current smokers - Type 1 age 18+ by NHS board, Scotland 2019.
Table 42	Measure 4: Current smokers - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 43	Measure 5: Cholesterol and blood pressure - Type 1 age 50-69 by NHS board, Scotland 2019.
Table 44	Measure 5: Cholesterol and blood pressure - Type 2 and other age 50-69 by NHS board, Scotland 2019.
Table 45	Measure 6: Foot ulcers - Type 1 age 18+ by NHS board, Scotland 2019.
Table 46	Measure 6: Foot ulcers - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 47	Measure 7: Retinopathy screening – Type 1 and other age 12-17 by NHS board, Scotland 2019.

Table 48	Measure 7: Retinopathy screening - Type 1 age 18+ by NHS board, Scotland 2019.
Table 49	Measure 7: Retinopathy screening - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 50	Measure 8: End Stage Renal Disease - Type 1 age 18+ by NHS board, Scotland 2019.
Table 51	Measure 8: End Stage Renal Disease - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 52	Measure 9: Insulin pump therapy - Type 1 age 0-17 by NHS board, Scotland 2019.
Table 53	Measure 9: Insulin pump therapy - Type 1 age 18+ by NHS board, Scotland 2019.
Table 54	Measure 10: Significant weight loss - Type 1 age 18+ by NHS board, Scotland 2019.
Table 55	Measure 10: Significant weight loss - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 56	Measure 11: Attended structured education - Type 1 age 18+ by NHS board, Scotland 2019.
Table 57	Measure 11: Attended structured education - Type 2 and other age 18+ by NHS board, Scotland 2019.
Table 58	Measure 12: Disengaged from diabetes care - Type 1 age 18-25 by NHS board, Scotland 2019.
Table 59	Measure 12: Disengaged from diabetes care – Type 1 Age 26+ by NHS board, Scotland 2019.
Table 60	Measure 12: Disengaged from diabetes care - Type 2 and other age 18-25 by NHS board, Scotland 2019.
Table 61	Measure 12: Disengaged from diabetes care - Type 2 and other age 26+ by NHS board, Scotland 2019.
Table 62	Crude and age-adjusted prevalence of diabetes (all types), by NHS board, ranked by age-adjusted prevalence, Scotland 2019.
Table 63	Crude prevalence of diabetes for people aged 65 and over (all types), by NHS board, ranked by prevalence, Scotland 2019.
Table 64	Type 2 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by age, Scotland 2012-2019.
Table 65	Type 2 diabetes: Incidence rate (per 100,000 population per year) by age, Scotland 2011-2019.

Table 66	Type 1 diabetes: Number of new cases and crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by rate in 2019, Scotland 2013-2019.
Table 67	Type 1 diabetes: Crude incidence rate of new cases for all ages (cases per 100,000 population per year) by NHS board, ranked by rate in 2019, Scotland 2011-2019.
Table 68	Type 2 diabetes: Number of new cases and crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by rate in 2019, Scotland 2013-2019.
Table 69	Type 2 diabetes: Crude incidence rate for all ages (cases per 100,000 population per year) by NHS board, ranked by rate in 2019, Scotland 2011-2019.
Table 70	Age group of people recorded as having type 1 or type 2 diabetes, percentage in each age group and cumulative percentage in each age group, by diabetes type, Scotland 2019.
Table 71	The number and crude percentage of the diabetic population (all diabetes types) who have died within the last year, by NHS board, ranked by mortality, Scotland 2019.
Table 72	Number of people with diabetes and the distribution of diabetes type, by NHS board, ranked by the percentage with type 2 diabetes, Scotland 2019.
Table 73	Type 1 diabetes: Completeness of recording of ethnic group by NHS board, ranked by decreasing completeness, Scotland 2019.
Table 74	Type 2 diabetes: Completeness of recording of ethnic group by NHS board, ranked by decreasing completeness, Scotland 2019.
Table 75	Completeness of recording of ethnic group for people with diabetes (type 1 and type 2 combined) by year, Scotland 2010-2019.
Table 76	Recorded ethnic group for type 1, type 2 and combined type 1 and type 2 diabetes, Scotland 2019.
Table 77	Duration of diabetes (years since diagnosis) by type of diabetes for people with type 1 or type 2 diabetes, Scotland 2019.
Table 78	Proportion of people with type 1 or type 2 diabetes (combined) with a record of BMI in the previous 15 months, Scotland 2019.
Table 79	Proportion of people recorded as having type 1 or type 2 diabetes with a record of BMI within the previous 15 months, by NHS board and diabetes type, ranked by decreasing completeness for type 2 diabetes, Scotland 2019.

- Table 80 Type 1 diabetes: Percentage of people with a record of BMI in the last 15 months grouped by BMI category, NHS board and ranked from low to high by percentage with BMI  $\geq 40\text{kg/m}^2$ , Scotland 2019.
- Table 81 Type 2 diabetes: Percentage of people with a record of BMI in the last 15 months grouped by BMI category, NHS board and ranked from low to high by percentage with BMI  $\geq 40\text{kg/m}^2$ , Scotland 2019.
- Table 82 Percentage of people recorded as having type 1 or type 2 diabetes (combined) with a record of HbA<sub>1c</sub> in previous 15 months, Scotland 2019.
- Table 83 Type 2 diabetes: Number and percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category by year, Scotland 2010-2019.
- Table 85 Type 1 diabetes: HbA<sub>1c</sub> category as a percentage of people with HbA<sub>1c</sub> recorded in previous 15 months, by NHS board, ranked from high to low by percentage with HbA<sub>1c</sub> under 58mmol/mol, Scotland 2019.
- Table 86 Type 2 diabetes: HbA<sub>1c</sub> category as percentage of people with HbA<sub>1c</sub> recorded in previous 15 months, by NHS board, ranked from high to low by percentage with HbA<sub>1c</sub> under 58mmol/mol, Scotland 2019.
- Table 87 Type 1 diabetes: HbA<sub>1c</sub> category as percent of all those with HbA<sub>1c</sub> recorded in the previous 15 months (HbA<sub>1c</sub> in mmol/mol), by NHS board, ranked by percentage with HbA<sub>1c</sub> over 75mmol/mol, Scotland 2019.
- Table 88 Type 2 diabetes: HbA<sub>1c</sub> category as percent of all those with HbA<sub>1c</sub> recorded in the previous 15 months (HbA<sub>1c</sub> in mmol/mol), by NHS board, ranked by percentage with HbA<sub>1c</sub> over 75 mmol/mol, Scotland 2019.
- Table 89 Mean HbA<sub>1c</sub> (mmol/mol) recorded in the previous 15 months, by NHS board, for people with type 1 diabetes by age and for type 2 diabetes (all ages combined), ranked by mean HbA<sub>1c</sub> for those with type 2 diabetes, Scotland 2019.
- Table 90 Number and percentage of people with type 1 or type 2 diabetes with a recorded BP within the previous 15 months, Scotland 2010-2019.
- Table 91 Number and percentage of people with type 1 and type 2 diabetes with a recording of BP in the previous 15 months, by NHS board and diabetes type, ranked by figures for type 2 diabetes, Scotland 2019.
- Table 92 Type 1 diabetes: Number and percentage of people with systolic blood pressure (SBP)  $\leq 140$  mmHg by NHS board, ranked by percentage  $> 140$  mmHg, Scotland 2019.
- Table 93 Type 1 diabetes: Number and percentage of people most recent blood pressure in the last 15 months  $< 130$  mmHg (systolic) and  $\leq 80$  mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.



- Table 94 Type 2 diabetes: Number and percentage of people with systolic blood pressure (SBP)  $\leq$  140 mmHg by NHS board, ranked by percentage  $>$  140 mmHg, Scotland 2019.
- Table 95 Type 2 diabetes: Number and percentage of people with most recent blood pressure in the last 15 months  $<$  130 mmHg (systolic) and  $\leq$  80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.
- Table 96 Percentage of people with diabetes (type 1 and type 2 combined) with systolic blood pressure (SBP)  $\leq$  140 mmHg by year, Scotland 2010-2019.
- Table 97 Type 1 diabetes: Mean BP (mmHg) recorded in previous 15 months in people aged  $<$  40 years, by NHS board, ranked by mean systolic BP, Scotland 2019.
- Table 98 Type 2 diabetes: Mean BP recorded in previous 15 months in people aged 50-59 years, by NHS board, ranked by mean systolic BP, Scotland 2019.
- Table 99 Number and percentage of people with diabetes (type 1 and type 2 combined) with cholesterol  $<$  5mmol/l, by year (denominator those with recording of cholesterol within the previous 15 months) by year, Scotland 2010-2019.
- Table 100 Type 2 diabetes: Number and percentage of people with cholesterol  $\leq$  5mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol  $\leq$  5mmol/l, Scotland 2019.
- Table 101 Type 2 diabetes: Mean total cholesterol recorded in previous 15 months in people aged 50-59 years, by NHS board, ranked by mean cholesterol, Scotland 2019.
- Table 102 Percentage of people with diabetes (type 1 and type 2 combined) who were recorded as current, ex- or never-smokers (denominator those with record of smoking status) by year, Scotland 2010-2019.
- Table 103 Type 1 diabetes: Percentage of people who were recorded as current, ex- or never-smokers, by NHS board (denominator those with a record of smoking status); ordered by current smoker percentage, Scotland 2019.
- Table 104 Type 2 diabetes: Percentage of people who were recorded as current, ex- or never-smokers, by NHS board (denominator those with a record of smoking status); ranked by percentage who are current smokers, Scotland 2019.
- Table 105 Percentage of people with diabetes (type 1 and type 2 combined) who are recorded as having had a previous myocardial infarction (MI) or cardiac revascularisation by year, Scotland 2010-2019.
- Table 106 Number and percentage of people with type 1 or type 2 diabetes recorded as having had a previous myocardial infarction (MI), by diabetes type and NHS board, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.

- Table 107 Number and percentage of people with type 1 or type 2 diabetes who have a record of cardiac revascularisation by NHS board and diabetes type, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.
- Table 108 Number and percentage of people with type 1 or type 2 diabetes who were recorded as ever having had a stroke, by NHS board and diabetes type, ranked from low to high by percentage among people with type 2 diabetes, Scotland 2019.
- Table 109 Percentage of people with diabetes (type 1 and type 2 combined) who had a record of serum creatinine within the previous 15 months by year, Scotland 2010-2019.
- Table 110 Number and percentage of people with type 1 or type 2 diabetes who have a record of serum creatinine within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.
- Table 111 Number and percentage of people with type 1 or type 2 diabetes and a record of estimated urinary albumin value available on SCI-Diabetes within the previous 15 months, by diabetes type by year, Scotland 2012-2019.
- Table 112 Number and percentage of people with type 1 or type 2 diabetes with a record of estimated urinary albumin value within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.
- Table 113 Number and percentage of people with type 1 or type 2 diabetes with a record of estimated glomerular filtration rate (eGFR) within the previous 15 months, by NHS board and diabetes type, ranked from high to low by percentage of people with type 2 diabetes, Scotland 2019.
- Table 114 Number and percentage of people with type 1 or type 2 diabetes recorded as having end stage renal failure, by NHS board and diabetes type, ranked by percentage of people with type 2 diabetes, Scotland 2019.
- Table 115 Percentage of people with diabetes (type 1 and type 2 combined) who were recorded as having had eye-screening, ophthalmology care or an appropriate suspension from screening (depending on methodology at the time of the report) by year, Scotland 2010-2019
- Table 116 Number and percentage of people with type 1 and type 2 diabetes of appropriate age (>12 years) who were either recorded as having had diabetic retinopathy screening within the previous 15 months, were attending specialist ophthalmology clinics or were appropriately suspended from screening as a proportion of the total number of people who had a record of date of birth and were over 12 years of age; by NHS board and diabetes type, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2019.

- Table 117 Numbers of people eligible for retinopathy screening, numbers screened and percentages of those who had a record of screening (type 1 and type 2 combined), ranked from high to low by percentage of screened people, Scotland 2019.
- Table 118 Number and prevalence (per 10,000 people with type 1 diabetes who are recorded as blind) of causes of blindness, ranked from low to high by prevalence of blindness caused by diabetes, Scotland 2019.
- Table 119 Number and prevalence (per 10,000 people with type 2 diabetes who are recorded as blind) of causes of blindness, ranked by diabetic cause prevalence, Scotland 2019.
- Table 120 Type 1 diabetes: Number and percentage of people with active foot disease, high, moderate or low foot risk score recorded in the previous 15 months, by NHS board, ranked by decreasing percentage foot risk score recorded, Scotland 2019.
- Table 121 Type 2 diabetes: Number and percentage of people with active foot disease, high, moderate or low foot risk score recorded in the previous 15 months, by NHS board, ranked by decreasing percentage foot risk score recorded, Scotland 2019.
- Table 122 Percentage of people with diabetes (type 1 and type 2 combined) who had a record of ever having had a foot ulcer by year, Scotland 2010-2019.
- Table 123 Number and percentage of people with diabetes with a record of ever having had a foot ulcer, by NHS board and diabetes type, ranked by ascending percentage of people with type 2 diabetes, Scotland 2019.
- Table 124 Number and percentage of people with diabetes (type 1 and type 2 combined) who had a record of ever having had a major lower limb amputation by year, Scotland 2010-2019.
- Table 125 Number and percentage of people with type 1 or type 2 diabetes with a record of ever having had a major lower limb amputation, by NHS board and diabetes type, ranked by ascending percentage of people with type 2 diabetes, Scotland 2019.
- Table 126 Numbers of people with type 1 and type 2 diabetes registered to access and actively accessing their clinical information using the “My Diabetes My Way” website by year, Scotland 2013-2019.
- Table 127 Number and percentage of people with type 1 and type 2 diabetes registered to access their clinical information using the “My Diabetes My Way” website by NHS board ordered by decreasing total percentage of registered users, Scotland 2019.
- Table 128 Numbers of people with type 1 and type 2 diabetes who had joined the NRS Diabetes Register by the end of 2019, by NHS board, Scotland 2019.
- Table 129 Progress towards links from SCI Store to SCI-Diabetes, Scotland, February 2020.

Table 130 Progress towards links from Patient Administration Systems to SCI-Diabetes, Scotland, February 2020.

Table 131 Comparison of distribution of key risk factors between Scotland and England/Wales (E&W) by type of diabetes, 2019.

# List of Figures

- Figure 1 Number of people recorded with diabetes (all types) by year in Scotland for 2010-2019.
- Figure 2 Proportions of diabetes population by type, Scotland 2019.
- Figure 3 Type 1 diabetes: Percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2010-2019.
- Figure 4 Type 1 diabetes: Percentage of people with cholesterol  $\leq 5\text{mmol/l}$ , by NHS board (denominator those with recording of cholesterol within the previous 15 months), Scotland 2019.
- Figure 5 Proportions of all people with diabetes under 16 years of age by age band and health board, Scotland 2019.
- Figure 6 Incidence rate (per 100,000 population per year) for people under 16 years of age by age band and health board, Scotland 2019.
- Figure 7 Percentage of people with diabetes under 16 years of age recorded as using an insulin pump by NHS board, Scotland 2019.
- Figure 8 Percentage of people with diabetes under 16 years of age eligible for diabetic retinopathy screening (DRS) who were screened within the last 15 months by NHS board, Scotland 2019.
- Figure 9 Percentage of people with diabetes under 16 years of age with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2019.
- Figure 10 Percentage of people with diabetes under 16 years of age with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2019.
- Figure 11 Percentage of people with diabetes under 16 years of age recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2019.
- Figure 12 Percentage of people with diabetes under 16 years of age recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2019.
- Figure 13 Percentage of people with diabetes under 16 years of age with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2019.
- Figure 14 Measure 1: Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2019.
- Figure 15 Measure 1: Receiving all applicable processes of care - Type 1 and other age 12-17 by NHS board, Scotland 2019.

- Figure 16 Measure 1: Receiving all applicable processes of care - Type 1 Age 18+ by NHS board, Scotland 2019.
- Figure 17 Measure 1: Receiving all applicable processes of care - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 18 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 0-11 by NHS board, Scotland 2019.
- Figure 19 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 and other age 12-17 by NHS board, Scotland 2019.
- Figure 20 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 21 Measure 2: HbA<sub>1c</sub> in target range after 1 year - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 22 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 0-11 by NHS board, Scotland 2019.
- Figure 23 Measure 3: HbA<sub>1c</sub> control - Type 1 and other age 12-17 by NHS board, Scotland 2019.
- Figure 24 Measure 3: HbA<sub>1c</sub> control - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 25 Measure 3: HbA<sub>1c</sub> control - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 26 Measure 4: Current smokers - Type 1 and other age 12-17 by NHS board, Scotland 2019.
- Figure 27 Measure 4: Current smokers - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 28 Measure 4: Current smokers - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 29 Measure 5: Cholesterol and blood pressure - Type 1 age 50-69 by NHS board, Scotland 2019.
- Figure 30 Measure 5: Cholesterol and blood pressure - Type 2 and other age 50-69 by NHS board, Scotland 2019.
- Figure 31 Measure 6: Foot ulcers - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 32 Measure 6: Foot ulcers - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 33 Measure 7: Retinopathy screening - Type 1 and other age 12-17 by NHS board, Scotland 2019.
- Figure 34 Measure 7: Retinopathy screening - Type 1 age 18+ by NHS board, Scotland 2019.

- Figure 35 Measure 7: Retinopathy screening - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 36 Measure 8: End Stage Renal Disease - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 37 Measure 8: End Stage Renal Disease - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 38 Measure 9: Insulin pump therapy - Type 1 age 0-17 by NHS board, Scotland 2019.
- Figure 39 Measure 9: Insulin pump therapy - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 40 Measure 10: Significant weight loss - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 41 Measure 10: Significant weight loss - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 42 Measure 11: Attended structured education - Type 1 age 18+ by NHS board, Scotland 2019.
- Figure 43 Measure 11: Attended structured education - Type 2 and other age 18+ by NHS board, Scotland 2019.
- Figure 44 Measure 12: Disengaged from diabetes care - Type 1 age 18-25 by NHS board, Scotland 2019.
- Figure 45 Measure 12: Disengaged from diabetes care - Type 1 age 26+ by NHS board, Scotland 2019.
- Figure 46 Measure 12: Disengaged from diabetes care - Type 2 and other age 18-25 by NHS board, Scotland 2019.
- Figure 47 Measure 12: Disengaged from diabetes care - Type 2 and other age 26+ by NHS board, Scotland 2019.
- Figure 48 Crude diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2019.
- Figure 49 Age-adjusted diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2019.
- Figure 50 Number of people with diabetes (all types) in each NHS Health Board, Scotland 2019.
- Figure 51 Type 1 diabetes: Age distribution of people recorded as having diabetes compared with age distribution of general population, Scotland 2019.
- Figure 52 Type 2 diabetes: Age distribution of people recorded as having diabetes compared with age distribution of general population, Scotland 2019.



- Figure 53 Completeness of recording of ethnic group for people recorded as having type 1 or type 2 diabetes (combined), Scotland, from 2018 to 2019.
- Figure 54 Proportion of people recorded as having type 1 or type 2 diabetes (combined) who had a record of BMI, Scotland, from 2018 to 2019.
- Figure 55 Percentage of people with type 1 or type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by NHS board and diabetes type, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2019.
- Figure 56 Proportion of people with type 1 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by health board, Scotland, from 2018 to 2019.
- Figure 57 Proportion of people with type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months by health board, Scotland, from 2018 to 2019.
- Figure 58 Type 1 diabetes: Percentage of people with a recorded HbA<sub>1c</sub>, in each HbA<sub>1c</sub> category for HbA<sub>1c</sub> recorded in the previous 15 months, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2019.
- Figure 59 Type 2 diabetes: Percentage of people with a recorded HbA<sub>1c</sub>, in each HbA<sub>1c</sub> category for HbA<sub>1c</sub> recorded in the previous 15 months, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2019.
- Figure 60 Percentage of people with type 1 or type 2 diabetes (by diabetes type) with a recording of BP in the previous 15 months, by NHS board; ranked by figures for type 2, Scotland 2019.
- Figure 61 Type 1 diabetes: Percentage of people with most recent systolic blood pressure (SBP)  $\leq 140$  mmHg in the last 15 months by NHS board, ranked by percentage  $> 140$  mmHg, Scotland 2019.
- Figure 62 Type 1 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2018 to 2019.
- Figure 63 Type 1 diabetes: Percentage of people with most recent blood pressure in the last 15 months  $< 130$  mmHg (systolic) and  $\leq 80$  mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.
- Figure 64 Type 2 diabetes: Percentage of people with most recent systolic blood pressure (SBP)  $\leq 140$  mmHg in the last 15 months by NHS board, ranked by percentage  $> 140$  mmHg, Scotland 2019.
- Figure 65 Type 2 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2018 to 2019.



- Figure 66 Type 2 diabetes: Percentage of people with most recent blood pressure in the last 15 months  $< 130$  mmHg (systolic) and  $\leq 80$  mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2019.
- Figure 67 Percentage of people with type 1 or type 2 diabetes with a record of cholesterol within the previous 15 months by diabetes type and NHS board, ranked by the percentage of people with type 2 diabetes with a record of cholesterol, Scotland 2019.
- Figure 68 Percentage of people with diabetes (type 1 and type 2 combined) with a record of cholesterol within the previous 15 months, Scotland, from 2018 to 2019.
- Figure 69 Type 2 diabetes: Percentage of people with cholesterol  $\leq 5$  mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), Scotland 2019.
- Figure 70 Percentage of people with diabetes (type 1 and type 2 combined) with cholesterol  $\leq 5$  mmol/l within the previous 15 months, Scotland, from 2018 to 2019.
- Figure 71 Type 1 diabetes: Smoking status as a percentage of all those with type 1 diabetes, by NHS Health Board, ordered by current smoker percentage, Scotland 2019.
- Figure 72 Type 2 diabetes: Smoking status as a percentage of all those with type 2 diabetes, by NHS Health Board, ordered by current smoker percentage, Scotland 2019.
- Figure 73 Percentage of people with type 1 or type 2 diabetes with a record of diabetic retinopathy screening within the previous 15 months through retinal screening service, including those attending ophthalmology clinics and those suspended, by NHS board and diabetes type, ranked from high to low by percentage among people with type 2 diabetes, Scotland 2019.

# Appendix 1: SCI-Diabetes Data Sources

SCI-Diabetes is NHS Scotland's diabetes patient management system. It is used in all fourteen health boards and holds data on all people with diabetes living in Scotland. Its purpose is to ensure that people receive the best possible care for their diabetes by providing authorised members of the healthcare team with the information they require to effectively manage their patients.

## Security and Confidentiality

SCI-Diabetes is available to members of the NHS Scotland healthcare team within the confines of the NHS intranet. SCI-Diabetes can only be accessed via a secure connection and data are never shared with any unauthorised third parties. Most NHS Boards have Diabetes Managed Clinical Networks that have the responsibility for managing access to SCI-Diabetes. In other NHS Boards this access is managed by e Health colleagues.

## Data Sources

SCI-Diabetes is used directly by many professionals, but it also receives data from a variety of data sources in order to maintain its shared electronic record for diabetes. A breakdown of the main sources at February 2020 is as follows:

- Community Health Index (master patient index)
- All ~1,000 general practices across Scotland (EMIS, Vision)
- 42 hospitals (direct data entry on SCI-Diabetes)
- 13 of 14 NHS boards linking to local laboratory data (SCI Store – see below)
- National Diabetic Retinopathy Screening (DRS - Vector) System
- Inpatient Management: 8 NHS boards linking to local patient administration system for admission, discharge and transfer data (TrakCare)
- Connected Ward Meters: 1 NHS board linking ward-based blood glucose measurements. Priority implementation area for national diabetes inpatient management programme
- Scottish Ambulance Service: 1 NHS board linking ambulance service data for ambulance call-outs for hypoglycaemic events.
- Winscribe: 4 NHS Boards linking with Winscribe for digital dictation and letter generation.

Registration onto the system can be initiated via the primary and secondary care feeds, registration onto the DRS system or web patient administration forms. As part of the DRS registration process, primary care users are expected to review their SCI-Diabetes lists periodically to ensure that all people eligible for screening are held.

The current SCI-Store (laboratory data) and Inpatient Management Implementation matrices are shown below.

**Table 129 Progress towards links from SCI Store to SCI-Diabetes, Scotland, February 2020.**

NHS board	Implementation Requested	Status	Comments
Ayrshire and Arran	Yes	Live	
Borders	Yes	Live	
Dumfries and Galloway	Yes	Live	
Fife	Yes	Live	
Fife/Tayside	Yes	Live	
Forth Valley	Yes	Live	
Grampian	Yes	Live	
Greater Glasgow and Clyde	Yes	Live	
Highland	Yes	Not Scheduled	Argyll & Bute data obtained from GG&C SCI-Store.
Lanarkshire	Yes	Live	
Lothian	Yes	Live	
Orkney	Yes	Live	
Shetland	Yes	Live	
Tayside	Yes	Live	
Western Isles	Yes	Live	

**Table 130 Progress towards links from Patient Administration Systems to SCI-Diabetes, Scotland, February 2020.**

NHS board	Implementation Requested	Status	Comments
Ayrshire and Arran	Yes	Live	TrakCare
Borders	Yes	Not Scheduled	TrakCare
Dumfries and Galloway	Yes	Not scheduled	TOPAS
Fife	Yes	Live	TrakCare
Forth Valley	No	Scheduled 2020	TrakCare
Grampian	Yes	Live	TrakCare
Greater Glasgow and Clyde	Yes	Live	TrakCare
Highland	Yes	Live	TrakCare
Lanarkshire	Yes	Live	TrakCare
Lothian	Yes	Live	TrakCare
Orkney	No	Not scheduled	
Shetland	No	Not scheduled	
Tayside	Yes	Live	TrakCare
Western Isles	No	Not scheduled	Cortix

SCI-Diabetes is supporting a national Healthcare Improvement Programme focusing on inpatient diabetes. To provide accurate reporting it is essential that SCI-Diabetes receives data from all hospital patient administration systems and, where relevant, connected ward-based blood glucose meters from systems supplied by Roche and Abbott. At present, NHS Tayside is the only area providing full support for diabetes inpatient management.

In addition to incoming feeds, SCI-Diabetes data are also transferred to external systems:

- National Diabetic Retinopathy Screening: to maintain the call-recall system
- My Diabetes My Way: people accessing their own information
- SCI-Diabetes Audit Server: for regional and national reporting
- Back-Population of over 95% of GP systems: in support of a single-point of data entry

More information about the Scottish Care Information – Diabetes Collaboration (SCI-DC) programme and SCI-Diabetes is available at <http://www.sci-diabetes.scot.nhs.uk/>

## Appendix 2: Comparisons with England and Wales

This section provides a comparison of the results of this survey with the 2018-19 National Diabetes Audit (NDA) in England and Wales<sup>1</sup>. Please note that the definitions and cut-off values for blood pressure do not match exactly, so the figures are not directly comparable. Also, at the time of compilation of this survey, the 2018-19 National Diabetes Audit (NDA) England and Wales Full Report had not been released, so the national prevalence comparison is to the previous year.

- 1 **National Diabetes Audit Report 1 - Care Processes and Treatment Targets 2018-19, Short Report**  
<https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-audit/report-1--care-processes-and-treatment-targets-2018-19-short-report>
- 2 **National Diabetes Audit - Report 1 Care Processes and Treatment Targets 2017-18, Full Report**  
<https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-audit/report-1-care-processes-and-treatment-targets-2017-18-full-report>

### Diabetes Prevalence

The 2019 Scottish Diabetes Survey (Table 1) reports that 5.74% of the whole population had diabetes (312,390 people), compared to the previous year's 6.8% (nearly 3.4 million people) identified from 98.3% of general practices in England and Wales that participated in the National Diabetes Audit 2017-18 Full Report 1, Care Processes and Treatment Targets\_pdf (no. 2, above).

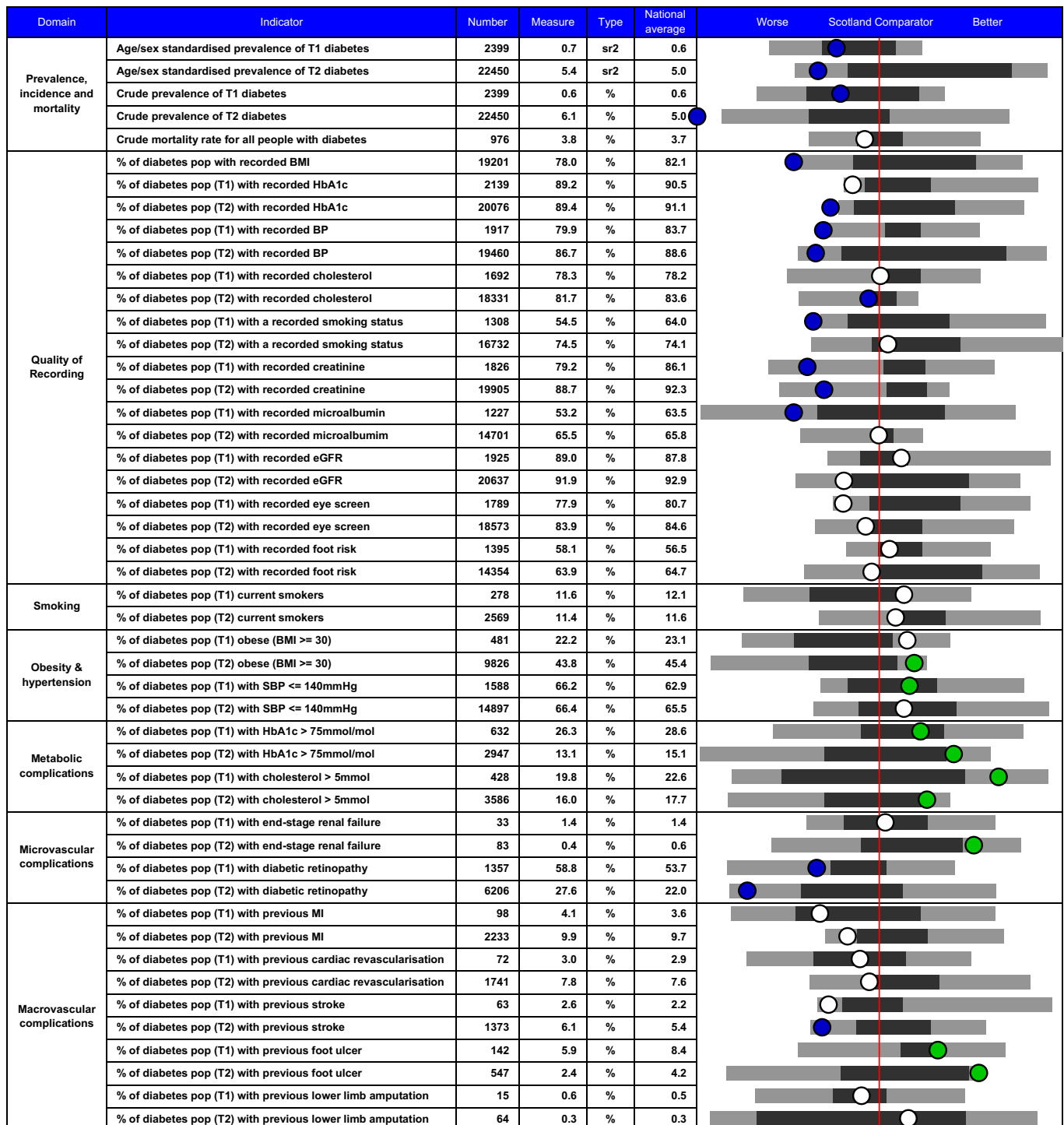
**Table 131 Comparison of distribution of key risk factors between Scotland and England/Wales (E&W) by type of diabetes, 2019.**

Risk Factor	Range	Type 1		Type 2	
		Scotland (%)	E&W (%)	Scotland (%)	E&W (%)
HbA <sub>1c</sub>	< 58 mmol/mol	26.5		55.3	
	≤ 58 mmol/mol		30.9		66.3
BP	<130/80 mmHg	41.4		31.4	
	≤140/80 mmHg		74.5		74.0
Cholesterol	≤ 5 mmol/l	71.0		78.8	
	< 5 mmol/l		73.0		78.2

Note: See Tables 6, 83, 93, 95, 10 and 100 for Scottish figures in this table. The figures for England and Wales are from the National Diabetes Audit Report 1 - Care Processes and Treatment Targets 2018-19, Short Report (no. 1, above).

# Appendix 3: Health Board Performance

## Diabetes Health Board Spine Chart (Ayrshire and Arran) 2019

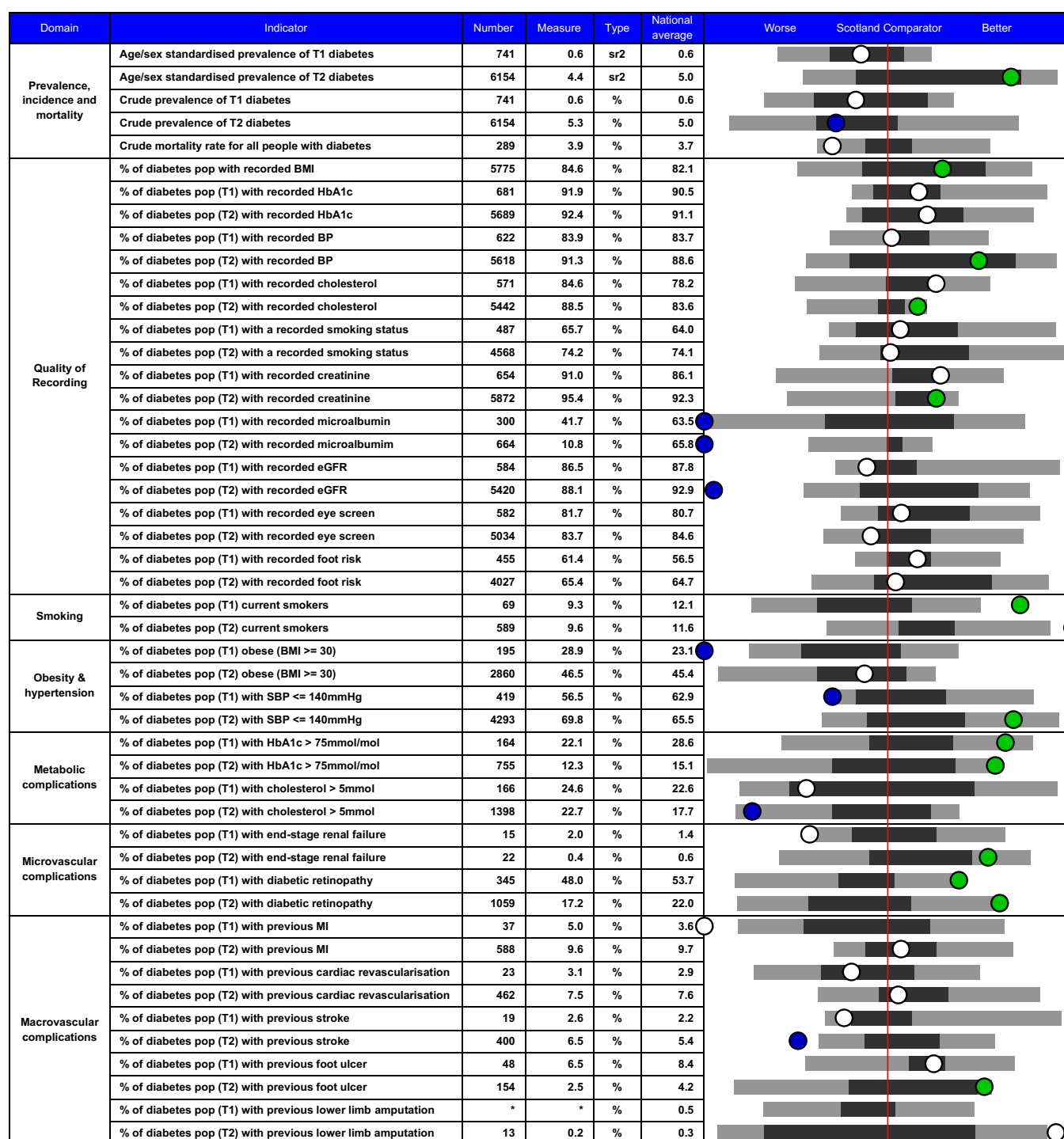


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
 5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Borders) 2019

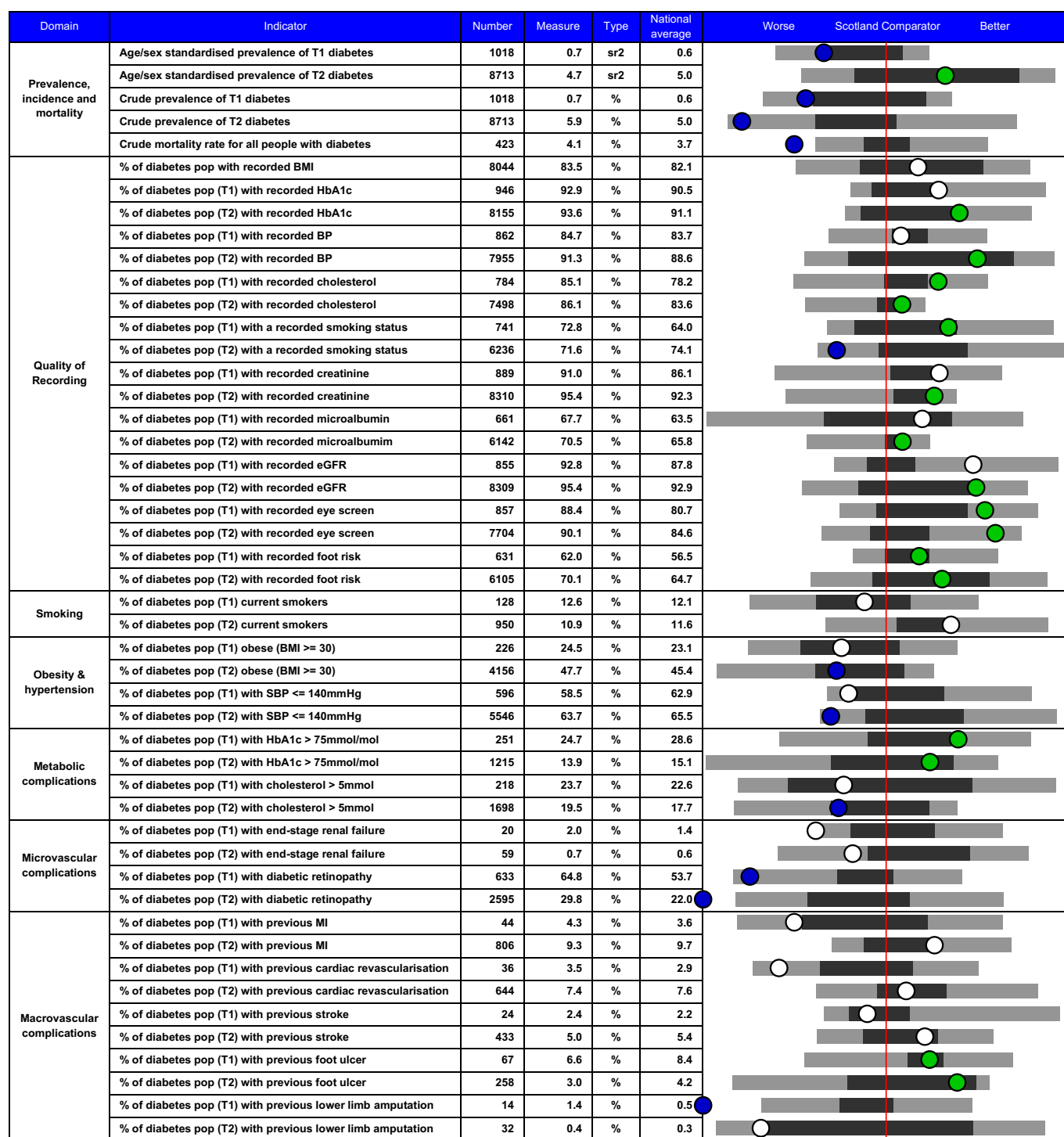


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
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○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
 5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Dumfries and Galloway) 2019



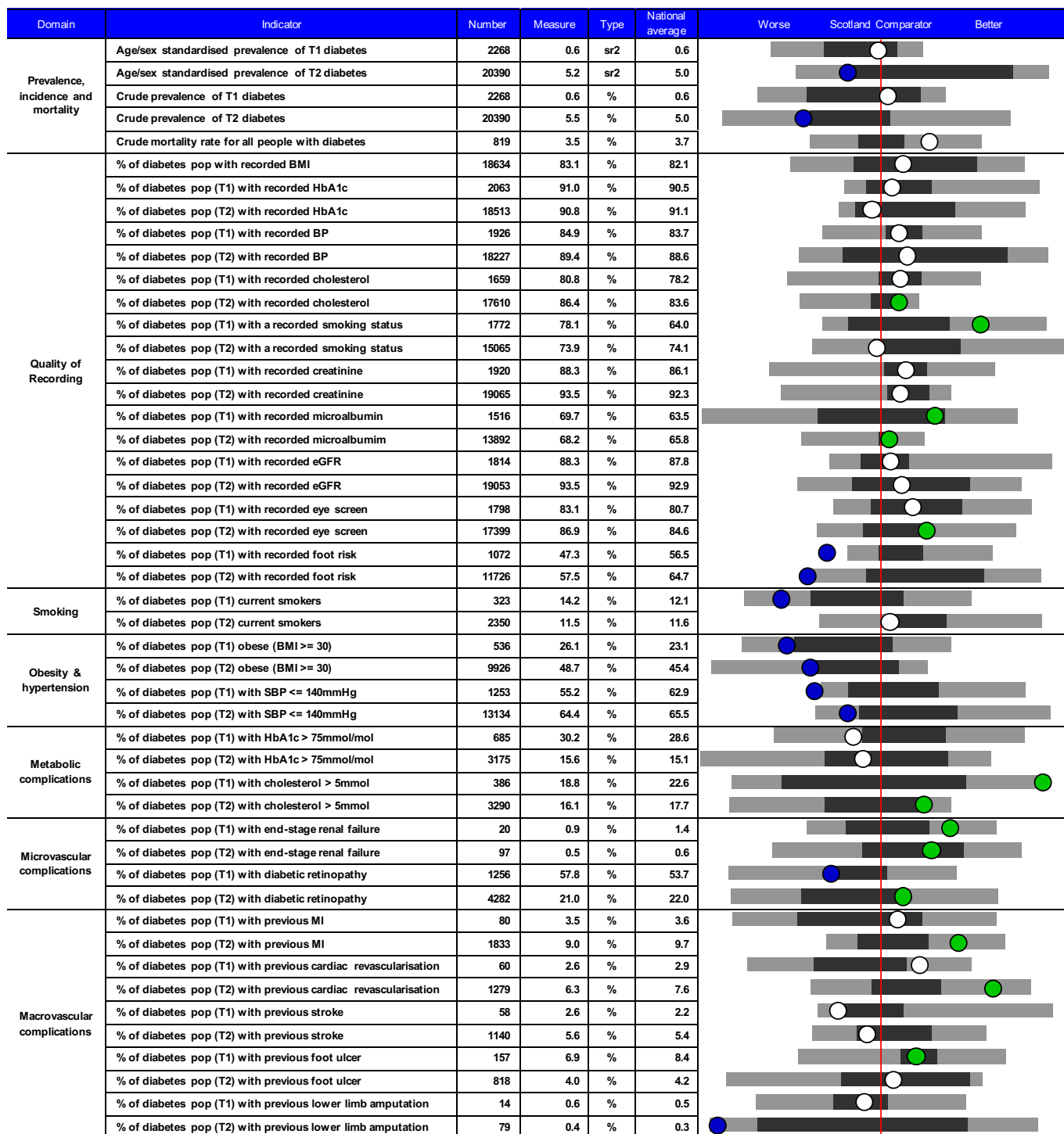
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile



Diabetes Health Board Spine Chart (Fife) 2019

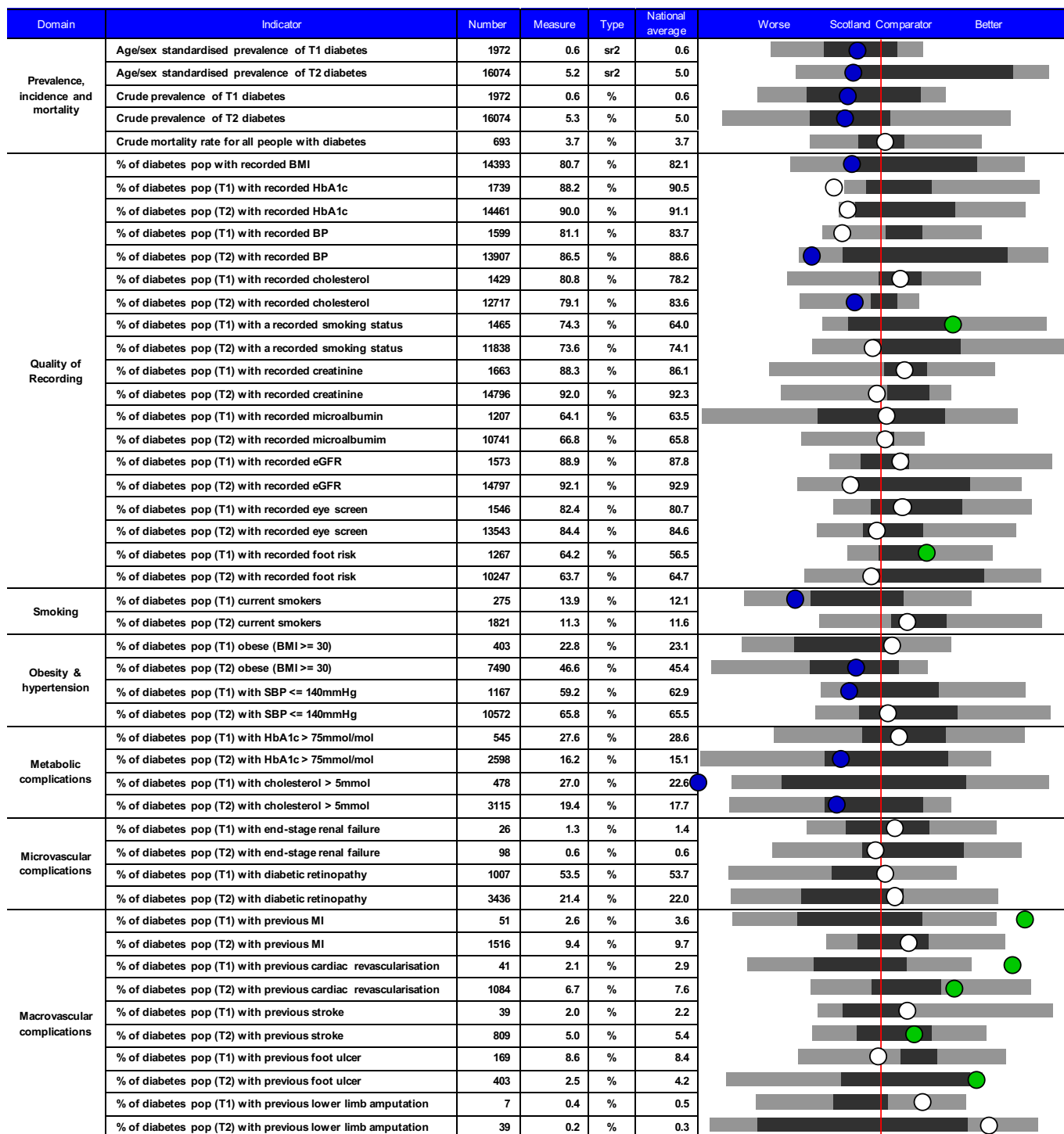


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
 5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Forth Valley) 2019

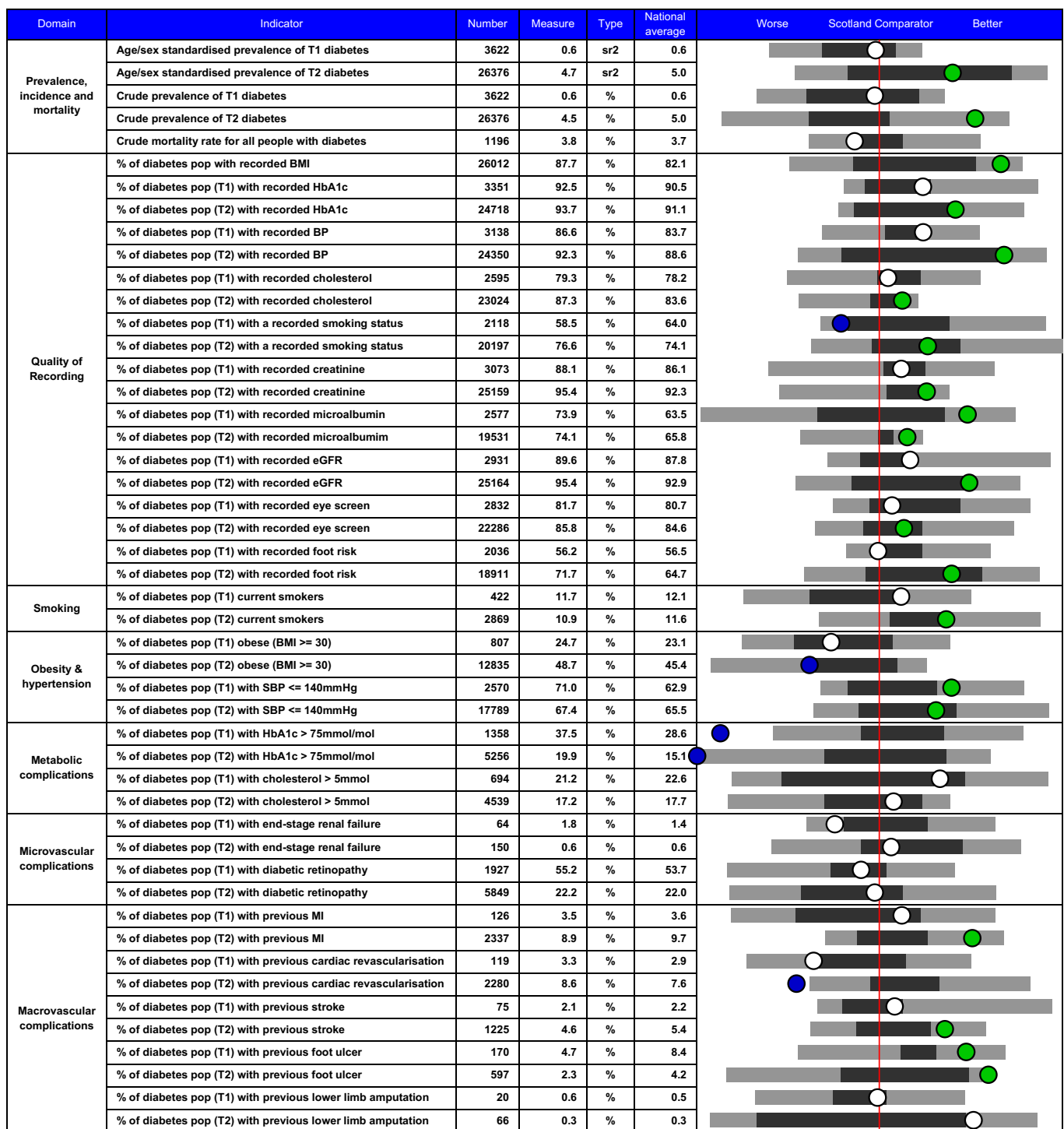


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sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Grampian) 2019

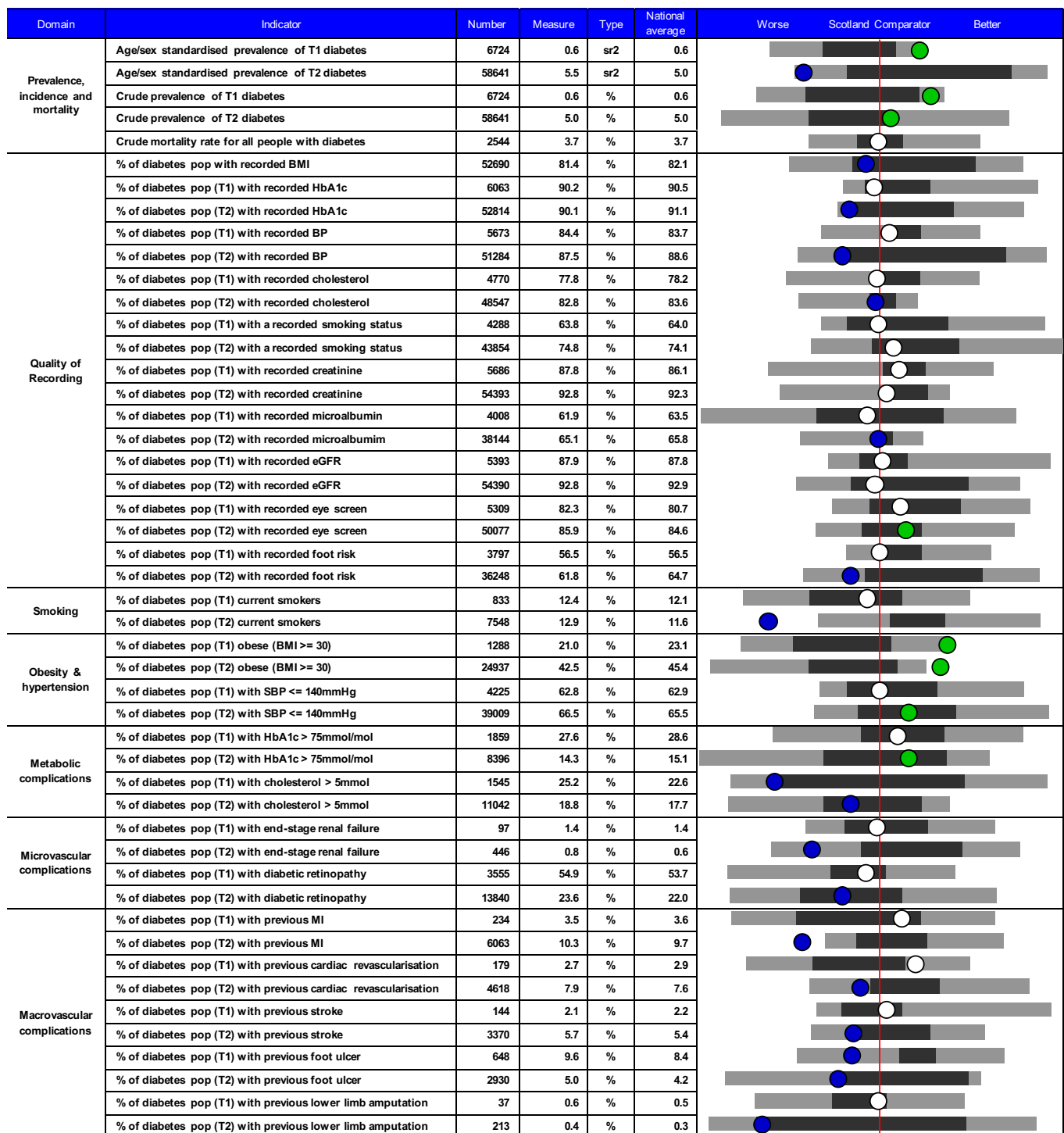


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sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Greater Glasgow and Clyde) 2019

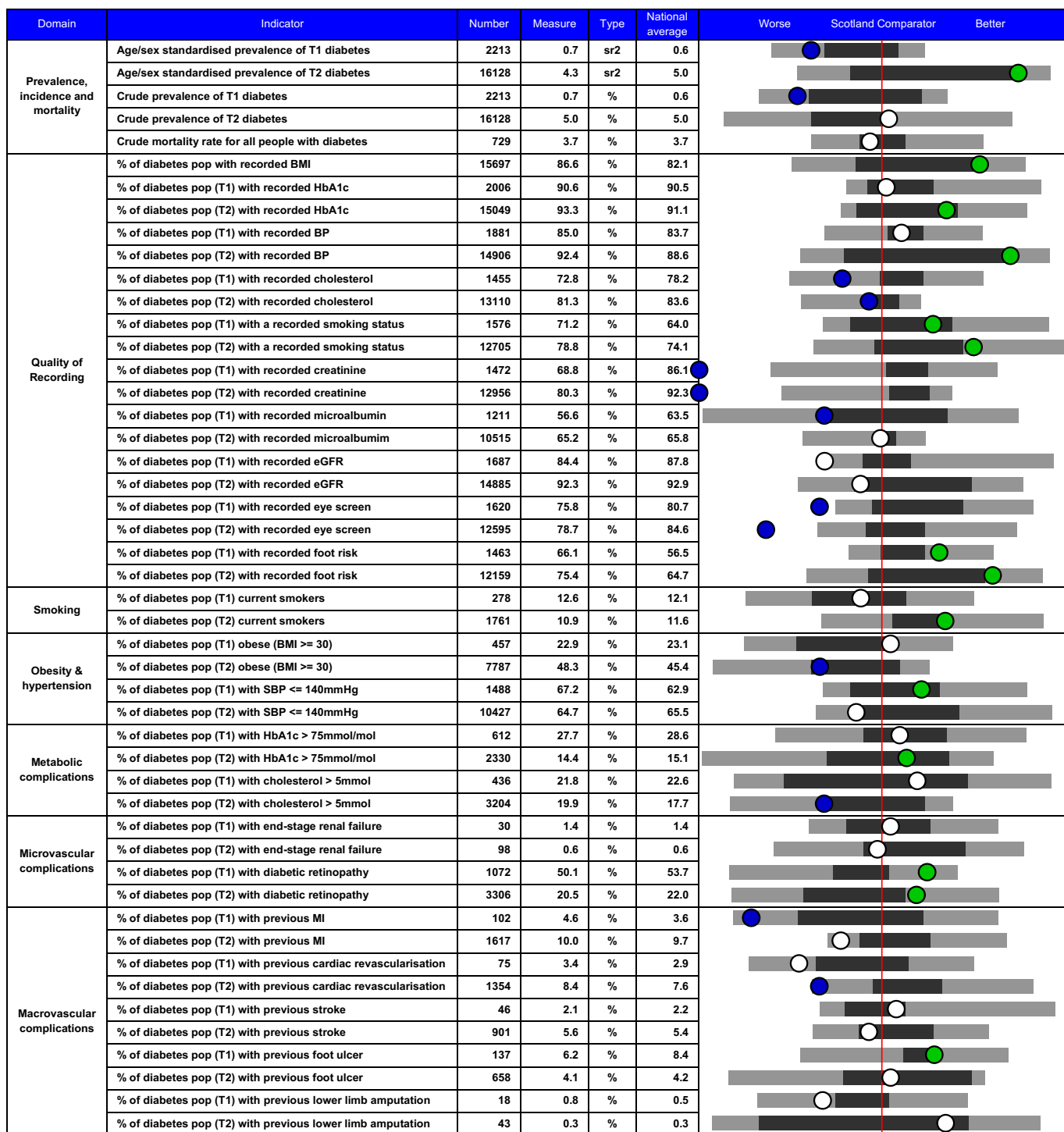


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
 5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Highland) 2019

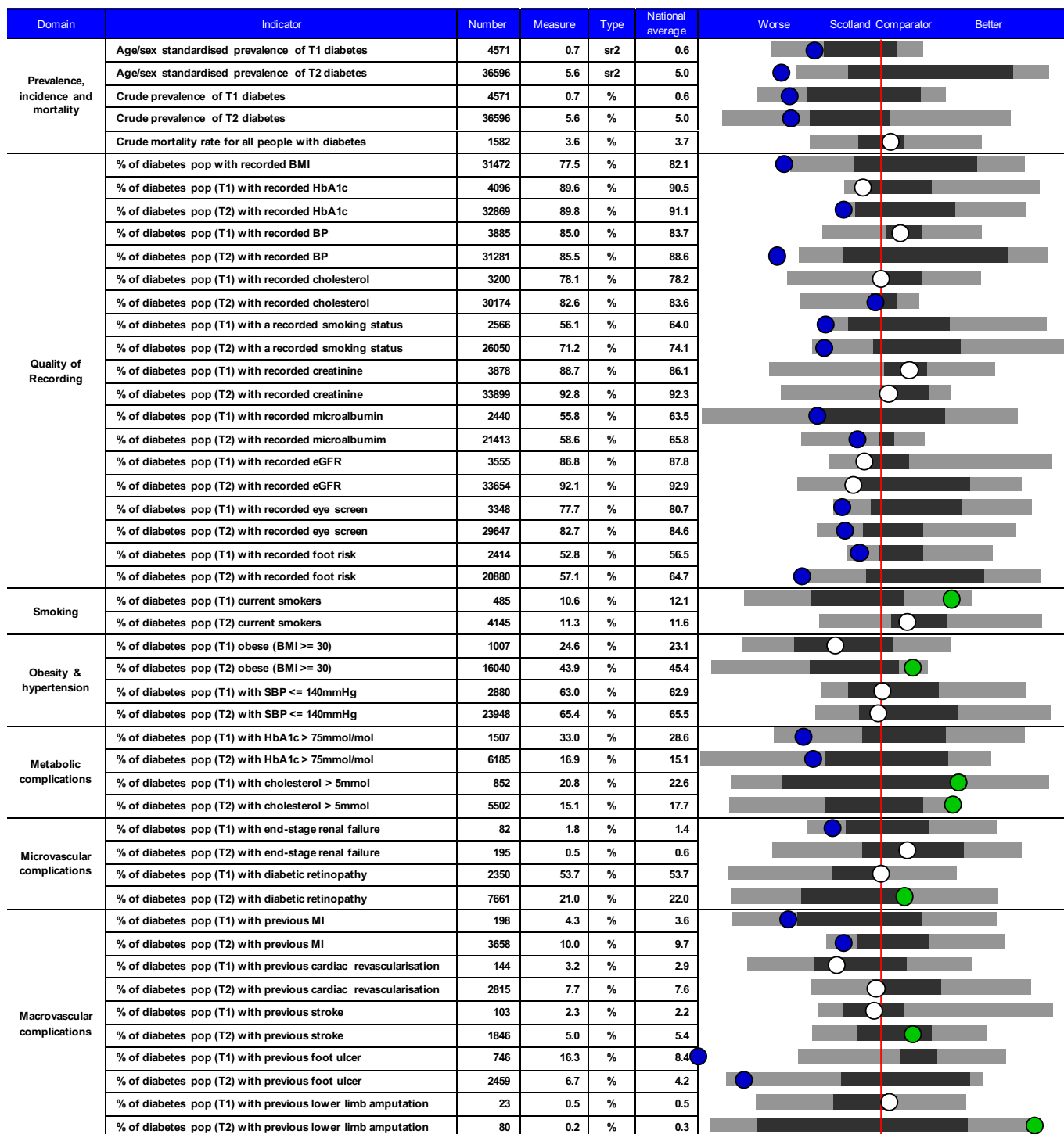


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Lanarkshire) 2019

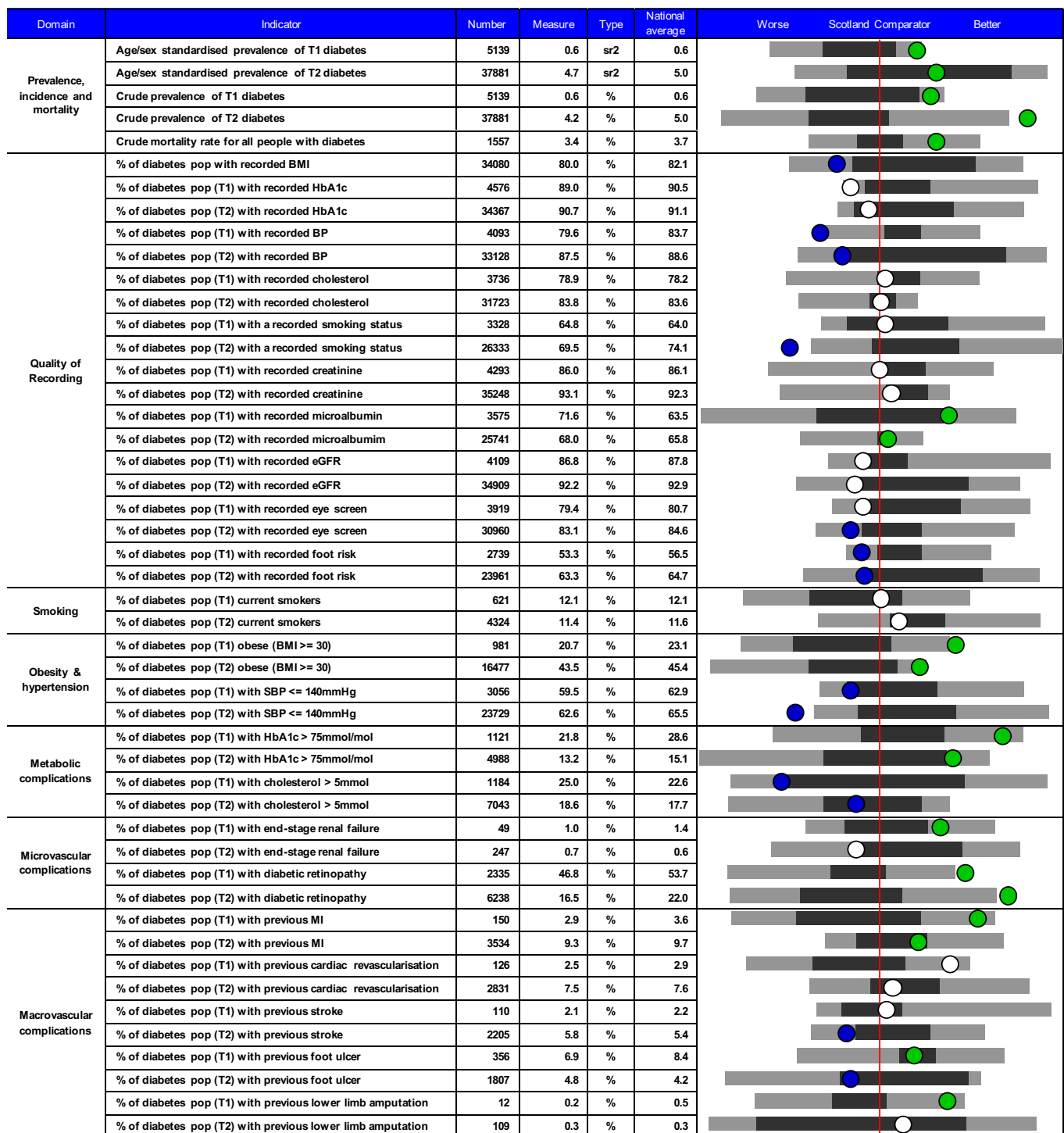


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Lothian) 2019



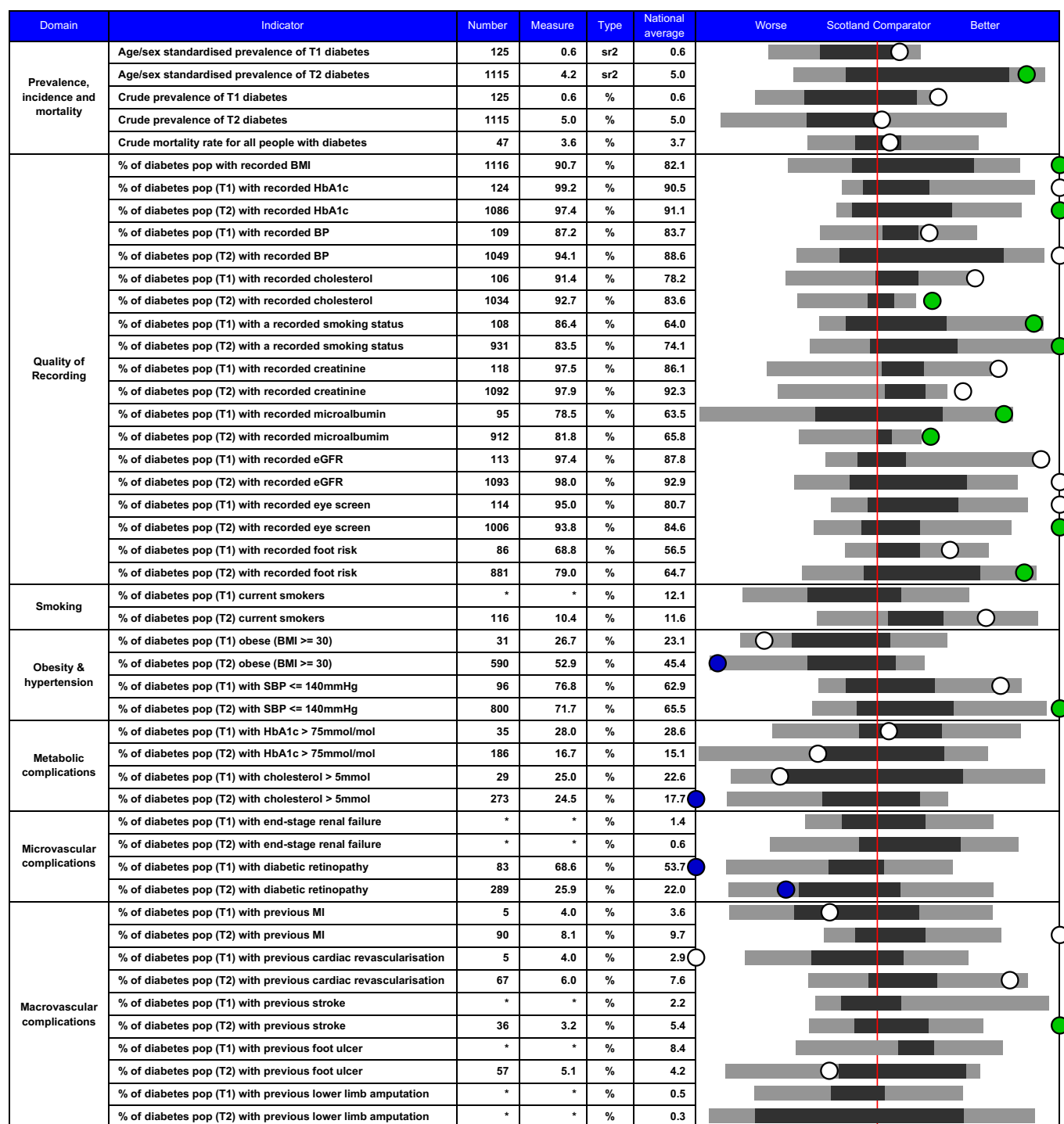
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key: ● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile



Diabetes Health Board Spine Chart (Orkney) 2019



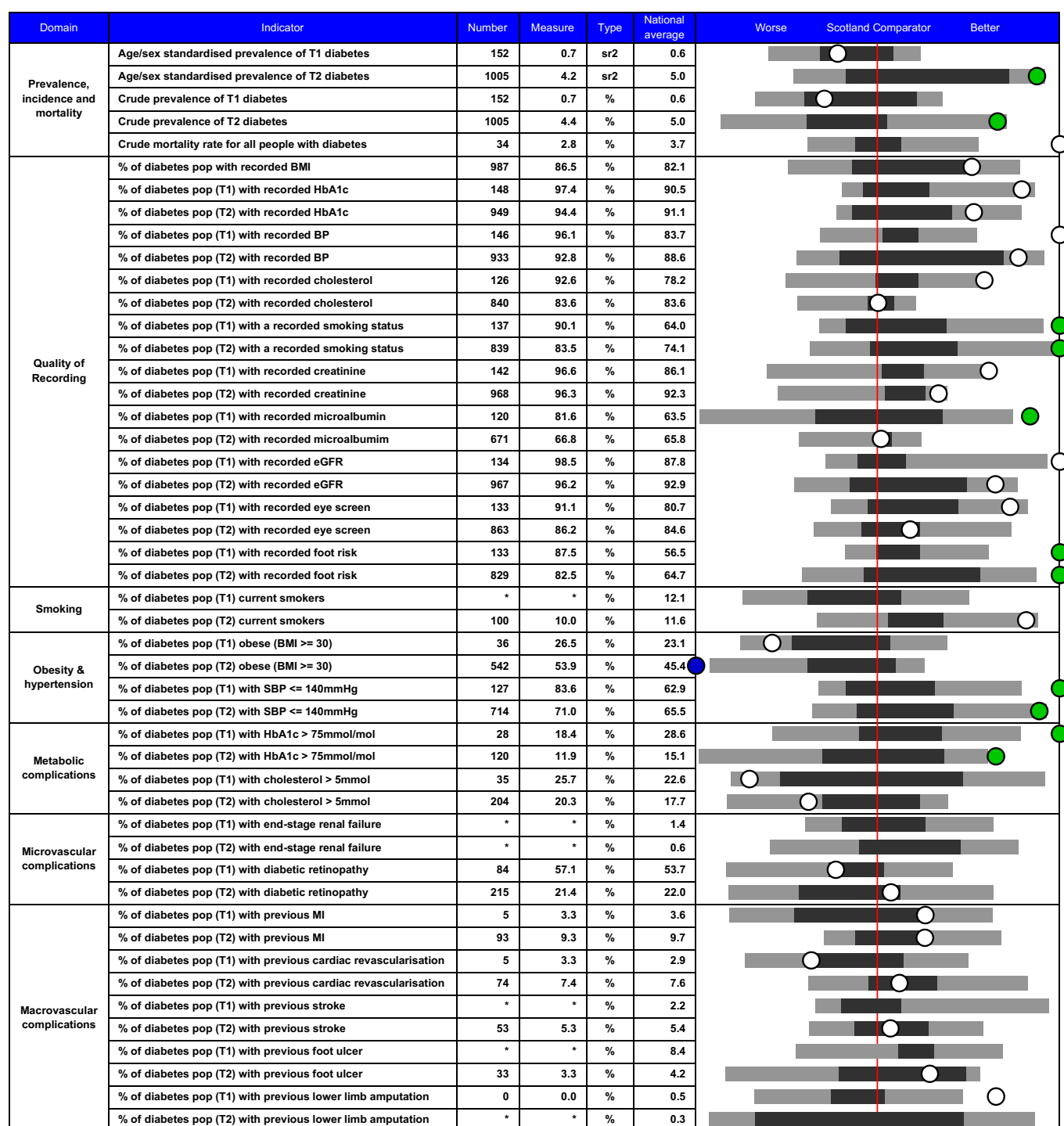
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
● Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile



Diabetes Health Board Spine Chart (Shetland) 2019

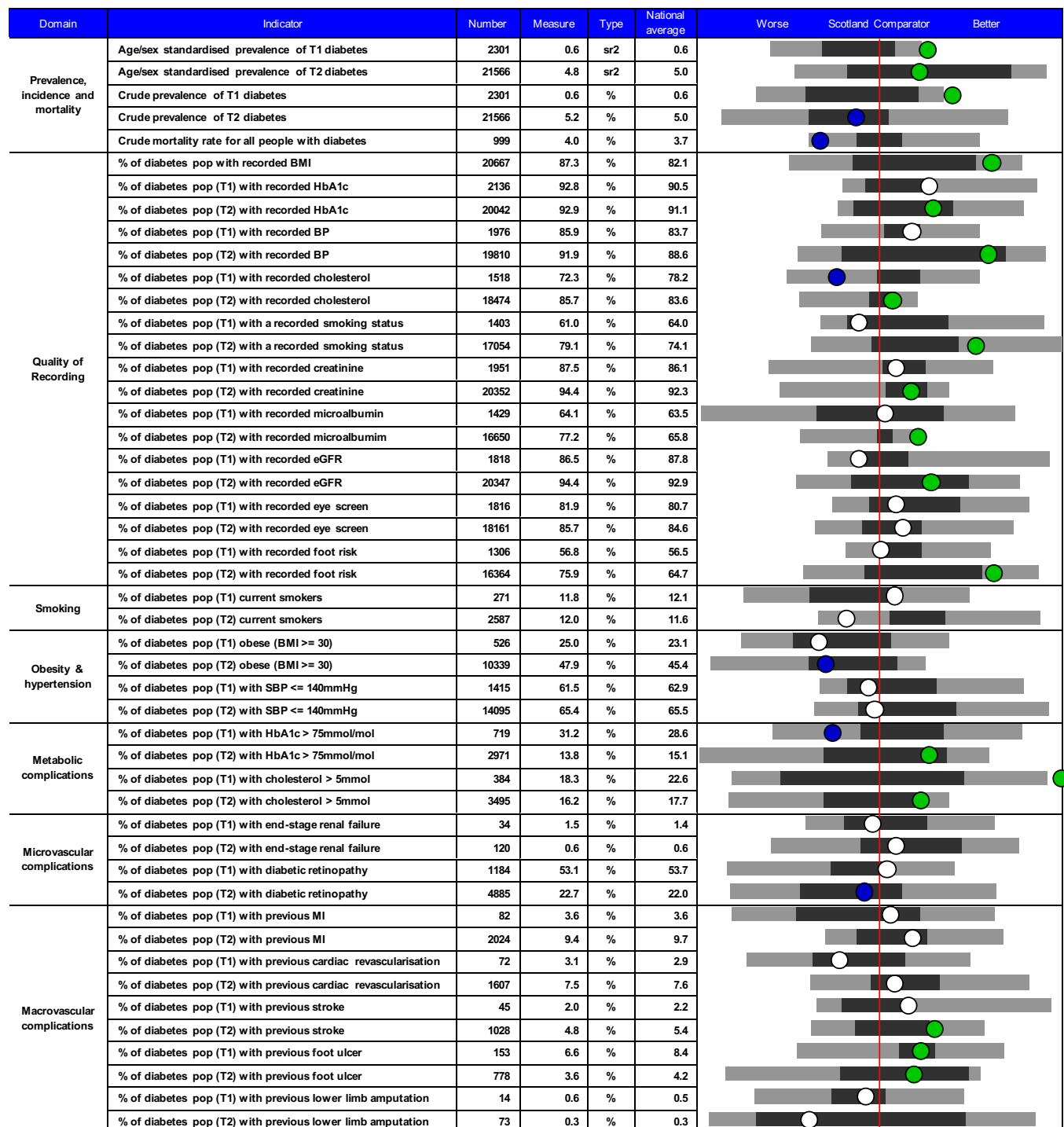


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Tayside) 2019

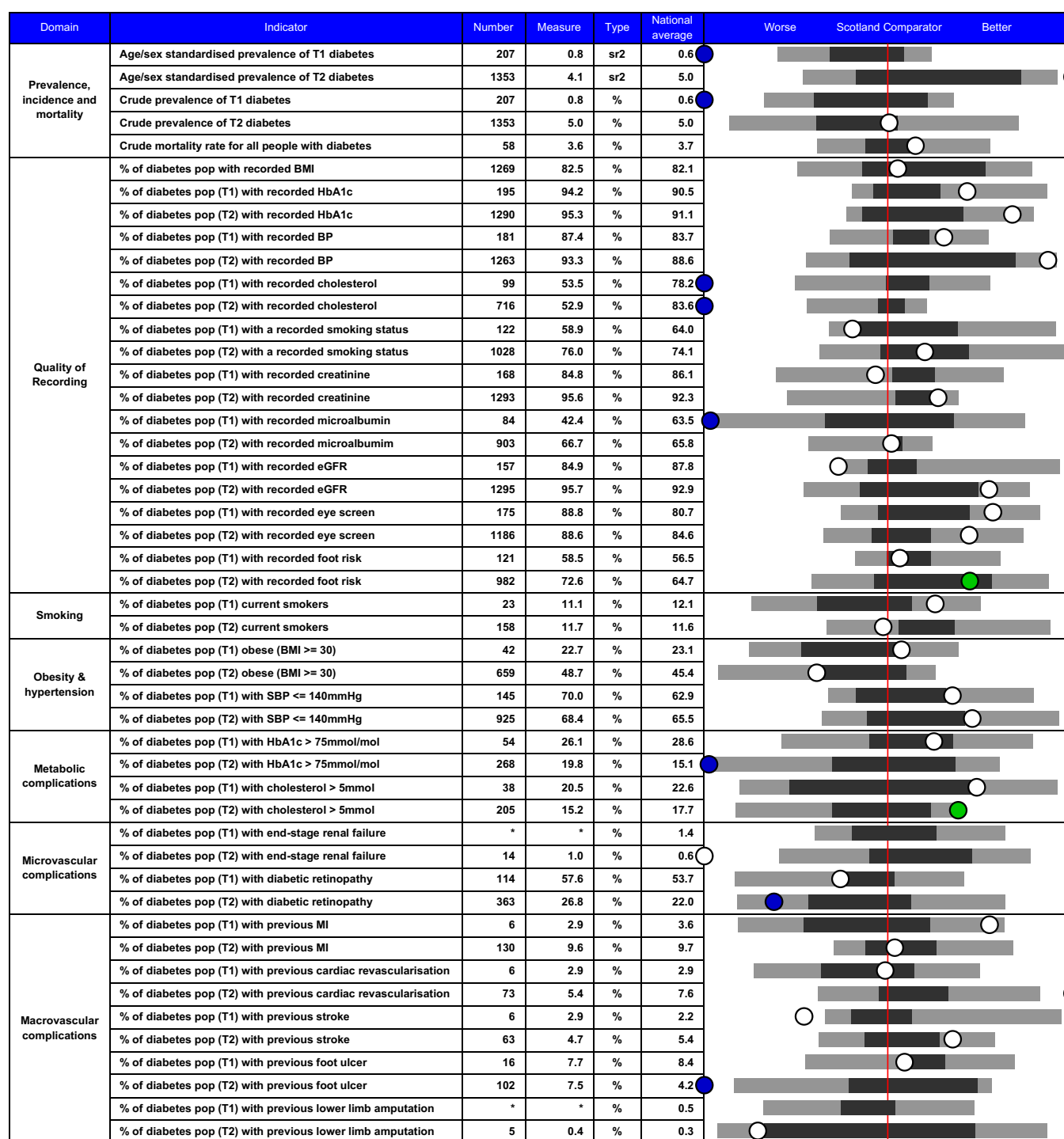


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
5th percentile 25th percentile 75th percentile 95th percentile

Diabetes Health Board Spine Chart (Western Isles) 2019



Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

Spine chart key:   
● Statistically significantly 'worse' than National average  
○ Statistically not significantly different from National average  
● Statistically significantly 'better' than National average

'Worse' Area ← Scotland Average → 'Better' Area  
 5th percentile 25th percentile 75th percentile 95th percentile