



# Scottish Diabetes Survey 2021

**Scottish Diabetes Group**

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## Revision information

Version Number	Edited By	Effective Date	Details of Edits Made
1.0	Michael Bluett	16 Jan 2023	Initial revision

# Foreword

Professor Johnny McKnight has led the Scottish Diabetes Survey until this point, and I thank him for all his work over the years. The 2021 Survey provides another comprehensive description of key aspects of diabetes in Scotland, including the effects of the Covid-19 pandemic but does not yet take account of changes to eye and foot screening intervals. The sequence of data has changed to present a section on national data first, then the paediatric section then the regional section. Within the national and regional section information is presented first on the characteristics of the population with diabetes and then on proportions with a record of each process of care and achievement of treatment targets. The [Sections relevant to the Diabetes Improvement Plan](#) directs readers to the data available from the 2021 Survey relevant to the Diabetes Improvement Plan.

We have the opportunity to review the content for future surveys, including changes to better reflect the Diabetes Improvement Plan. I look forward to hearing the views of people who read the Survey about the changes we could make to continue to support improvements in outcomes for people with diabetes in Scotland. Please send suggestions to [sarah.wild@ed.ac.uk](mailto:sarah.wild@ed.ac.uk) including the phrase "Scottish Diabetes Survey" in the message title.



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On behalf of the Scottish Diabetes Group

# Executive Summary

This report presents the results of the 2021 Scottish Diabetes Survey using an extract of SCI-Diabetes, the national database that collates data from all primary and secondary clinics in all 14 Health Boards, at the end of the year. Data for this survey include people who were alive, had an appropriate diagnosis of diabetes and were registered with a Scottish General Practitioner at the time of data extraction. In this Scottish Diabetes Survey for 2021, we report that:

- There were 327,927 people with a diagnosis of diabetes in SCI-Diabetes at the end of 2021 (Table 2). This represents approximately 6% of the population of all ages and compares to 5.8% in 2020. The relatively high number of new cases diagnosed in the last year may be related to effects of the pandemic and the relatively low number of new cases diagnosed in 2020.
- Proportions of people who had processes of care or risk factors recorded in the previous 15 months are lower than pre-pandemic, as summarised in the table below. However, these have generally increased compared to 2020 as shown in later tables.

**Table 1      Executive Summary**

Process measured within 15 months/target	Type of diabetes	
	Type 1 N = 34,928	Type 2 N = 287,606
HbA <sub>1c</sub> recorded	83.4%	85.1%
Blood pressure recorded	66.5%	76.4%
Cholesterol recorded	71.6%	74.4%
Serum creatinine recorded	83.3%	88.6%
Urinary albumin recorded	52.4%	52.8%
Body mass index recorded	62.4%	67.4%
Smoking recorded	48.9%	56.6%
Eye screening for 18+ years olds	55.4%	51.9%
Foot Screening	33.4%	36.7%
Both recommended processes of care for 0-11 year olds	88.9%	-
All 6 recommended processes of care for 12-17 year olds	12.7%	-
All 9 recommended processes of care for 18+ year olds	13.5%	12.4%
For people with risk factor recorded:		
HbA <sub>1c</sub> <58 mmol/mol	30.1%	53.0%
Blood pressure <=140 mmHg	73.2%	70.5%
Cholesterol <5mmol/l	70.2%	77.2%

## Sections Relevant to the Diabetes Improvement Plan

This section directs readers to the data available from the 2021 Survey relevant to the Diabetes Improvement Plan (<https://www.gov.scot/publications/diabetes-improvement-plan-diabetes-care-scotland-commitments-2021-2026/pages/4/>).

**Commitment 1.1** We will continue to support the implementation of the Framework for the Prevention, Early Detection and Early Intervention of Type 2 Diabetes

- Table 56 Proportions and numbers of people with HbA1c<58 mmol/mol one year (+/- 90 days) after diagnosis of type 2 and other diabetes aged over 18 years old and with HbA1c data available by NHS board, Scotland 2021.

**Commitment 1.3** We will ensure care pathways support individuals to have their processes of care completed while considering the principles of realistic medicine

- Table 20 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 2019-2021.
- Table 23 Proportion of people with type 1 or type 2 diabetes and a foot risk score recorded in the previous 15 months, Scotland 2019-2021.
- Table 28 Summary of age-appropriate care processes for children

**Commitment 2.1** We will support early optimisation of glycaemic control in new onset type 1 diabetes

- Table 53 Proportions and numbers of people with HbA1c<58 mmol/mol one year (+/- 90 days) after diagnosis of type 1 diabetes aged over 18 years old for people with HbA1c data available by NHS board, Scotland 2021.

**Commitment 2.2** We will support appropriate and timely access to technologies to improve glycaemic control and quality of life for people living with type 1 diabetes

- Table 25 Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and year, Scotland 2019-2021.
- Table 88 Numbers and percentages of people with type 1 diabetes recorded as using continuous and flash glucose measurement devices by NHS Board, ranked by decreasing percentage of users using a Flash Glucose Meter, Scotland 2021.

**Commitment 2.5** We will continue to support improvements in care and outcomes for adults living with Type 1 diabetes

- Table 14 Type 1 diabetes: Number and percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 201-2021.
- Table 16 Number and percentage of people with type 1 or type 2 diabetes with a recorded BP within the previous 15 months, Scotland 2019-2021.

### Priority 3 - Person-Centred Care

**Commitment 3.1** We will ensure timely and appropriate access to structured education and support for people living with diabetes

- Table 85 Record of having ever attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.

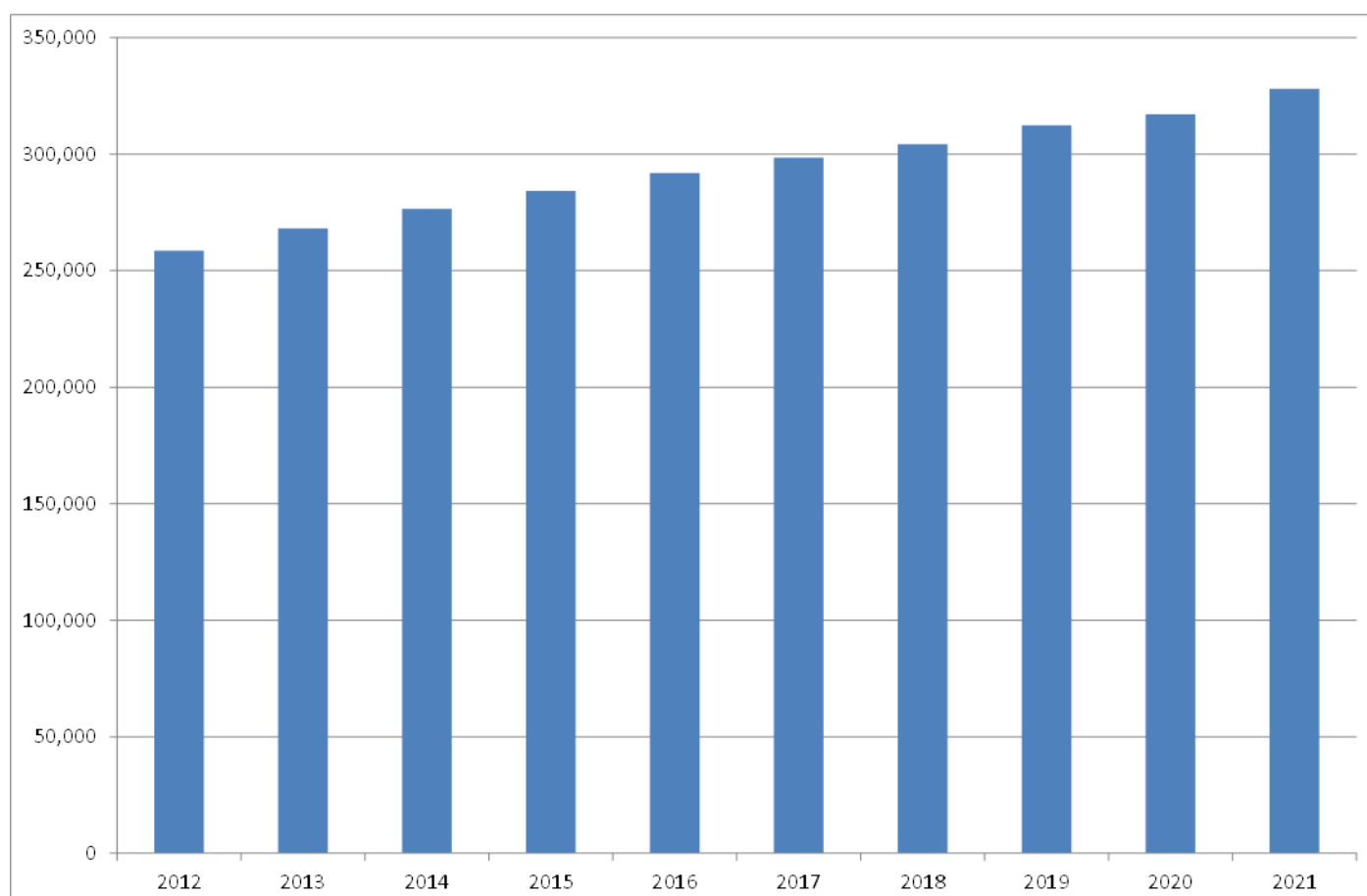


# Section 1: National Epidemiology and Characteristics of People with Diabetes in Scotland 2021

## Overall Prevalence

Numbers of people with diabetes in Scotland continue to increase (Figure 1). At the end of 2021 there were 327,927 people with a diagnosis of diabetes in Scotland (Table 2) recorded in Scottish Care Information-Diabetes (SCI-Diabetes), and a crude prevalence of 6.0% of the population of all ages. Increasing numbers of people with diabetes over time mainly reflects the balance between numbers of new (incident) cases and numbers of people with diabetes who die with other contributing factors described in previous Surveys. In 2021 the annual increase in numbers of people with diabetes was higher than in previous years that may reflect delays to diagnoses that would have been made in 2020 if there had not been a pandemic.

**Figure 1** Number of people recorded with diabetes (all types) by year for Scotland, 2012-2021.



**Table 2** Number of people with all types of diabetes, crude prevalence and annual changes in numbers/proportions by year for Scotland, 2019-2021.

Survey	Number of people with diabetes (n)	Crude prevalence (%)	Annual increase (n)	Annual increase (%)	Absolute increase in prevalence (%)
2021	327,927	6.00	10,799	3.41	0.19
2020	317,128	5.80	4,738	1.52	0.06
2019	312,390	5.74	8,015	2.63	0.13

Note: see previous Surveys for data for earlier years

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 later than the Survey. For example, the 2021 Survey uses numbers of people with diabetes at the end of 2021 but the mid-year population estimate from 2020 of 5,466,000 people.

## Incidence (New Cases)

Crude incidence figures have been calculated retrospectively separately for type 1 and type 2 diabetes using numbers of people with diabetes of duration of less than one year identified from SCI-Diabetes data as the numerator and people that do not have a diagnosis of diabetes as the denominator. Type of diabetes classification may change subsequently. Incidence of both types of diabetes has increased in 2021 compared to previous years, with a particularly marked increase among 5-9 year-olds for type 1 diabetes. For type 2 diabetes, this may partly reflect the reduction in the numbers of new diagnoses in 2020 but may also reflect increases in weight and body mass index in the population.

**Table 3 Type 1 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by five-year age groups for under 20-year-olds and ten-year age groups for people over 19 years of age, Scotland 2017-2021**

Age	2017		2018		2019		2020		2021		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Population	Cases	Rate
0-4	52	18	60	21	54	20	56	21	263,676	58	22
5-9	135	45	117	39	108	36	122	41	297,276	173	58
10-14	141	52	178	64	161	56	176	60	296,648	196	66
15-19	109	37	89	31	97	34	116	41	280,189	117	42
20-29	178	24	172	23	205	28	181	25	712,597	201	28
30-39	159	24	137	20	145	21	133	19	717,530	152	21
40-49	79	11	86	13	100	15	106	16	648,700	98	15
50-59	70	10	80	11	71	10	99	13	731,761	121	17
60-69	36	6	40	7	47	8	50	9	570,277	68	12
>=70	19	3	34	6	36	6	29	5	630,346	29	5
<b>Total</b>	<b>978</b>	<b>19</b>	<b>993</b>	<b>19</b>	<b>1,024</b>	<b>20</b>	<b>1,068</b>	<b>21</b>	<b>5,148,872</b>	<b>1,213</b>	<b>24</b>

Note: The Scottish at-risk population figures excludes people with frank diabetes at the end of the previous year and those whose age is unknown (n = 127).

**Table 4 Type 2 diabetes: Number of new cases and incidence rate (per 100,000 population per year) by age, Scotland 2017-2021.**

Age	2017		2018		2019		2020		2021		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Population	Cases	Rate
0-9	*	0	0	0	*	0	0	0	560,952	*	0
10-19	*	4	17	3	*	4	22	4	576,837	*	5
20-29	205	28	188	26	216	30	254	35	712,597	293	41
30-39	898	134	884	129	1,017	146	977	138	717,530	1,254	175
40-49	2,225	316	2,169	317	2,378	357	2,209	337	648,700	3,010	464
50-59	4,266	591	4,252	584	4,872	665	4,447	606	731,761	5,976	817
60-69	4,331	771	4,268	767	4,901	879	4,264	757	570,277	5,884	1,032
>=70	4,269	749	4,202	711	5,123	845	4,257	685	630,346	5,773	916
<b>Total</b>	<b>16,216</b>	<b>317</b>	<b>15,980</b>	<b>312</b>	<b>18,530</b>	<b>361</b>	<b>16,430</b>	<b>319</b>	<b>5,148,872</b>	<b>22,221</b>	<b>432</b>

Note: \* 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 and those whose age is unknown (n = 127).

## Key Characteristics of People with Diabetes: Types of Diabetes

The majority of people registered on SCI-diabetes have a record of type 2 diabetes (87.7%). The number of people continues to increase for both types of diabetes (for example the number of people with type 1 diabetes has increased from 29,261 in 2013 to 34,928 in 2021, see previous Surveys). Other types of diabetes include Maturity Onset Diabetes of the Young (MODY), gestational diabetes and secondary diabetes. See the [Monogenic Diabetes](#) section for detailed information by NHS board with the rest of the Survey mainly reporting data for type 1 and type 2 diabetes.

**Table 5 Number of people with diabetes, by diabetes type, Scotland 2021.**

Type 1		Type 2		Other types of diabetes		Total
n	%	N	%	n	%	
34,928	10.7	287,606	87.7	5,393	1.6	327,927

## Key Characteristics of People with Diabetes: Age and Sex Distribution

Larger proportions of people with diagnosed diabetes are male than female; 55.6% (19,415) of those with type 1 diabetes and 56.3% (161,925) of those with type 2 diabetes are male.

**Table 6** 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 2021.

Age	Type 1 diabetes			Type 2 diabetes		
	People (n)	%	Cumulative Percentage (%)	People (n)	%	Cumulative Percentage (%)
0-4	134	0.4	0.4	*	0.0	0.0
5-9	675	1.9	2.3	*	0.0	0.0
10-14	1,428	4.1	6.4	19	0.0	0.0
15-19	1,833	5.3	11.7	77	0.0	0.0
20-24	2,417	6.9	18.6	278	0.1	0.1
25-29	2,722	7.8	26.4	888	0.3	0.4
30-34	2,911	8.3	34.7	2,159	0.8	1.2
35-39	2,852	8.2	42.9	4,412	1.5	2.7
40-44	2,686	7.7	50.6	7,802	2.7	5.4
45-49	2,871	8.2	58.8	12,372	4.3	9.7
50-54	3,294	9.4	68.3	22,556	7.8	17.6
55-59	3,316	9.5	77.8	32,416	11.3	28.9
60-64	2,774	7.9	85.7	39,047	13.6	42.4
65-69	2,044	5.9	91.6	41,304	14.4	56.8
70-74	1,434	4.1	95.7	43,240	15.0	71.8
75-79	835	2.4	98.1	35,227	12.3	84.1
80-84	436	1.2	99.3	25,392	8.8	92.9
>=85	240	0.7	100.0	20,317	7.1	100.0
<b>Scotland</b>	<b>34,902</b>	<b>100.0</b>	<b>100.0</b>	<b>287,511</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.

## Key Characteristics of People with Diabetes: Duration of Diabetes

The date of diagnosis was recorded for 99.3% of people with either type 1 or type 2 diabetes, of whom 7.2% have had diabetes for less than one year and 14.1% have had diabetes for 20 years or more (Table 7). It should be noted that not all dates of diagnosis may be accurate, especially for those with long-standing diabetes.

**Table 7 Duration of diabetes (years since diagnosis) by type of diabetes for people with type 1 or type 2 diabetes, Scotland 2021.**

Duration (Years)	Type 1 diabetes		Type 2 diabetes		Type 1 and type 2 diabetes	
	People (n)	%	People (n)	%	People (n)	Total %
<1	1,206	3.5	21,977	7.7	23,183	7.2
1-4	4,112	11.9	64,389	22.5	68,501	21.4
5-9	4,794	13.9	72,262	25.3	77,056	24.1
10-14	4,514	13.0	58,059	20.3	62,573	19.5
15-19	4,209	12.2	39,353	13.8	43,562	13.6
20-24	3,965	11.5	19,324	6.8	23,289	7.3
25-29	3,069	8.9	6,426	2.3	9,495	3.0
30-34	2,596	7.5	2,393	0.8	4,989	1.6
34-39	2,028	5.9	852	0.3	2,880	0.9
40-44	1,686	4.9	243	0.1	1,929	0.6
45-49	1,097	3.2	127	0.0	1,224	0.4
>=50	1,315	3.8	144	0.1	1,459	0.5
<b>Total</b>	<b>34,591</b>	<b>100.0</b>	<b>285,549</b>	<b>100.0</b>	<b>320,140</b>	<b>100.0</b>

Note: Excludes people where date of diagnosis not known (type 1 n = 337; type 2 n = 2,057).

## Key Characteristics of People with Diabetes: Ethnicity

Ethnicity is not recorded for approximately one fifth of people with a diagnosis of diabetes in Scotland.

**Table 8** Completeness of recording of ethnic group for people with diabetes (type 1 and type 2 combined) by year, Scotland 2019-2021.

Year	Identified	
	People (n)	%
2021	260,349	80.7
2020	255,219	81.7
2019	253,375	82.3

**Table 9** Recorded ethnic group for type 1 and type 2 diabetes, Scotland 2021.

Ethnic group	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
A – White	28,867	82.6	207,994	72.3
B - Mixed or multiple ethnic groups	682	2.0	6,604	2.3
C - Asian, Asian Scottish, or Asian British	440	1.3	11,577	4.0
D - African, Caribbean, or Black	172	0.5	1,729	0.6
E - Other ethnic group	231	0.7	2,053	0.7
Not recorded	4,536	13.0	57,649	20.0

## Key Characteristics of People with Diabetes: Proportions of people with selected complications

Proportion of people with diabetes who have a record of key complications of diabetes including cardiovascular disease, foot ulceration and amputation have remained approximately stable as described in the following tables.

### Cardiovascular Disease

**Table 10** Percentage of people with either type 1 or type 2 diabetes who are recorded as having had a previous myocardial infarction (MI) or cardiac revascularisation by year, Scotland 2019-2021.

Year	Type 1 diabetes		Type 2 diabetes	
	Myocardial infarction (%)	Cardiac revascularisation (%)	Myocardial infarction (%)	Cardiac revascularisation (%)
2021	3.6	2.8	9.6	7.5
2020	3.6	2.8	9.6	7.6
2019	3.6	2.9	9.7	7.6

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

See the [Myocardial Infarction and Cardiac Revascularisation Summary](#) section.

### Foot Ulceration

**Table 11** Percentage of people with either type 1 or type 2 diabetes who are recorded as ever having had a foot ulcer by year, Scotland 2019-2021.

Year	Recorded as ever having had a foot ulcer (%)	
	Type 1 diabetes	Type 2 diabetes
2021	8.0	4.0
2020	8.3	4.1
2019	8.4	4.2



## Lower Limb Amputation

**Table 12** 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 2019-2021.

Year	Lower limb amputation	
	People (n)	%
2021	1,492	0.5
2020	1,465	0.5
2019 (a)	1,555	0.5

Note: (a) During the 2019 survey errors were found and data for the years 2018-2019 were recalculated. 2019 data are likely to be a close approximation of the actual number.

## Mortality

The number and proportion of people with diabetes who have died each year in Scotland was higher in 2021 and 2020, during the Covid-19 pandemic, than in previous years, as shown in Table 13.

**Table 13** Number and percentage of people with diabetes (type 1 and type 2 combined) who died by year, Scotland 2019-2021.

Year	Deaths	
	Number	%
2021	13,784	4.0
2020	13,437	4.1
2019	11,946	3.7

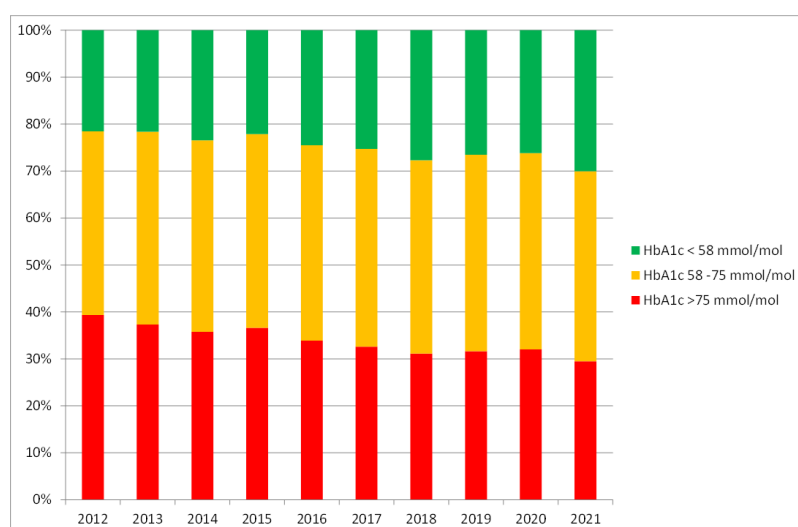
Note: These data were calculated from all people with diabetes who died in the prior year expressed as a percentage of all people with diabetes still alive at the end of the year plus those who died during the year. This does not take account of the fact that as people die during the year the size of 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.

## Section 2: National Completion of Processes of Care / Achievement of Treatment Targets by Type

### Glycaemic Control

The proportion of people with type 1 diabetes with HbA<sub>1c</sub> <58 mmol/mol was over 30% in 2021 (Table 14) and is the highest it has been since 2012 (Figure 3). However approximately 1 in 6 people with type 1 diabetes and almost 1 in 7 people with type 2 diabetes did not have an HbA<sub>1c</sub> recorded in 2021 (Table 14 and Table 15). These are smaller proportions than for 2020 but completeness of recording has still not recovered back to pre-pandemic levels.

**Figure 2 Type 1 diabetes: Percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2012-2021.**

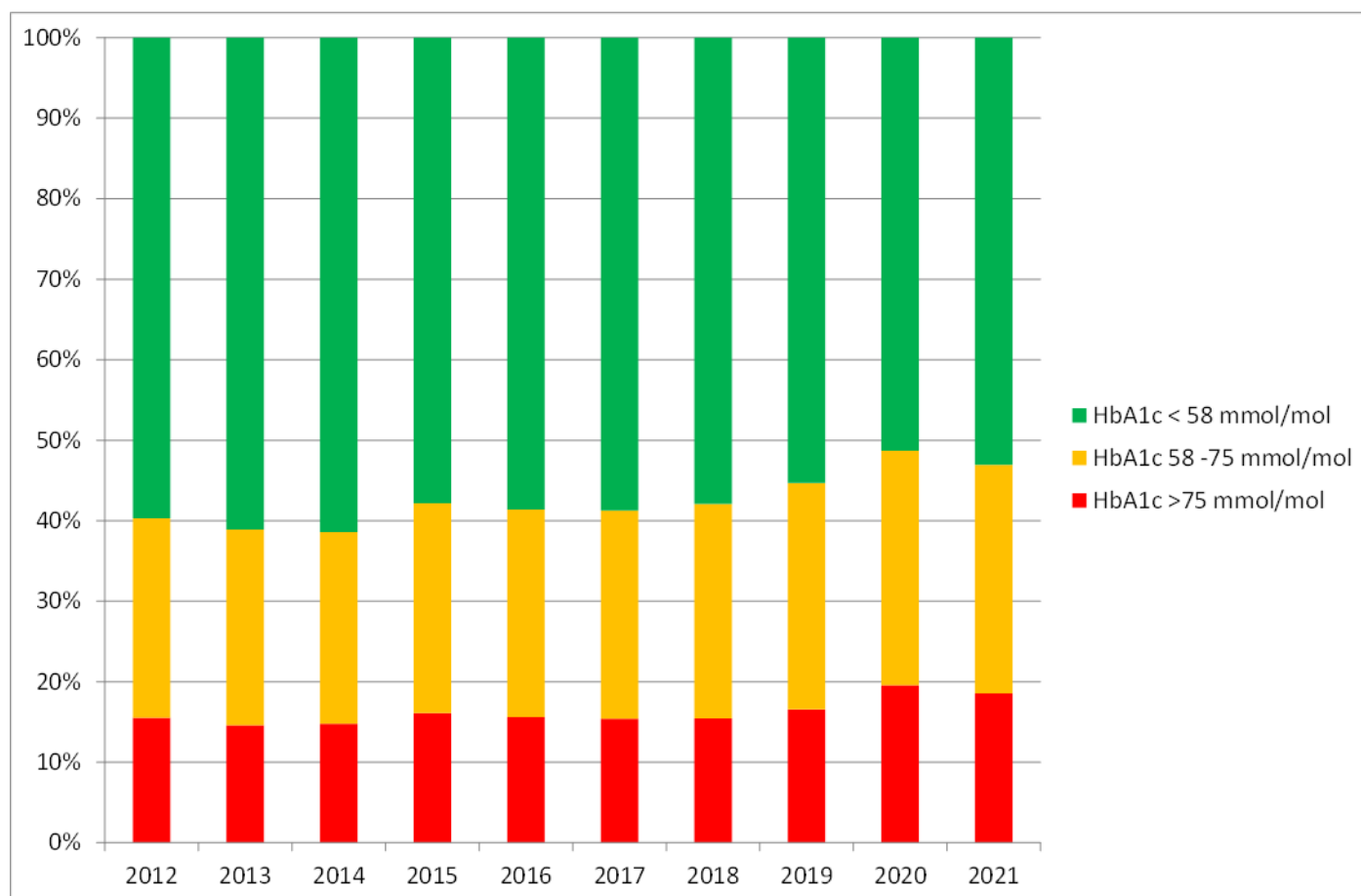


**Table 14 Type 1 diabetes: Number and percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 201-2021.**

Year	HbA <sub>1c</sub> (mmol/mol)						Not recorded (%)	Total recorded (n)
	<58		58-75		>75			
	n	%	n	%	N	%		
2021	8,756	30.1	11,789	40.5	8,588	29.5	16.6	29,133
2020	7,249	26.1	11,601	41.8	8,876	32.0	18.7	27,726
2019	8,027	26.5	12,666	41.9	9,570	31.6	9.5	30,263

Note: Lower proportions of people had their HbA<sub>1c</sub> recorded in 2021 and 2020 than in previous years. However, it appears that proportions with good glycaemic control have increased and with poor control have decreased.

**Figure 3 Type 2 diabetes: Percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2012-2021.**



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

**Table 15 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 2019-2021.**

Year	HbA <sub>1c</sub> (mmol/mol)						Not recorded (%)	Total recorded (n)
	<58		58-75		>75			
	n	%	n	%	n	%		
2021	129,852	53.0	69,545	28.4	45,417	18.6	14.9	244,814
2020	117,776	51.3	66,838	29.1	44,871	19.6	17.5	229,485
2019	138,374	55.3	70,314	28.1	41,390	16.6	8.9	250,078

Note: lower proportions of people had their HbA<sub>1c</sub> recorded in 2021 and 2020 than in previous years

## Blood Pressure

Approximately 1 in 3 people with type 1 diabetes and 1 in 4 people with type 2 diabetes did not have a blood pressure recorded in 2021 (Table 16). Of the people with a blood pressure recorded the proportions meeting blood pressure targets have remained approximately constant over the last three years (Table 17).

**Table 16 Number and percentage of people with type 1 or type 2 diabetes with a recorded BP within the previous 15 months, Scotland 2019-2021.**

Year	Type 1 diabetes			Type 2 diabetes		
	BP Recorded		Population (n)	BP Recorded		Population (n)
	n	%		n	%	
2021	23,224	66.5	34,928	219,669	76.4	287,606
2020	23,011	67.5	34,087	209,077	75.1	278,239
2019	28,008	83.7	33,452	243,171	88.6	274,442

**Table 17 Percentage of people with diabetes with systolic blood pressure (SBP) ≤140 mmHg by year as a percentage of those recorded and % not recorded by type of diabetes, Scotland 2019-2021.**

Year	Type 1 diabetes				Type 2 diabetes			
	Systolic BP ≤ 140 (%)	Systolic BP >140 (%)	Not recorded (%)	Population (n)	Systolic BP ≤ 140 (%)	Systolic BP > 140 (%)	Not recorded (%)	Population (n)
2021	73.2	26.8	33.5	34,928	70.5	29.5	23.6	287,606
2020	73.8	26.2	32.5	33,087	69.9	30.1	24.9	278,239
2019	75.1	24.9	16.3	33,452	74.0	26.0	11.4	274,442

## Total Cholesterol

Approximately 1 in 4 people with type 1 or type 2 diabetes did not have a cholesterol recorded in 2021 (Table 16). Of the people with cholesterol recorded the proportions meeting the target of <5 mmol/l have remained approximately constant over the last three years (Table 18).

**Table 18 Number and percentage of people with type 1 or type 2 diabetes with cholesterol <5 mmol/l, by type of diabetes and year (denominator those with recording of cholesterol within the previous 15 months) by year, Scotland 2019-2021.**

Year	Type 1 diabetes				Type 2 diabetes			
	Cholesterol		Not Recorded (%)	Total Eligible (n)	Cholesterol		Not Recorded (%)	Total Eligible (n)
	<= 5 (%)	> 5 (%)			<= 5 (%)	> 5 (%)		
2021	70.2	29.8	28.4	31,573	77.2	22.8	25.6	287,450
2020	69.3	30.7	36.9	30,901	77.2	22.8	29.8	278,097
2019	71.0	29.0	21.8	30,357	78.8	21.2	16.4	274,300

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (type 1 n = 3,355, type 2 n = 156).

## Kidney Function

### Serum Creatinine

Approximately 1 in 6 people with type 1 diabetes and 1 in 8 people with type 2 diabetes did not have a serum creatinine recorded in 2021 (Table 19). Almost half of people with either type 1 or type 2 diabetes did not have urinary albumin level recorded (Table 20).

**Table 19 Percentage of people with type 1 and type 2 diabetes who had a record of serum creatinine within the previous 15 months, Scotland 2019-2021.**

Year	Type 1 diabetes		Type 2 diabetes	
	Recorded within previous 15 months (%)	Total eligible population	Recorded within previous 15 months (%)	Total eligible population
2021	83.3	33,647	88.6	287,503
2020	75.4	32,891	85.0	278,138
2019	86.1	32,226	92.3	274,340

Note: Excludes children under 12 years of age or people that have no date of birth recorded (type 1 n = 1,281, type 2 n = 103).

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

## Urinary Albuminuria

**Table 20** 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 2019-2021.

Year	Urinary albumin recorded within previous 15 months			
	Type 1 diabetes		Type 2 diabetes	
	Number	%	Number	%
2021	17,643	52.4	151,688	52.8
2020	15,576	47.4	138,597	49.8
2019	20,450	63.5	180,620	65.8

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103). In some cases, urinary albumin was estimated from albumin/creatinine ratio (ACR).

See the [Regional Albuminuria](#) section for regional information.

## Body Mass Index Recording

Approximately 1 in 3 people with type 1 diabetes or type 2 diabetes did not have a body mass index (BMI) recorded in 2021 (Table 21), compared to about 1 in 5 in 2019.

**Table 21** Proportion of adults with type 1 or type 2 diabetes and a record of BMI in the previous 15 months, Scotland 2019-2021.

Year	Type 1 diabetes		Type 2 diabetes	
	Recorded within previous 15 months (%)	Total eligible population	Recorded within previous 15 months (%)	Total eligible population
2021	62.4	31,573	67.4	287,450
2020	65.8	30,901	66.6	278,097
2019	83.5	30,357	81.9	274,300

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (type 1 n = 3,355, type 2 n = 156).

## Smoking Status

Smoking status was recorded within the last 15 months for 52.1% of adults with type 1 diabetes and 56.7% for people with type 2 diabetes, similar to 2020 but lower proportions than for 2019 (Table 22). Of those with a record of smoking status, 17.4% of adults with type 1 and 15.5% for adults with type 2 had a record of being a current smoker.

**Table 22 Percentage of adults with type 1 or type 2 diabetes who were recorded as current smokers (denominator those with a record of smoking status) in the previous 15 months, Scotland 2019-2021.**

Year	Type 1 diabetes			Type 2 diabetes		
	Current smoker (%)	Not recorded (%)	Population (n)	Current smoker (%)	Not recorded (%)	Population (n)
2021	17.4	47.9	31,572	15.5	43.3	292,766
2020	18.4	46.7	30,901	15.9	42.3	282,826
2019	19.1	30.9	30,355	15.7	25.6	278,715

Note: Excludes people under 18 years of age or who have no date of birth recorded (type 1 n = 3,355, type 2 n = 156).

See the [Smoking](#) section for detailed information by NHS board.

## Foot Screening

Proportions of people with a record of foot screening in the last 15 months remain low due to reductions during the pandemic and the increase in screening interval for people at low risk.

**Table 23 Proportion of people with type 1 or type 2 diabetes and a foot risk score recorded in the previous 15 months, Scotland 2019-2021.**

Year	Type 1 diabetes		Type 2 diabetes	
	Number	%	Number	%
2021	11,676	33.4	105,675	36.7
2020	11,295	33.1	107,006	38.5
2019	18,915	56.5	177,674	64.7

Note: An mistake was made in calculating foot risk score percentages in the Scottish Diabetes Survey 2019 and Scottish Diabetes Survey 2020. The percentages presented here are corrected versions of the data. Corrected data for health boards are presented in Appendix 3: Errata.

See the [Foot Screening and Disease](#) section for further details.

## Diabetic Retinal Screening

Table 24 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. Almost half of people with type 1 diabetes or type 2 diabetes did not have a record of eye screening (compared to approximately 20% or 1 in 5 in 2019).

Further information is available from the Scottish Diabetic Eye Screening collaborative <https://www.ndrs.scot.nhs.uk/> (latest annual report 2018/9 and performance report Q4 2019 at time of writing).

**Table 24 Percentage of people with type 1 or type 2 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 2019-2021.**

Year	Recorded within previous 15 months (%)	
	Type 1 diabetes	Type 2 diabetes
2021	56.8	52.8
2020	50.2	47.3
2019	80.9	84.8

Note: Excludes children under 12 years or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103).

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



## National: Use of Technology

### 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 25 describe the proportion of people recorded as receiving treatment with insulin pumps in Scotland and show that the proportions have increased slightly between 2019 and 2021.

**Table 25 Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and year, Scotland 2019-2021.**

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	%
2021	3,329	1,321	39.7	31,573	4,067	12.9	34,902	5,388	15.4
2020	3,160	1,249	39.5	30,901	3,635	11.8	34,061	4,884	14.3
2019	3,070	1,193	38.9	30,357	3,421	11.3	33,427	4,614	13.8

## Section 3: National and Regional Paediatric Section

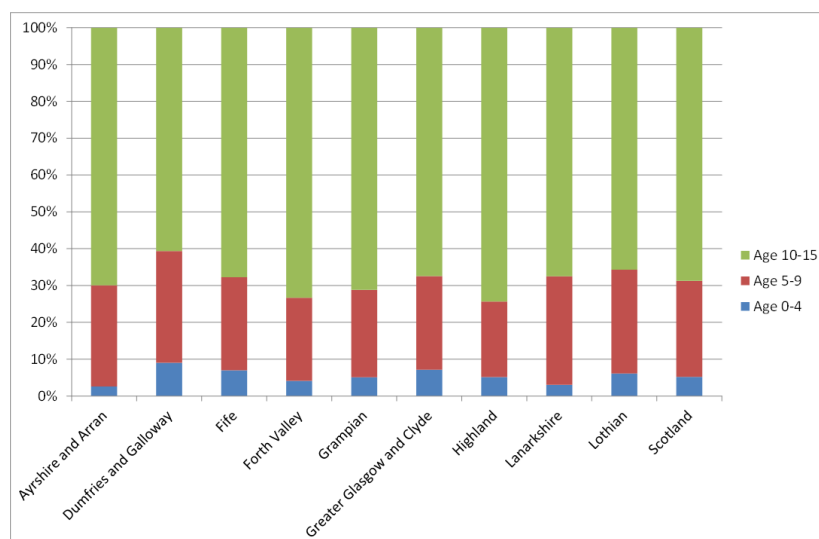
This section describes the epidemiology, completion of age-appropriate standard processes of care and recording of use of specific technologies specifically in the paediatric population. Please note that data for children are also presented in the main section as for previous Surveys.

The aim is to provide a basis for discussion about the potential for improving equity and quality of care and reducing risk of complications of diabetes. This is the second time that a separate section reporting data recorded in the SCI Diabetes system for children and young people with diabetes has been included in the Survey. The introduction to the topic that was provided in the 2020 Survey is not repeated here.

The definition of “paediatric” needs to be reviewed for future Surveys as a variety of age cut-off points are used throughout, with the inappropriate inclusion of some age groups for some processes of care. Further discussion and agreement about national standards of care is also required, for example on screening for renal complications. The small numbers of children in some categories means that the application of disclosure control means that meaningful numbers/proportions/rates cannot be displayed.

## Key Epidemiological Data for Children with Diabetes in Scotland

**Figure 4** Proportions of all children under 16 years of age with diabetes by age band and by health board, Scotland 2021.



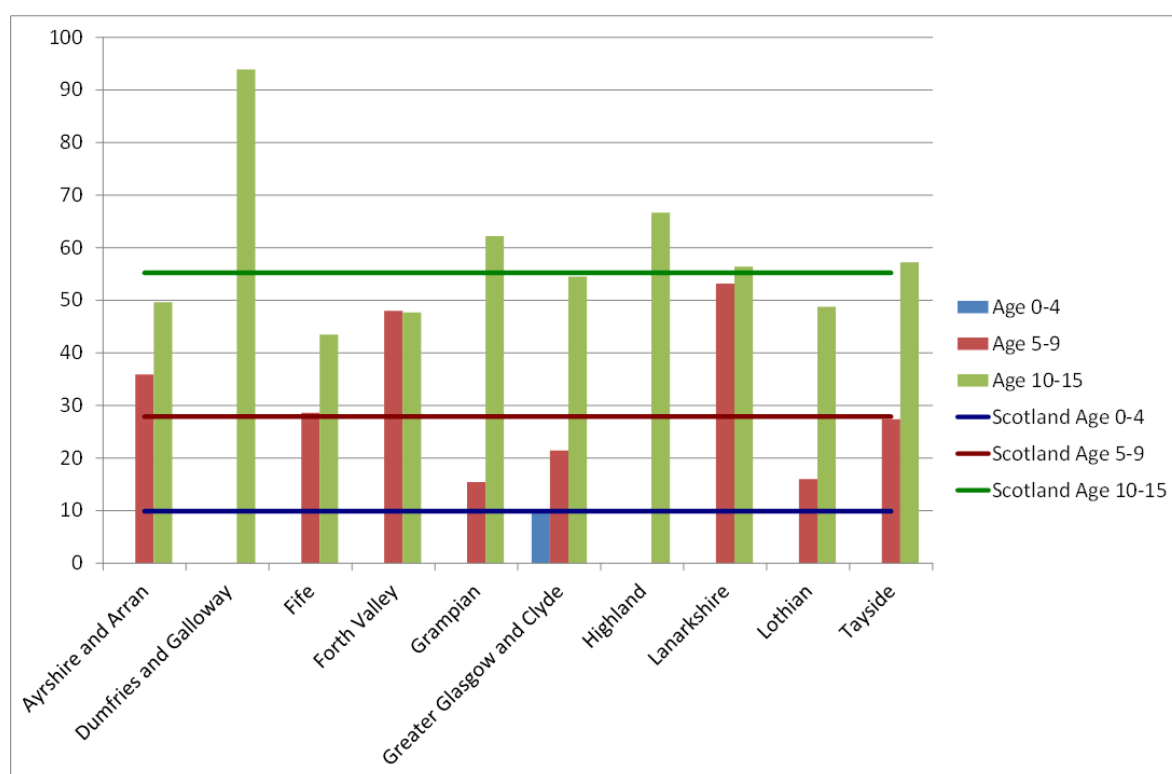
Note: Bars for boards with hidden data are not shown. The collation of data in a 0–4-year age group allows comparison of local data with those of international studies suggesting an increased prevalence and incidence in those under 5 years of age.

**Table 26** Proportions of all children under 16 years of age with diabetes in each band and by health board, Scotland 2021.

NHS board	Age 0-4		Age 5-9		Age 10-15		Total
	n	%	n	%	N	%	
Ayrshire and Arran	5	2.6	53	27.5	135	69.9	193
Borders	*	*	*	*	33	70.2	47
Dumfries and Galloway	8	9.0	27	30.3	54	60.7	89
Fife	13	7.0	47	25.3	126	67.7	186
Forth Valley	8	4.1	44	22.6	143	73.3	195
Grampian	15	5.1	70	23.7	210	71.2	295
Greater Glasgow and Clyde	37	7.1	132	25.4	350	67.4	519
Highland	8	5.1	32	20.5	116	74.4	156
Lanarkshire	11	3.0	108	29.5	247	67.5	366
Lothian	21	6.1	97	28.2	226	65.7	344
Orkney	0	0.0	*	*	*	*	5
Shetland	0	0.0	*	*	*	*	8
Tayside	*	*	*	*	110	68.8	160
Western Isles	*	*	*	*	18	75.0	24
<b>Scotland</b>	<b>134</b>	<b>5.2</b>	<b>675</b>	<b>26.1</b>	<b>1,778</b>	<b>68.7</b>	<b>2,587</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 5 Incidence rate (per 100,000 population per year) for children under 16 years of age with diabetes in each band and by health board, Scotland 2021.**



Note: Bars for boards and age groups with hidden data are not shown.

**Table 27 Number of new cases and incidence rate (per 100,000 population per year) for children under 16 years of age with diabetes in each band and by health board, Scotland 2021.**

NHS board	Age 0-4			Age 5-9			Age 10-15		
	n	In.	Pop.	n	In.	Pop.	n	In.	Pop.
Ayrshire and Arran	0	0	16,872	7	36	19,510	12	50	24,185
Borders	0	0	5,147	*	*	6,204	*	*	7,473
Dumfries and Galloway	*	*	6,229	*	*	7,236	9	94	9,585
Fife	*	*	17,873	6	29	20,988	11	43	25,291
Forth Valley	*	*	14,294	8	48	16,666	10	48	20,976
Grampian	*	*	29,567	5	15	32,351	24	62	38,582
Greater Glasgow and Clyde	6	10	58,981	14	21	65,323	40	54	73,399
Highland	*	*	13,817	*	*	16,248	14	67	21,002
Lanarkshire	*	*	34,139	20	53	37,606	26	56	46,083
Lothian	*	*	44,689	8	16	50,098	28	49	57,395
Orkney	0	0	978	*	*	1,116	*	*	1,477
Shetland	0	0	1,130	0	0	1,341	*	*	1,687
Tayside	0	0	18,984	6	27	21,921	15	57	26,205
Western Isles	0	0	1,106	0	0	1,295	*	*	1,734
<b>Scotland</b>	<b>26</b>	<b>10</b>	<b>263,806</b>	<b>83</b>	<b>28</b>	<b>297,903</b>	<b>196</b>	<b>55</b>	<b>355,074</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.

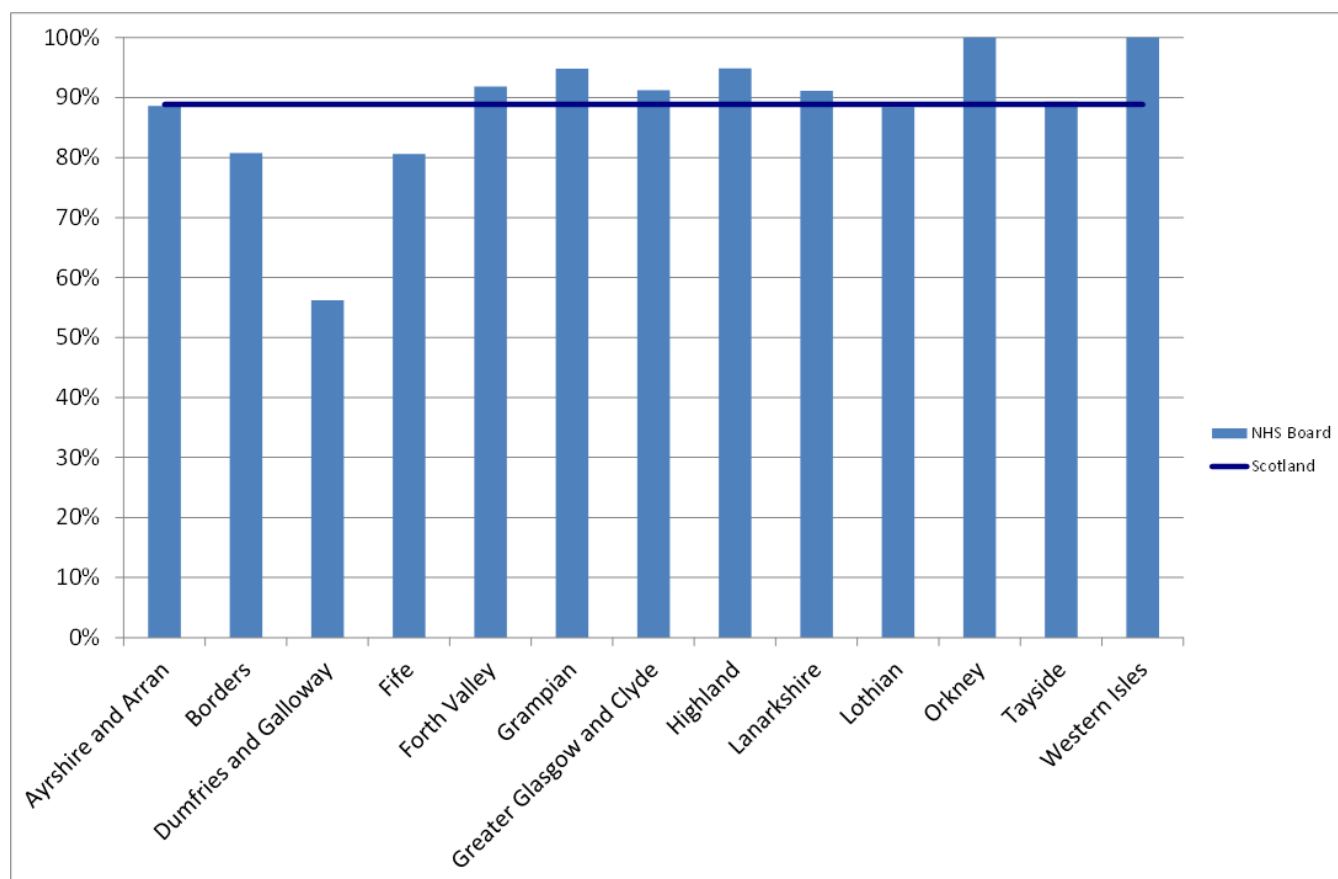
## Completion of Processes of Care for Children with Diabetes

Clinical standards for completion of processes of care vary by age as summarised in the table below. Data for comparable age groups and processes of care presented in previous surveys are presented. Achievement of treatment targets such as glycaemic control are presented in the relevant section of the main report.

**Table 28 Summary of age-appropriate care processes for children**

Age (years)	Care processes applicable
0-11	HbA1c and BMI
12+	HbA1c, BMI, BP, smoking status, eye screening*, urinary albumin**
All ages	Thyroid function, coeliac disease screening

Note: \* Retinopathy screening = Latest DRS Screening Status is "Attended - Successfully Screened" or "Attended - Unsuccessfully Screened". 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.

**Figure 6** Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2021.

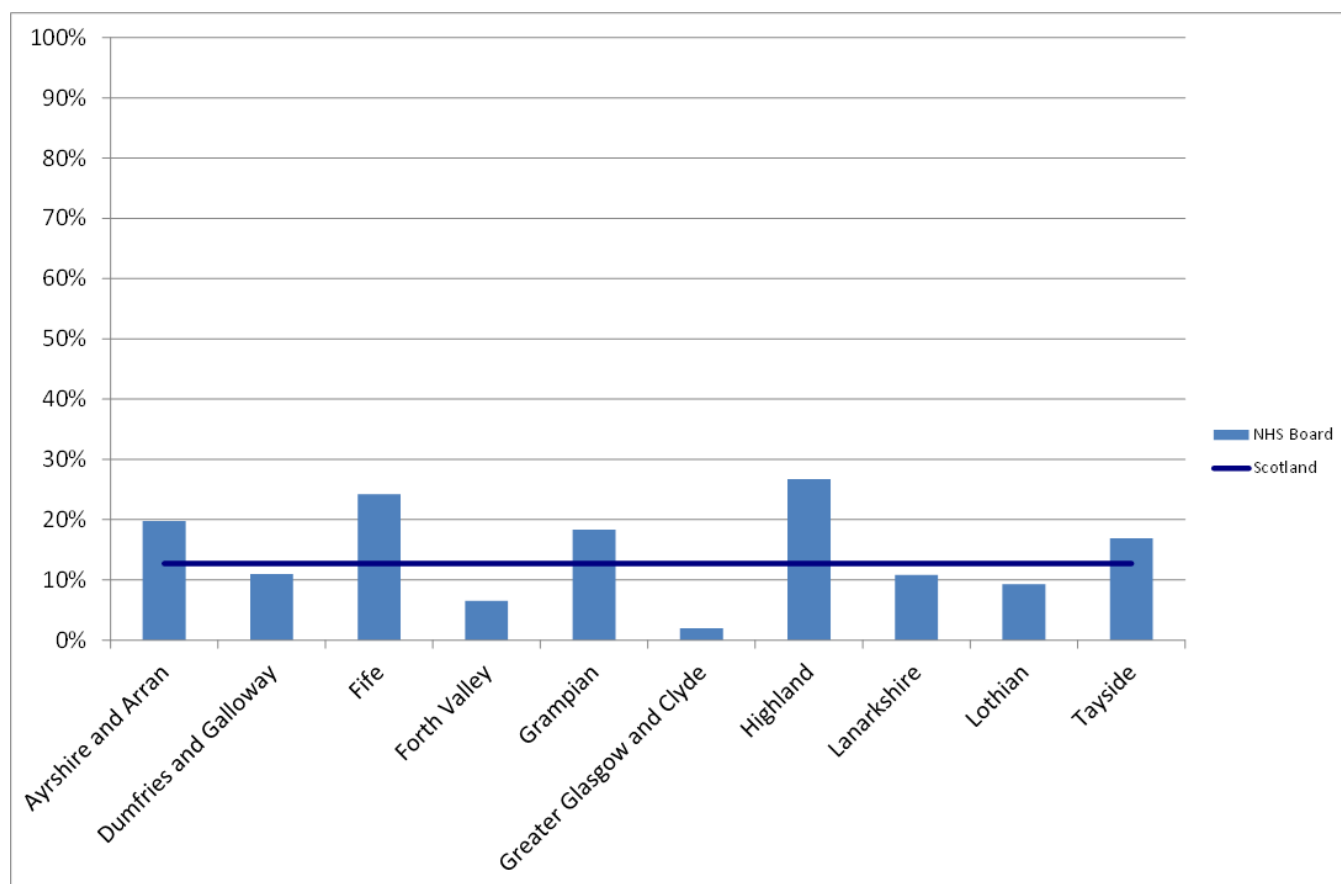
Note: Bars for boards with hidden data are not shown.

**Table 29** Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 0-11 (n)
	n	%	
Ayrshire and Arran	78	88.6	88
Borders	21	80.8	26
Dumfries and Galloway	27	56.3	48
Fife	79	80.6	98
Forth Valley	90	91.8	98
Grampian	128	94.8	135
Greater Glasgow and Clyde	239	91.2	262
Highland	74	94.9	78
Lanarkshire	174	91.1	191
Lothian	160	88.4	181
Orkney	*	100.0	*
Shetland	*	*	*
Tayside	67	89.3	75
Western Isles	8	100.0	8
<b>Scotland</b>	<b>1,150</b>	<b>88.9</b>	<b>1,294</b>

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

**Figure 7** Receiving all applicable processes of care - Type 1 and other aged 12-17 years by NHS board, Scotland 2021.



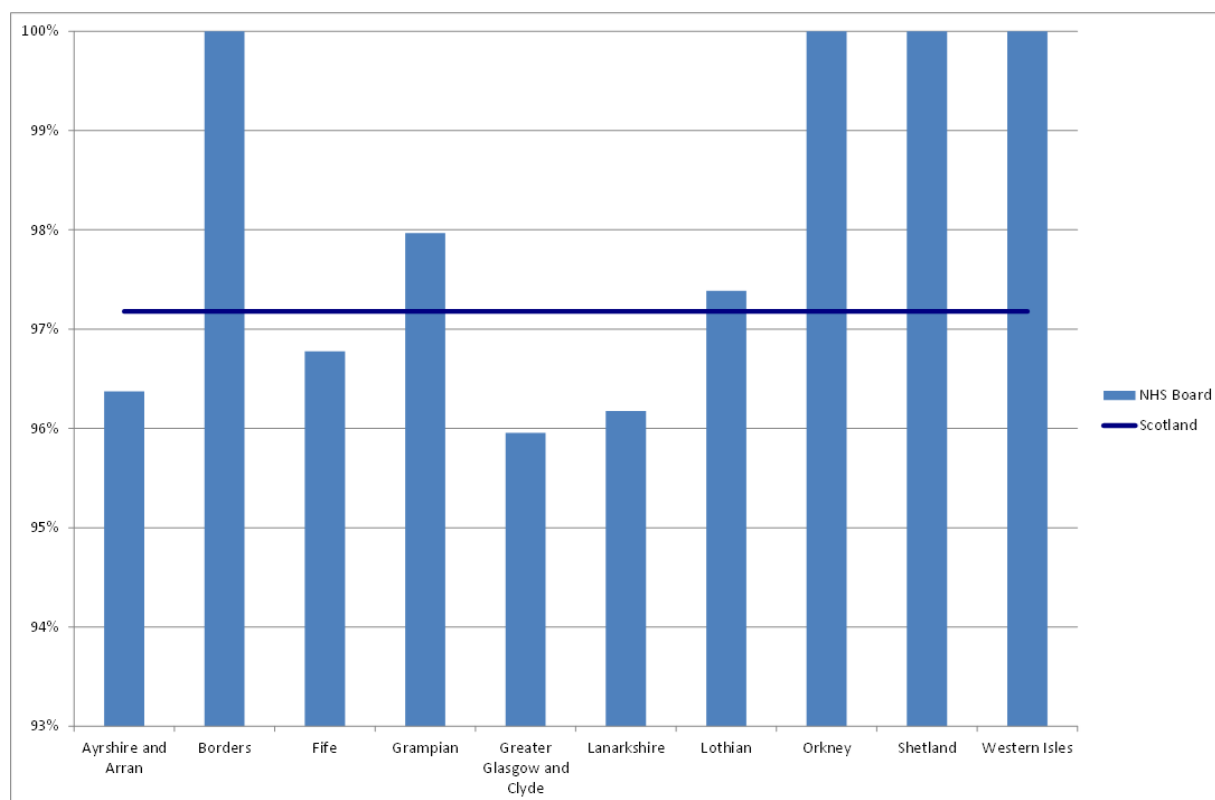
Note: Bars for boards with hidden data are not shown.

**Table 30** Receiving all applicable processes of care - Type 1 and other aged 12-17 years by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 12-17 (n)
	n	%	
Ayrshire and Arran	33	19.8	167
Borders	*	*	38
Dumfries and Galloway	8	11.0	73
Fife	37	24.2	153
Forth Valley	10	6.5	153
Grampian	47	18.4	256
Greater Glasgow and Clyde	8	2.0	405
Highland	39	26.7	146
Lanarkshire	34	10.8	314
Lothian	27	9.2	292
Orkney	*	*	6
Shetland	*	*	11
Tayside	24	16.9	142
Western Isles	*	*	20
<b>Scotland</b>	<b>277</b>	<b>12.7</b>	<b>2,176</b>

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

**Figure 8** Percentage of people under 16 years of age with diabetes with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2021.



Note: Bars for boards with hidden data are not 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.

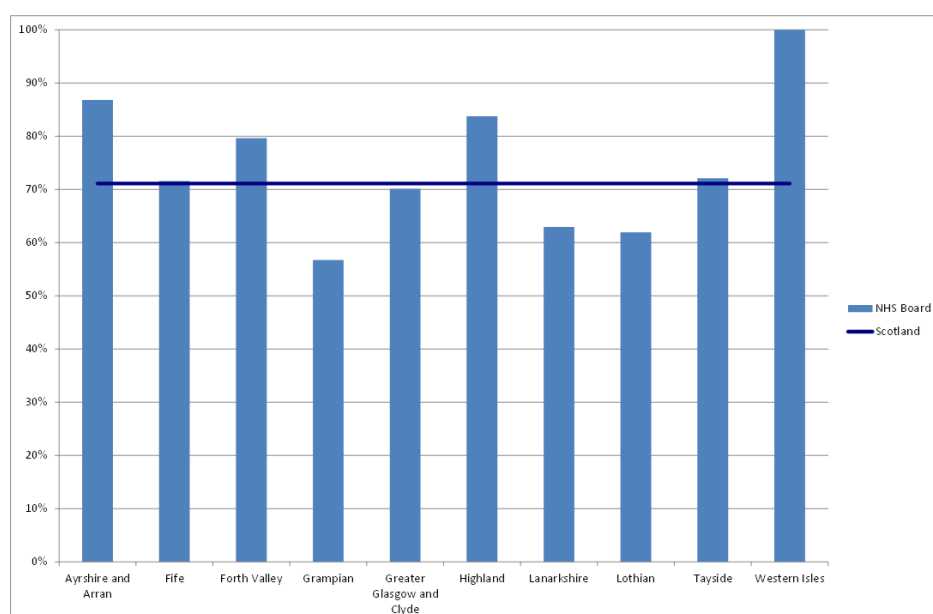
**Table 31** Number and percentage of people under 16 years of age with diabetes with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2021.

NHS board	Recorded		Not recorded	
	n	%	n	%
Ayrshire and Arran	186	96.4	7	3.6
Borders	47	100.0	0	0.0
Dumfries and Galloway	*	*	*	*
Fife	180	96.8	6	3.2
Forth Valley	*	*	*	*
Grampian	289	98.0	6	2.0
Greater Glasgow and Clyde	498	96.0	21	4.0
Highland	*	*	*	*
Lanarkshire	352	96.2	14	3.8
Lothian	335	97.4	9	2.6
Orkney	5	100.0	0	0.0
Shetland	8	100.0	0	0.0
Tayside	*	*	*	*
Western Isles	24	100.0	0	0.0
<b>Scotland</b>	<b>2,514</b>	<b>97.2</b>	<b>73</b>	<b>2.8</b>

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. All boards with hidden results have  $\geq 90\%$  recorded HbA<sub>1c</sub>.



**Figure 9** Percentage of children between 12 and 15 years of age with diabetes eligible for diabetic eye screening (DES) who were screened within the last 15 months by NHS board, Scotland 2021.



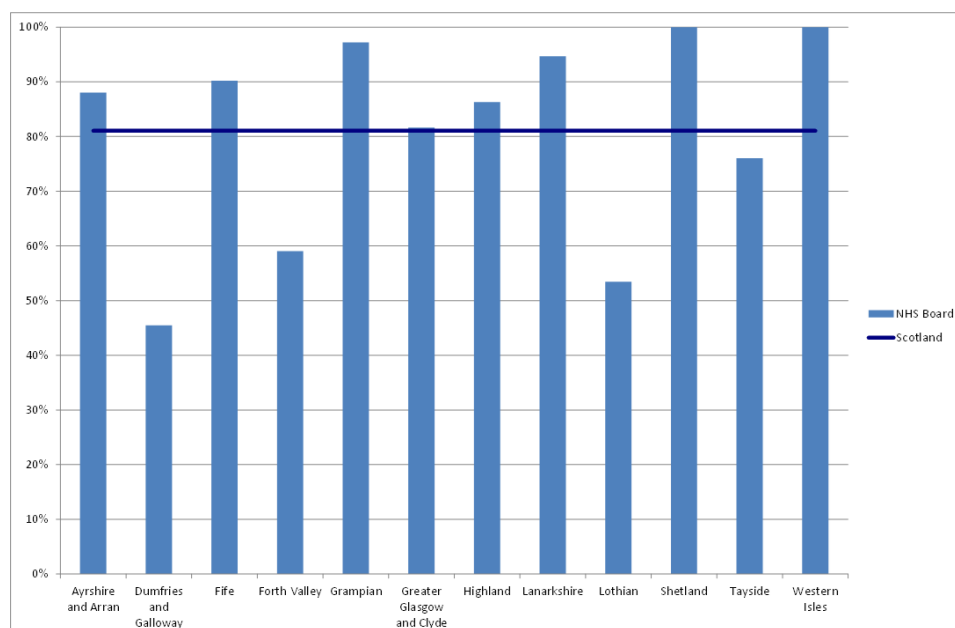
Note: Bars for boards with hidden data are not shown. The screening interval for low-risk populations, including children, changed in October 2020 to every two years and these data should be interpreted accordingly. Variations in local centre practice may result in different age-range exclusions, or 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 32** Number and percentage of children between 12 and 15 years of age with diabetes eligible for diabetic eye screening (DES) who were screened within the last 15 months by NHS board, Scotland 2021.

NHS board	Screened		Not screened	
	n	%	n	%
Ayrshire and Arran	92	86.8	14	13.2
Borders	*	*	*	*
Dumfries and Galloway	*	*	*	*
Fife	68	71.6	27	28.4
Forth Valley	82	79.6	21	20.4
Grampian	93	56.7	71	43.3
Greater Glasgow and Clyde	183	70.1	78	29.9
Highland	67	83.8	13	16.3
Lanarkshire	112	62.9	66	37.1
Lothian	104	61.9	64	38.1
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	62	72.1	24	27.9
Western Isles	16	100.0	0	0.0
<b>Scotland</b>	<b>947</b>	<b>71.1</b>	<b>385</b>	<b>28.9</b>

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

**Figure 10** Percentage of children between 5 and 15 years of age with diabetes with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2021.



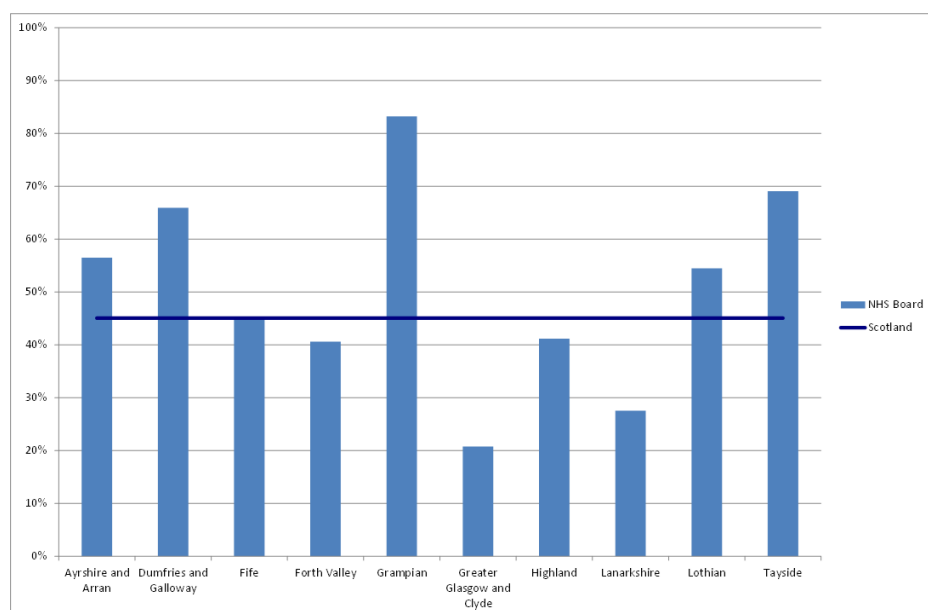
Note: Bars for boards with hidden data are not shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence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

**Table 33** Number and percentage of children between 5 and 15 years of age with diabetes with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2021.

NHS board	Recorded		Not recorded	
	n	%	n	%
Ayrshire and Arran	103	88.0	14	12.0
Borders	*	*	*	*
Dumfries and Galloway	20	45.5	24	54.5
Fife	83	90.2	9	9.8
Forth Valley	62	59.0	43	41.0
Grampian	176	97.2	5	2.8
Greater Glasgow and Clyde	324	81.6	73	18.4
Highland	82	86.3	13	13.7
Lanarkshire	337	94.7	19	5.3
Lothian	101	53.4	88	46.6
Orkney	*	*	*	*
Shetland	8	100.0	0	0.0
Tayside	73	76.0	23	24.0
Western Isles	20	100.0	0	0.0
<b>Scotland</b>	<b>1,408</b>	<b>81.1</b>	<b>329</b>	<b>18.9</b>

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Only children of 12 years of age and older are expected to have their blood pressure measured. Only eligible children, from their 5th birthday until the day before their 16th birthday, are included.

**Figure 11 Percentage of children between 5 and 15 years of age with diabetes with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2021.**



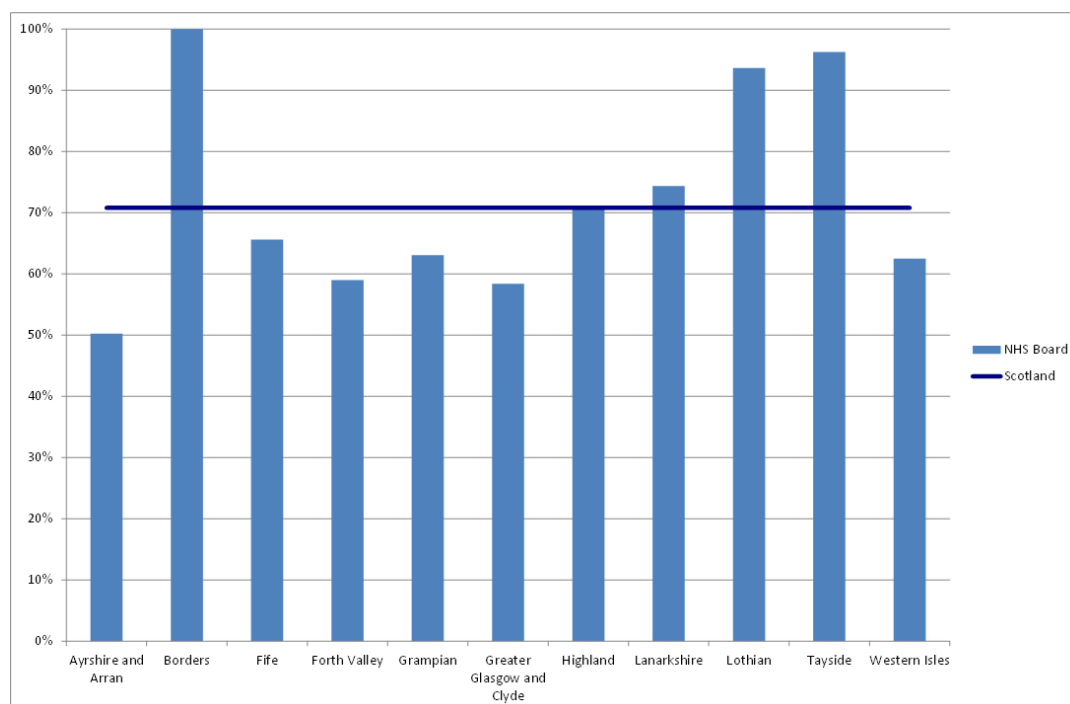
Note: Bars for boards with hidden data are not shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence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

**Table 34 Number and percentage of children between 5 and 15 years of age with diabetes with a recorded albumin / creatinine ratio (ACR) within the previous 15 months by NHS board, Scotland 2021.**

NHS board	Recorded		Not recorded	
	N	%	n	%
Ayrshire and Arran	61	56.5	47	43.5
Borders	*	*	*	*
Dumfries and Galloway	29	65.9	15	34.1
Fife	40	44.9	49	55.1
Forth Valley	41	40.6	60	59.4
Grampian	129	83.2	26	16.8
Greater Glasgow and Clyde	60	20.8	229	79.2
Highland	35	41.2	50	58.8
Lanarkshire	54	27.6	142	72.4
Lothian	109	54.5	91	45.5
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	58	69.0	26	31.0
Western Isles	*	*	*	*
<b>Scotland</b>	<b>632</b>	<b>45.0</b>	<b>771</b>	<b>55.0</b>

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Only children of 12 years of age and older are expected to have their ACR measured. Only eligible children, from their 5<sup>th</sup> birthday until the day before their 16<sup>th</sup> birthday, are included.

**Figure 12** Percentage of people under 16 years of age with diabetes recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2021.



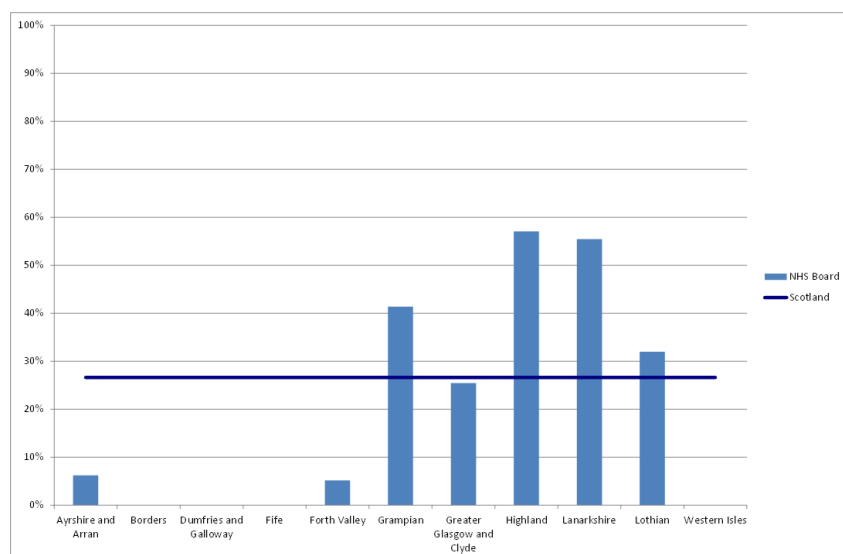
Note: Bars for boards with hidden data are not shown. Variations in local centre practice may result in different age-range exclusions, or screening tests being carried out at different intervals. Annual data may therefore not reflect actual numbers appropriately screened. Agreement of, and adherence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

**Table 35** Number and percentage of people under 16 years of age with diabetes recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2021.

NHS board	Recorded		Not recorded	
	n	%	n	%
Ayrshire and Arran	97	50.3	96	49.7
Borders	47	100.0	0	0.0
Dumfries and Galloway	*	*	*	*
Fife	122	65.6	64	34.4
Forth Valley	115	59.0	80	41.0
Grampian	186	63.1	109	36.9
Greater Glasgow and Clyde	303	58.4	216	41.6
Highland	110	70.5	46	29.5
Lanarkshire	272	74.3	94	25.7
Lothian	322	93.6	22	6.4
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	154	96.3	6	3.8
Western Isles	15	62.5	9	37.5
<b>Scotland</b>	<b>1,831</b>	<b>70.8</b>	<b>756</b>	<b>29.2</b>

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

**Figure 13 Percentage of people under 16 years of age with diabetes recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2021.**



Note: Bars for boards with hidden data are not 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 36 Number and percentage of people under 16 years of age with diabetes recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2021.**

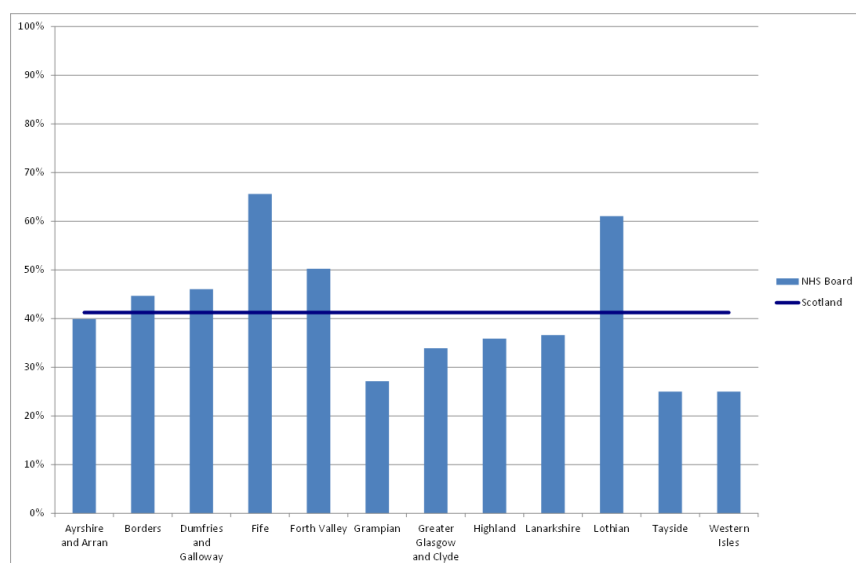
NHS board	Recorded		Not recorded	
	n	%	n	%
Ayrshire and Arran	12	6.2	181	93.8
Borders	0	0.0	47	100.0
Dumfries and Galloway	0	0.0	89	100.0
Fife	0	0.0	186	100.0
Forth Valley	10	5.1	185	94.9
Grampian	122	41.4	173	58.6
Greater Glasgow and Clyde	132	25.4	387	74.6
Highland	89	57.1	67	42.9
Lanarkshire	203	55.5	163	44.5
Lothian	110	32.0	234	68.0
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	*	*	*	*
Western Isles	0	0.0	24	100.0
<b>Scotland</b>	<b>689</b>	<b>26.6</b>	<b>1,898</b>	<b>73.4</b>

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

## Use of Insulin Pumps and Other Technology

In 2011 a national target was set that, by March 2013, 25% of all those in Scotland under 18 years of age with type 1 diabetes should have access to an insulin pump. This target was met but considerable variation exists between Health Boards.

**Figure 14** Percentage of people under 16 years of age with diabetes recorded as using an insulin pump by NHS board, Scotland 2021.



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

**Table 37** Number and percentage of people under 16 years of age with diabetes recorded as using an insulin pump by NHS board, Scotland 2021.

NHS board	Pump		No pump	
	n	%	n	%
Ayrshire and Arran	77	39.9	116	60.1
Borders	21	44.7	26	55.3
Dumfries and Galloway	41	46.1	48	53.9
Fife	122	65.6	64	34.4
Forth Valley	98	50.3	97	49.7
Grampian	80	27.1	215	72.9
Greater Glasgow and Clyde	176	33.9	343	66.1
Highland	56	35.9	100	64.1
Lanarkshire	134	36.6	232	63.4
Lothian	210	61.0	134	39.0
Orkney	*	*	*	*
Shetland	*	*	*	*
Tayside	40	25.0	120	75.0
Western Isles	6	25.0	18	75.0
<b>Scotland</b>	<b>1,067</b>	<b>41.2</b>	<b>1,520</b>	<b>58.8</b>

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

## Section 4: Regional Epidemiology and Key Characteristics of People with Diabetes

### 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 from the previous year so that the 2021 survey uses diabetes data from 2021 but mid-year population estimates from 2020. Table 38, Figure 15 and Figure 16 show crude and age-adjusted figures for the prevalence of diabetes of all types.

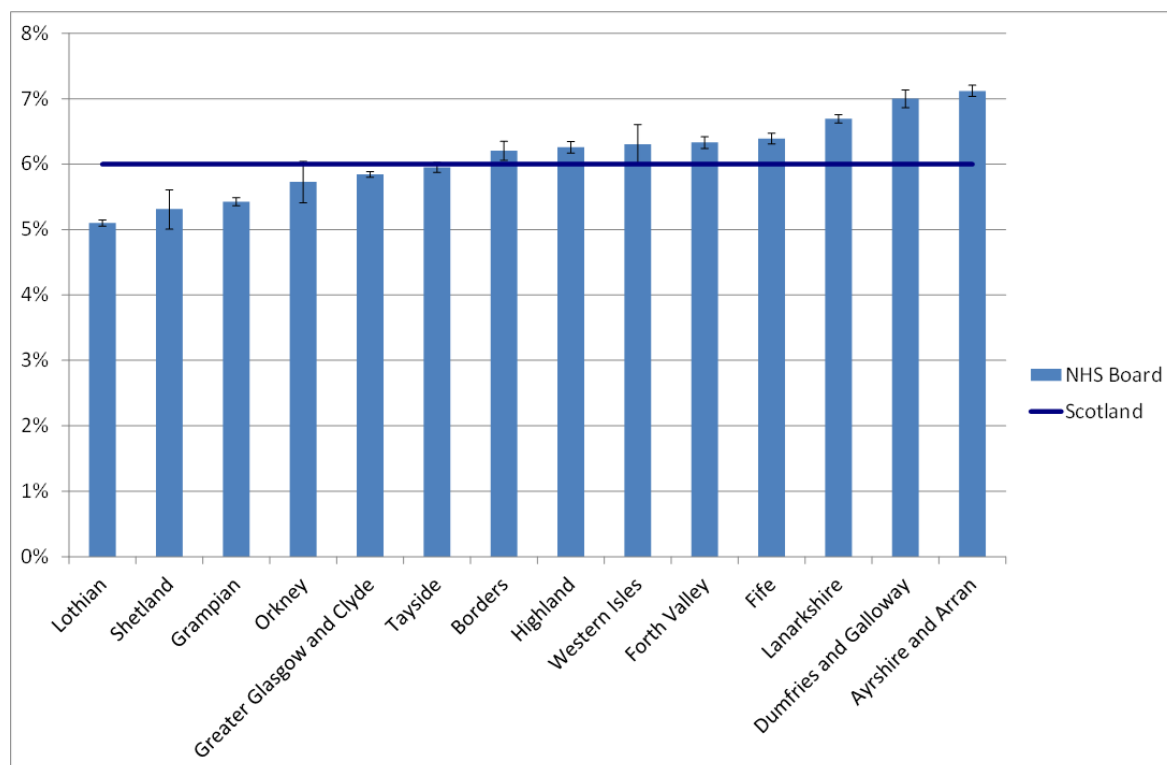
The age-adjusted figures take account of the fact that the average age differs between boards and that older populations have higher diabetes prevalence.

Adjusting for age results in decreases in prevalence for Boards with older than average populations and increases in prevalence for Boards with younger than average populations compared to crude prevalence.

**Table 38 Crude and age-adjusted prevalence of diabetes (all types), by NHS board, ranked by age-adjusted prevalence, Scotland 2021.**

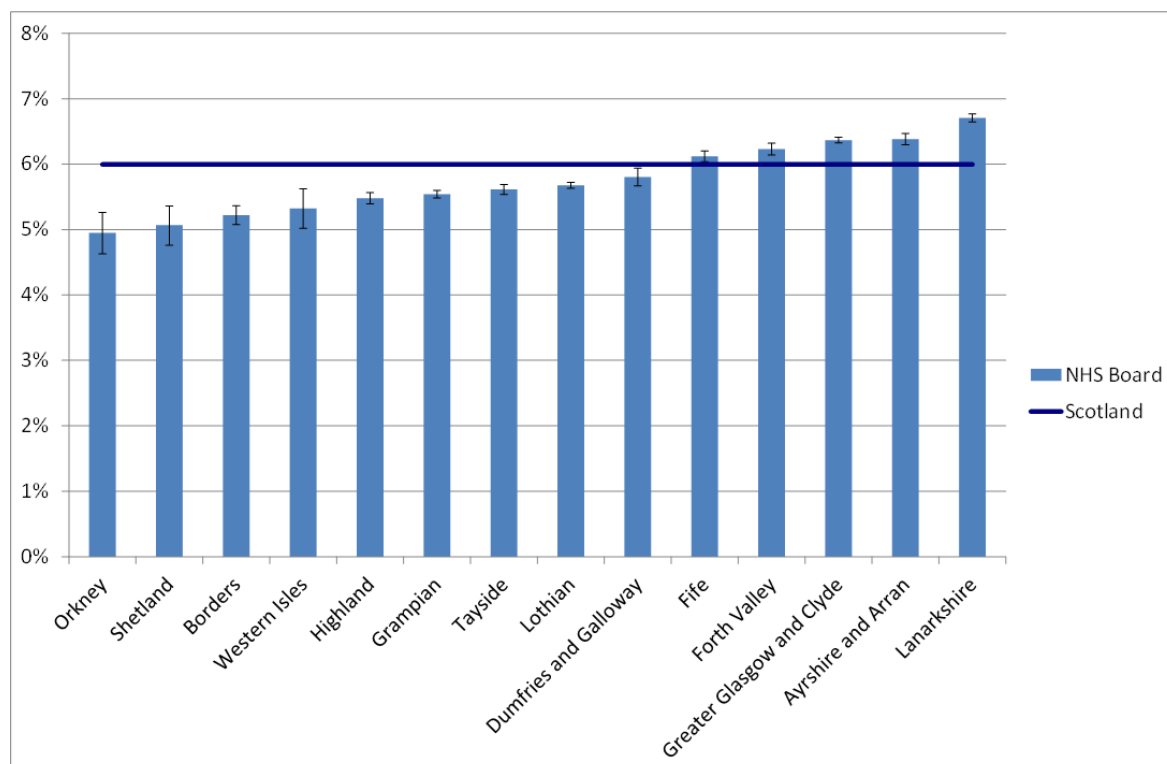
NHS board	Population (n)	Number on the diabetes register at the end of the year (n)	Crude prevalence (%)	Age-adjusted prevalence (%)
Orkney	22,400	1,284	5.7	5.0
Shetland	22,870	1,215	5.3	5.1
Borders	115,240	7,151	6.2	5.2
Western Isles	26,720	1,685	6.3	5.3
Highland	320,860	20,083	6.3	5.5
Grampian	585,550	31,778	5.4	5.5
Tayside	416,550	24,789	6.0	5.6
Lothian	912,490	46,532	5.1	5.7
Dumfries and Galloway	148,290	10,382	7.0	5.8
Fife	374,130	23,910	6.4	6.1
Forth Valley	305,930	19,368	6.3	6.2
Greater Glasgow and Clyde	1,185,240	69,241	5.8	6.4
Ayrshire and Arran	367,990	26,198	7.1	6.4
Lanarkshire	661,960	44,311	6.7	6.7
<b>Scotland</b>	<b>5,466,220</b>	<b>327,927</b>	<b>6.0</b>	<b>6.0</b>

**Figure 15 Crude diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2021.**



Note: Vertical capped lines show 95% confidence intervals.

**Figure 16 Age-adjusted diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2021.**



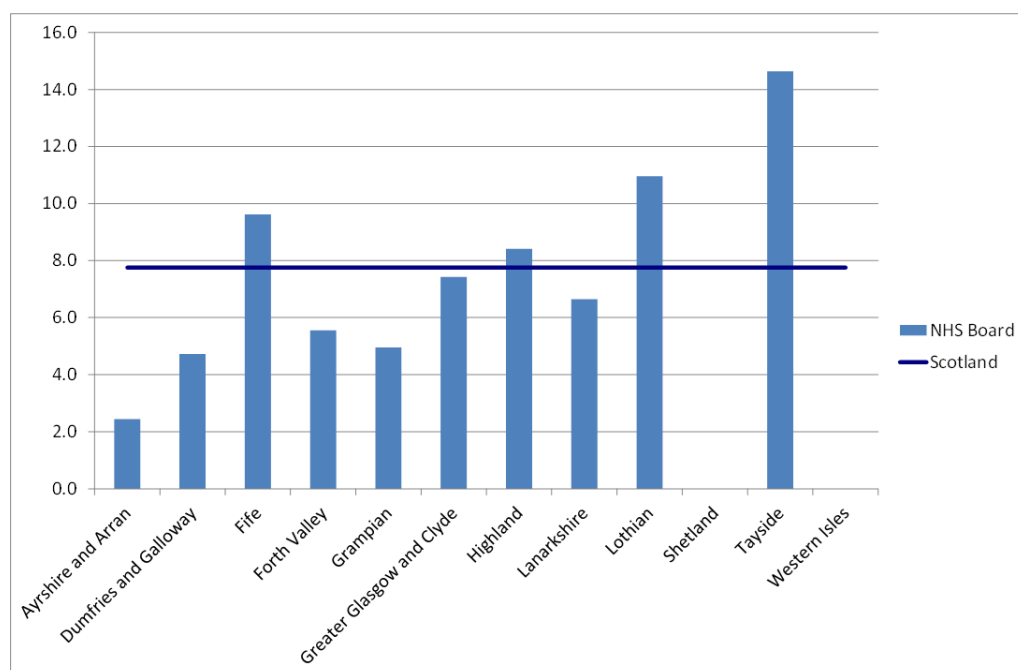
Note: Vertical capped lines show 95% confidence intervals.



## Monogenic Diabetes

Differences in prevalence of monogenic diabetes by Health Board suggest differences in testing for this form of diabetes.

**Figure 17** Prevalence per 100,000 people of monogenic diabetes, by NHS Board, Scotland 2021.



Note: Bars for boards with hidden data are not shown.

**Table 39** Prevalence per 100,000 people of monogenic diabetes, by NHS Board, Scotland 2021.

NHS board	Monogenic diabetes (n)	Prevalence
Ayrshire and Arran	9	2.4
Borders	*	*
Dumfries and Galloway	7	4.7
Fife	36	9.6
Forth Valley	17	5.6
Grampian	29	5.0
Greater Glasgow and Clyde	88	7.4
Highland	27	8.4
Lanarkshire	44	6.6
Lothian	100	11.0
Orkney	*	*
Shetland	0	0.0
Tayside	61	14.6
Western Isles	0	0.0
<b>Scotland</b>	<b>424</b>	<b>7.8</b>

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

**Table 40** Number of people with diabetes and the distribution of diabetes type, by NHS board, ranked by descending percentage with type 2 diabetes, Scotland 2021.

NHS board	Type 1		Type 2		Other types of diabetes (n)	Total
	n	%	n	%		
Ayrshire and Arran	2,506	9.6	23,546	89.9	146	26,198
Fife	2,401	10.0	21,265	88.9	244	23,910
Tayside	2,409	9.7	21,962	88.6	418	24,789
Greater Glasgow and Clyde	7,030	10.2	61,126	88.3	1,085	69,241
Dumfries and Galloway	1,094	10.5	9,130	87.9	158	10,382
Forth Valley	2,099	10.8	17,023	87.9	246	19,368
Orkney	143	11.1	1,126	87.7	15	1,284
Lanarkshire	4,709	10.6	38,771	87.5	831	44,311
Borders	763	10.7	6,236	87.2	152	7,151
Grampian	3,788	11.9	27,637	87.0	353	31,778
Highland	2,298	11.4	17,329	86.3	456	20,083
Lothian	5,307	11.4	39,969	85.9	1,256	46,532
Shetland	151	12.4	1,043	85.8	21	1,215
Western Isles	230	13.6	1,443	85.6	12	1,685
<b>Scotland</b>	<b>34,928</b>	<b>10.7</b>	<b>287,606</b>	<b>87.7</b>	<b>5,393</b>	<b>327,927</b>

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

## Mortality

**Table 41** 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 2021.

NHS board	Deaths	
	People (n)	% of population
Lothian	1,827	3.8
Fife	963	3.9
Grampian	1,295	3.8
Highland	824	3.9
Greater Glasgow and Clyde	2,848	3.9
Shetland	51	3.9
Lanarkshire	1,872	4.0
Orkney	55	4.0
Ayrshire and Arran	1,161	4.1
Forth Valley	866	4.1
Borders	321	4.2
Western Isles	76	4.3
Dumfries and Galloway	471	4.3
Tayside	1,154	4.3
<b>Scotland</b>	<b>13,784</b>	<b>4.3</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 the size of the population changes during the year as people develop diabetes or die. 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.

## Complications of Diabetes Regional Detail

### Myocardial Infarction and Cardiac Revascularisation Summary

#### *Myocardial Infarction Regional Detail*

**Table 42** 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 2021.

NHS board	Recorded as having had an MI			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	*	*	93	8.3
Grampian	133	3.5	2,451	8.9
Tayside	93	3.9	1,965	8.9
Fife	87	3.6	1,917	9.0
Lothian	155	2.9	3,682	9.2
Forth Valley	58	2.8	1,613	9.5
Dumfries and Galloway	46	4.2	880	9.6
Lanarkshire	190	4.0	3,778	9.7
Ayrshire and Arran	104	4.2	2,308	9.8
Highland	84	3.7	1,737	10.0
Borders	35	4.6	629	10.1
Greater Glasgow and Clyde	247	3.5	6,184	10.1
Shetland	*	*	106	10.2
Western Isles	9	3.9	153	10.6
<b>Scotland</b>	<b>1,249</b>	<b>3.6</b>	<b>27,496</b>	<b>9.6</b>

## Cardiac Revascularisation Regional Detail

**Table 43** 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 2021.

NHS board	Recorded as having undergone cardiac revascularisation			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	*	*	69	6.1
Fife	63	2.6	1,324	6.2
Forth Valley	45	2.1	1,169	6.9
Tayside	74	3.1	1,571	7.2
Lothian	122	2.3	2,948	7.4
Lanarkshire	135	2.9	2,912	7.5
Western Isles	9	3.9	109	7.6
Greater Glasgow and Clyde	184	2.6	4,626	7.6
Dumfries and Galloway	38	3.5	696	7.6
Shetland	*	*	79	7.6
Ayrshire and Arran	75	3.0	1,819	7.7
Borders	25	3.3	485	7.8
Highland	70	3.0	1,416	8.2
Grampian	138	3.6	2,373	8.6
<b>Scotland</b>	<b>985</b>	<b>2.8</b>	<b>21,596</b>	<b>7.5</b>

## Stroke

A total of 16,230 (5.0%) people with type 1 or type 2 diabetes were recorded as having ever had a cerebrovascular accident or stroke.

**Table 44** 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 2021.

NHS board	Recorded as having had a stroke			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Orkney	*	*	37	3.3
Shetland	*	*	40	3.8
Tayside	44	1.8	942	4.3
Grampian	79	2.1	1,323	4.8
Lanarkshire	99	2.1	1,879	4.8
Western Isles	6	2.6	70	4.9
Dumfries and Galloway	22	2.0	461	5.0
Forth Valley	42	2.0	868	5.1
Lothian	112	2.1	2,244	5.6
Fife	66	2.7	1,214	5.7
Highland	53	2.3	992	5.7
Greater Glasgow and Clyde	133	1.9	3,510	5.7
Ayrshire and Arran	70	2.8	1,478	6.3
Borders	20	2.6	421	6.8
<b>Scotland</b>	<b>751</b>	<b>2.2</b>	<b>15,479</b>	<b>5.4</b>

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

## End Stage Renal Failure

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

**Table 45** 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 2021.

NHS board	Recorded as having end stage renal failure			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Borders	13	1.7	24	0.4
Shetland	0	0.0	5	0.5
Fife	24	1.0	102	0.5
Ayrshire and Arran	38	1.5	113	0.5
Tayside	47	2.0	118	0.5
Forth Valley	31	1.5	92	0.5
Orkney	*	*	6	0.5
Lothian	51	1.0	225	0.6
Highland	27	1.2	98	0.6
Grampian	79	2.1	164	0.6
Lanarkshire	73	1.6	233	0.6
Dumfries and Galloway	17	1.6	63	0.7
Greater Glasgow and Clyde	104	1.5	429	0.7
Western Isles	*	*	14	1.0
<b>Scotland</b>	<b>511</b>	<b>1.5</b>	<b>1,686</b>	<b>0.6</b>

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

## Foot Ulcers

**Table 46** 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 2021.

NHS board	Recorded as ever having had a foot ulcer			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Shetland	*	*	23	2.2
Borders	41	5.4	140	2.2
Forth Valley	153	7.3	394	2.3
Ayrshire and Arran	155	6.2	640	2.7
Dumfries and Galloway	71	6.5	262	2.9
Grampian	217	5.7	805	2.9
Highland	138	6.0	670	3.9
Tayside	178	7.4	851	3.9
Lothian	347	6.5	1,710	4.3
Fife	180	7.5	924	4.3
Greater Glasgow and Clyde	616	8.8	2,789	4.6
Orkney	*	*	60	5.3
Lanarkshire	677	14.4	2,193	5.7
Western Isles	20	8.7	115	8.0
<b>Scotland</b>	<b>2,801</b>	<b>8.0</b>	<b>11,576</b>	<b>4.0</b>

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



## ***Foot Ulcer Prevalence and Incidence***

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 data for those under 18 have been omitted.

### ***Methodology***

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

Numerator 1 (Prevalent ulcers) = number of patients with diabetes by type of diabetes whose latest foot status records one or more active foot ulcer/s.

Numerator 2 (Incident ulcers) = number of patients with diabetes by type of diabetes who have had a new ulcer recorded in the last 12 months via any source.

Denominator = the total number of people with diabetes by type of diabetes.

### ***Notes***

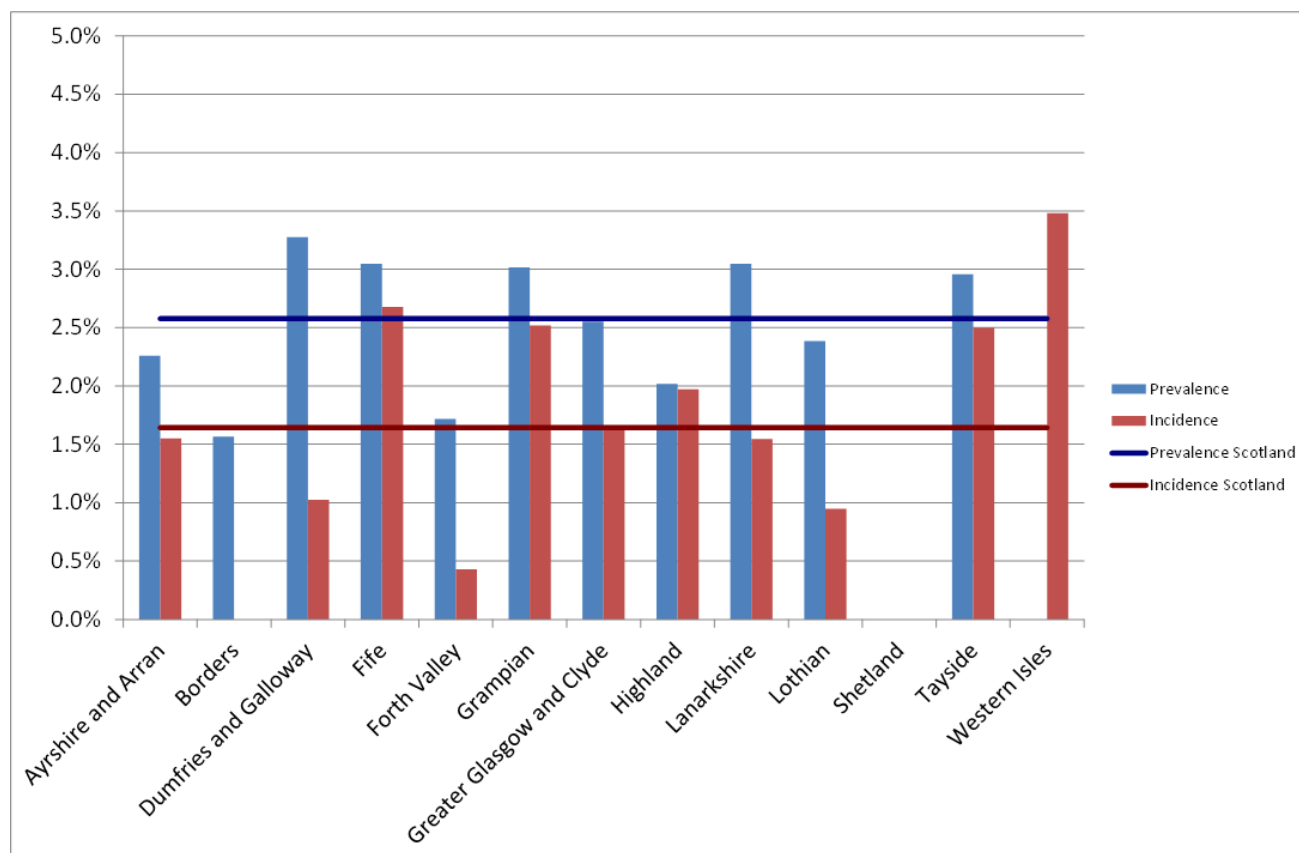
Incident ulcers in this report are all new ulcers that occurred in the prior 12 months even in patients with a previous history of foot ulceration. It is not where a person with totally "clean" feet develops a first ever foot ulcer.

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 18 Foot Ulcer Prevalence and Incidence - Type 1 aged 18+ years by NHS board, Scotland 2021.**



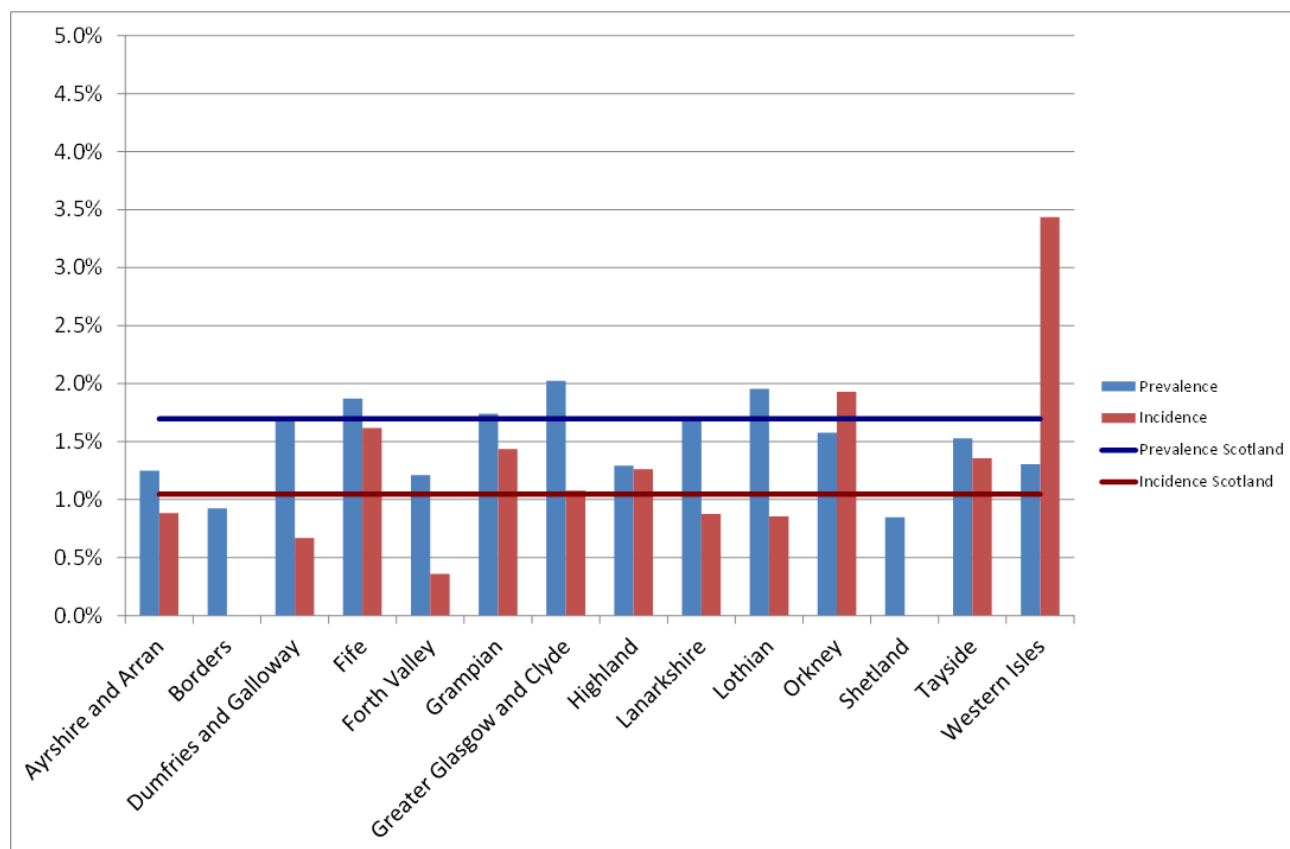
Note: Bars for boards with hidden data are not shown.

**Table 47 Foot Ulcer Prevalence and Incidence - Type 1 aged 18+ years by NHS board, Scotland 2021.**

NHS board	Prevalence		Incidence		All aged 18+ (n)
	People (n)	%	People (n)	%	
Ayrshire and Arran	51	2.3	35	1.6	2,256
Borders	11	1.6	*	*	702
Dumfries and Galloway	32	3.3	10	1.0	977
Fife	66	3.0	58	2.7	2,166
Forth Valley	32	1.7	8	0.4	1,863
Grampian	103	3.0	86	2.5	3,412
Greater Glasgow and Clyde	163	2.6	104	1.6	6,383
Highland	42	2.0	41	2.0	2,080
Lanarkshire	128	3.0	65	1.5	4,200
Lothian	116	2.4	46	0.9	4,862
Orkney	*	*	*	*	135
Shetland	0	0.0	0	0.0	137
Tayside	65	3.0	55	2.5	2,198
Western Isles	*	*	*	*	201
<b>Scotland</b>	<b>814</b>	<b>2.6</b>	<b>519</b>	<b>1.6</b>	<b>31,572</b>

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

**Figure 19 Foot Ulcer Prevalence and Incidence - Type 2 and other aged 18+ years by NHS board, Scotland 2021.**



Note: Bars for boards with hidden data are not shown.

**Table 48 Foot Ulcer Prevalence and Incidence - Type 2 and other aged 18+ years by NHS board, Scotland 2021.**

NHS board	Prevalence		Incidence		All aged 18+ (n)
	People (n)	%	People (n)	%	
Ayrshire and Arran	296	1.2	209	0.9	23,687
Borders	59	0.9	*	*	6,381
Dumfries and Galloway	159	1.7	62	0.7	9,280
Fife	402	1.9	348	1.6	21,486
Forth Valley	209	1.2	62	0.4	17,254
Grampian	487	1.7	402	1.4	27,982
Greater Glasgow and Clyde	1,258	2.0	671	1.1	62,176
Highland	230	1.3	224	1.3	17,775
Lanarkshire	671	1.7	346	0.9	39,521
Lothian	805	2.0	353	0.9	41,193
Orkney	18	1.6	22	1.9	1,141
Shetland	9	0.8	*	*	1,063
Tayside	342	1.5	304	1.4	22,372
Western Isles	19	1.3	50	3.4	1,455
<b>Scotland</b>	<b>4,964</b>	<b>1.7</b>	<b>3,068</b>	<b>1.0</b>	<b>292,766</b>

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

## Lower Limb Amputation

**Table 49** 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 2021.

NHS board	Recorded as ever having had a lower limb amputation			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Lanarkshire	30	0.6	103	0.3
Highland	21	0.9	62	0.4
Forth Valley	11	0.5	65	0.4
Lothian	26	0.5	161	0.4
Ayrshire and Arran	22	0.9	99	0.4
Grampian	35	0.9	123	0.4
Borders	*	*	23	0.4
Greater Glasgow and Clyde	63	0.9	284	0.5
Tayside	28	1.2	104	0.5
Fife	18	0.7	105	0.5
Western Isles	*	*	9	0.6
Dumfries and Galloway	19	1.7	60	0.7
Shetland	0	0.0	*	*
Orkney	*	*	*	*
<b>Scotland</b>	<b>281</b>	<b>0.8</b>	<b>1,211</b>	<b>0.4</b>

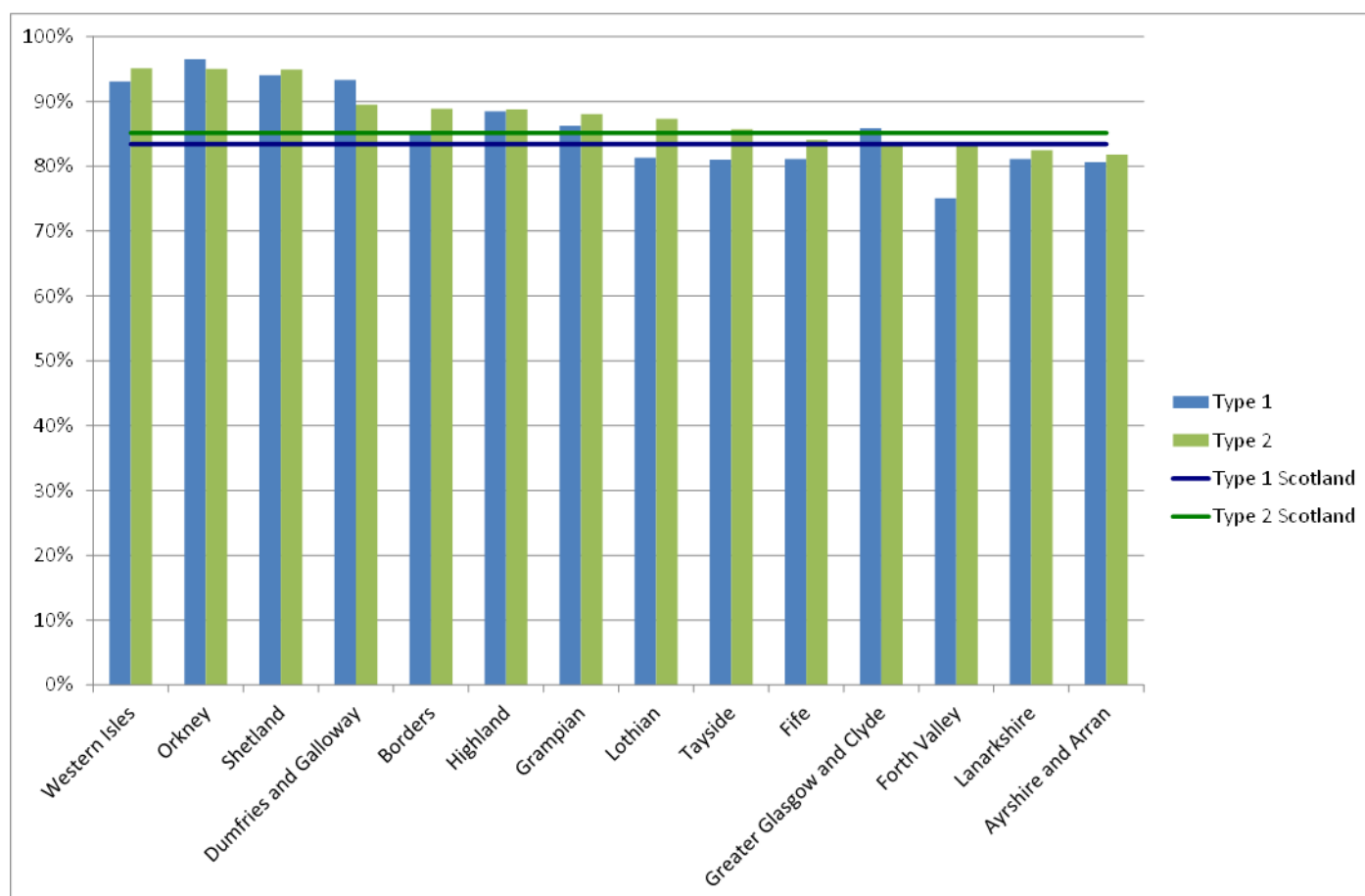
Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures.

## Section 5: Regional Detail: Proportions Receiving Processes of Care and Achieving Treatment Targets

Please note that spine charts for each Health Board are given in Appendix 2: Spine Charts Displaying Health Board Performance.

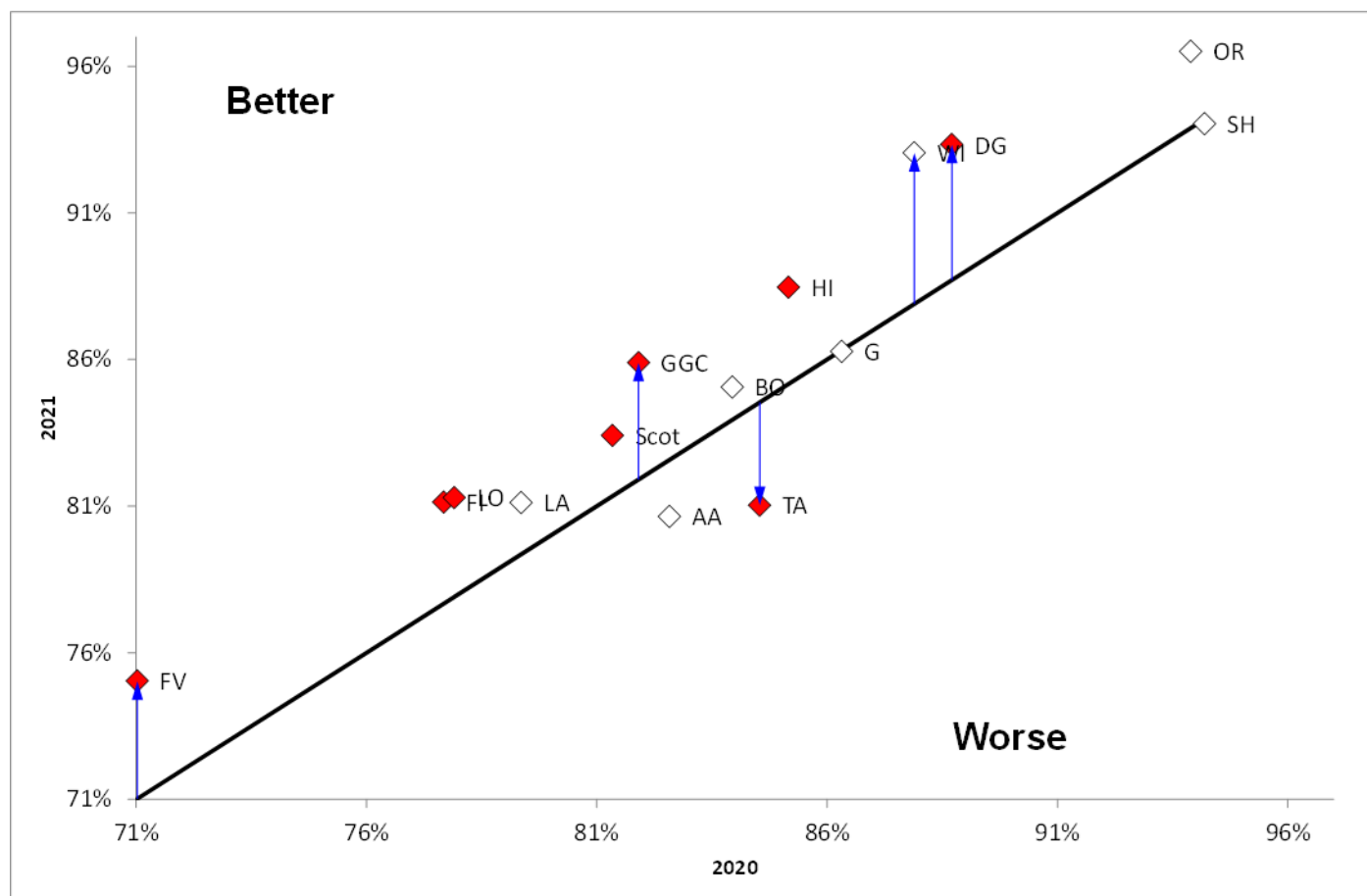
### Glycaemic Control

**Figure 20** 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 2021.



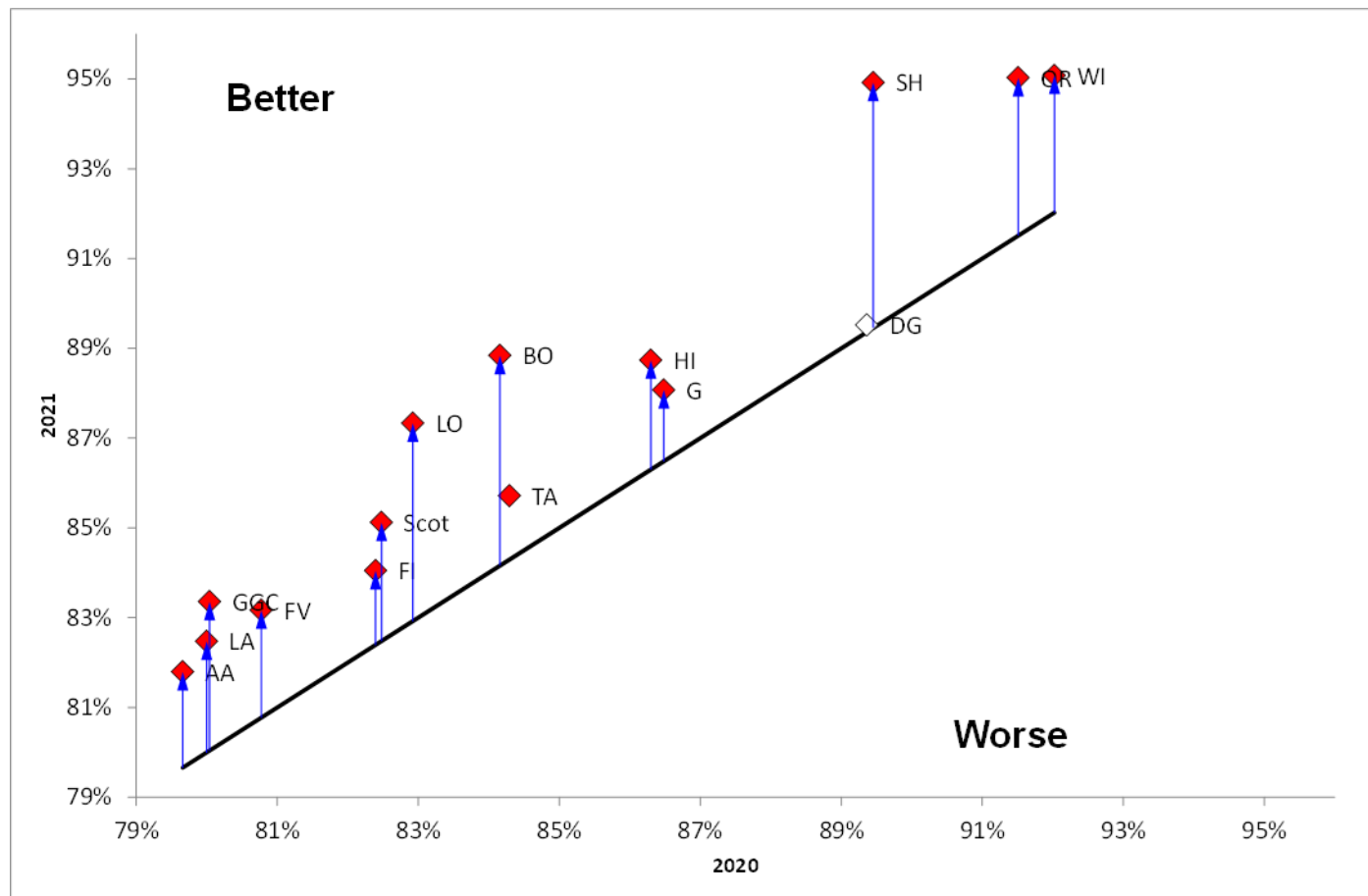
Note: Horizontal lines show figures for Scotland as a whole and bars are ranked by figures for type 2 diabetes

**Figure 21** 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 2020 to 2021.



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 2020 and 2021.

**Figure 22** 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 2020 to 2021.



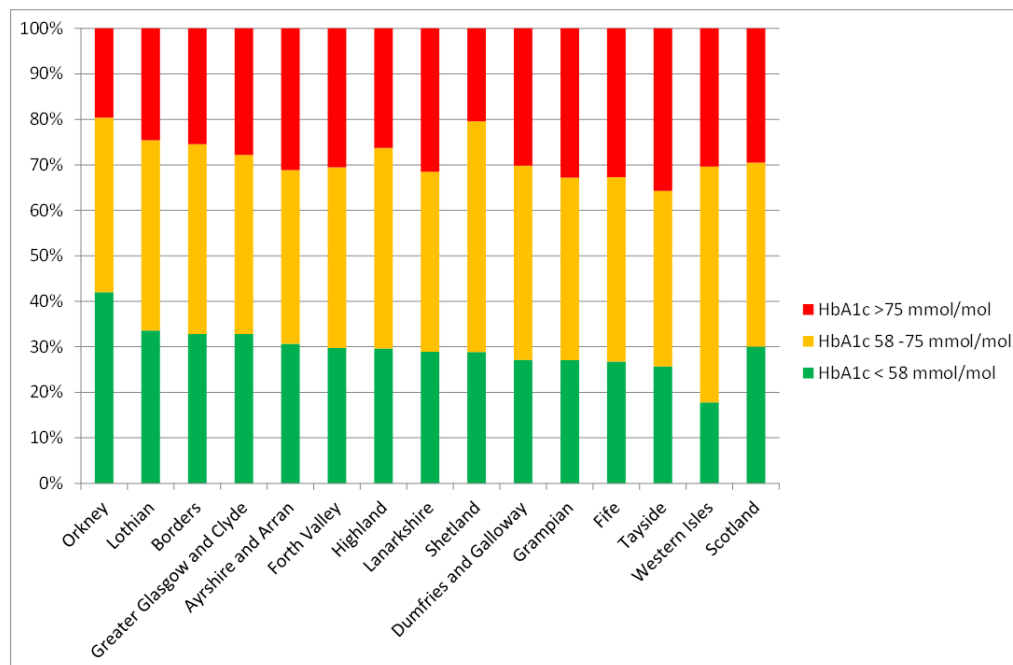
Note: Arrows showing the direction of change have been added for all boards with more than 1.5% change over that period. Points in red indicate statistically significant change. The diagonal line shows no change between 2020 and 2021.

**Table 50** Number and percentage of people with type 1 or type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months, by diabetes type and NHS board, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2021.

NHS board	Type 1 diabetes			Type 2 diabetes		
	Recorded within previous 15 months		Not recorded (n)	Recorded within previous 15 months		Not recorded (n)
	People (n)	%		People (n)	%	
Western Isles	214	93.0	16	1,372	95.1	71
Orkney	138	96.5	5	1,070	95.0	56
Shetland	142	94.0	9	990	94.9	53
Dumfries and Galloway	1,021	93.3	73	8,173	89.5	957
Borders	649	85.1	114	5,540	88.8	696
Highland	2,033	88.5	265	15,377	88.7	1,952
Grampian	3,268	86.3	520	24,340	88.1	3,297
Lothian	4,314	81.3	993	34,906	87.3	5,063
Tayside	1,952	81.0	457	18,825	85.7	3,137
Fife	1,948	81.1	453	17,873	84.0	3,392
Greater Glasgow and Clyde	6,038	85.9	992	50,953	83.4	10,173
Forth Valley	1,575	75.0	524	14,158	83.2	2,865
Lanarkshire	3,820	81.1	889	31,977	82.5	6,794
Ayrshire and Arran	2,021	80.6	485	19,260	81.8	4,286
<b>Scotland</b>	<b>29,133</b>	<b>83.4</b>	<b>5,795</b>	<b>244,814</b>	<b>85.1</b>	<b>42,792</b>



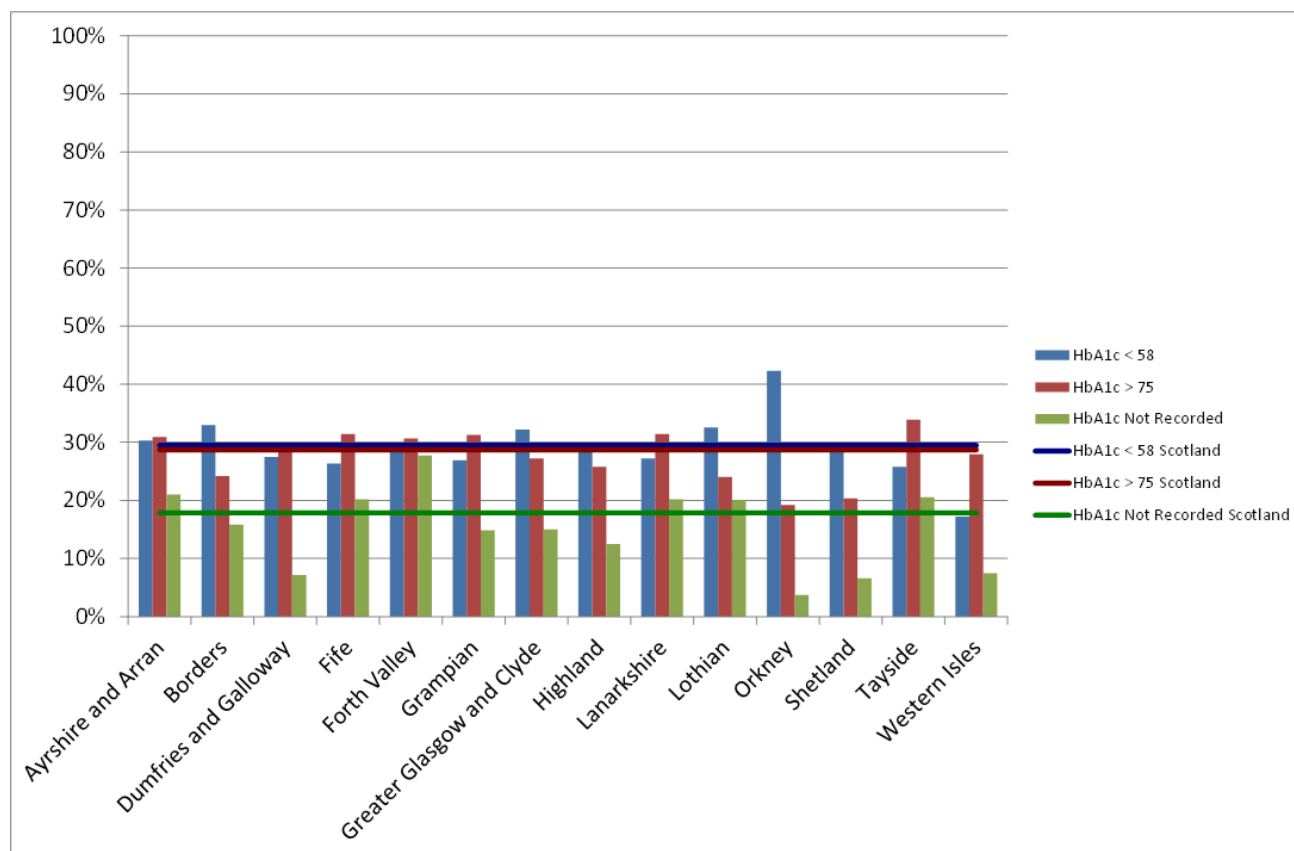
**Figure 23 Type 1 diabetes: Percentage of people of all ages with a recorded HbA<sub>1c</sub> in the previous 15 months, in each HbA<sub>1c</sub> category, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol and proportions with HbA<sub>1c</sub> not recorded, Scotland 2021.**



**Table 51 Type 1 diabetes: HbA<sub>1c</sub> category as a percentage of people of all ages, regardless of duration of diabetes, 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 58 mmol/mol, Scotland 2021.**

NHS board	HbA <sub>1c</sub> (mmol/mol)			Not recorded (%)	Eligible Population
	<58	58 -75	>75		
	%	%	%		
Orkney	42.0	38.4	19.6	3.5	143
Lothian	33.6	41.8	24.6	18.7	5,307
Borders	32.8	41.8	25.4	14.9	763
Greater Glasgow and Clyde	32.8	39.4	27.8	14.1	7,030
Ayrshire and Arran	30.6	38.2	31.2	19.4	2,506
Forth Valley	29.7	39.7	30.5	25.0	2,099
Highland	29.6	44.1	26.3	11.5	2,298
Lanarkshire	28.9	39.6	31.5	18.9	4,709
Shetland	28.9	50.7	20.4	6.0	151
Dumfries and Galloway	27.1	42.7	30.2	6.7	1,094
Grampian	27.1	40.2	32.8	13.7	3,788
Fife	26.7	40.6	32.7	18.9	2,401
Tayside	25.7	38.6	35.7	19.0	2,409
Western Isles	17.8	51.9	30.4	7.0	230
<b>Scotland</b>	<b>30.1</b>	<b>40.5</b>	<b>29.5</b>	<b>16.6</b>	<b>34,928</b>

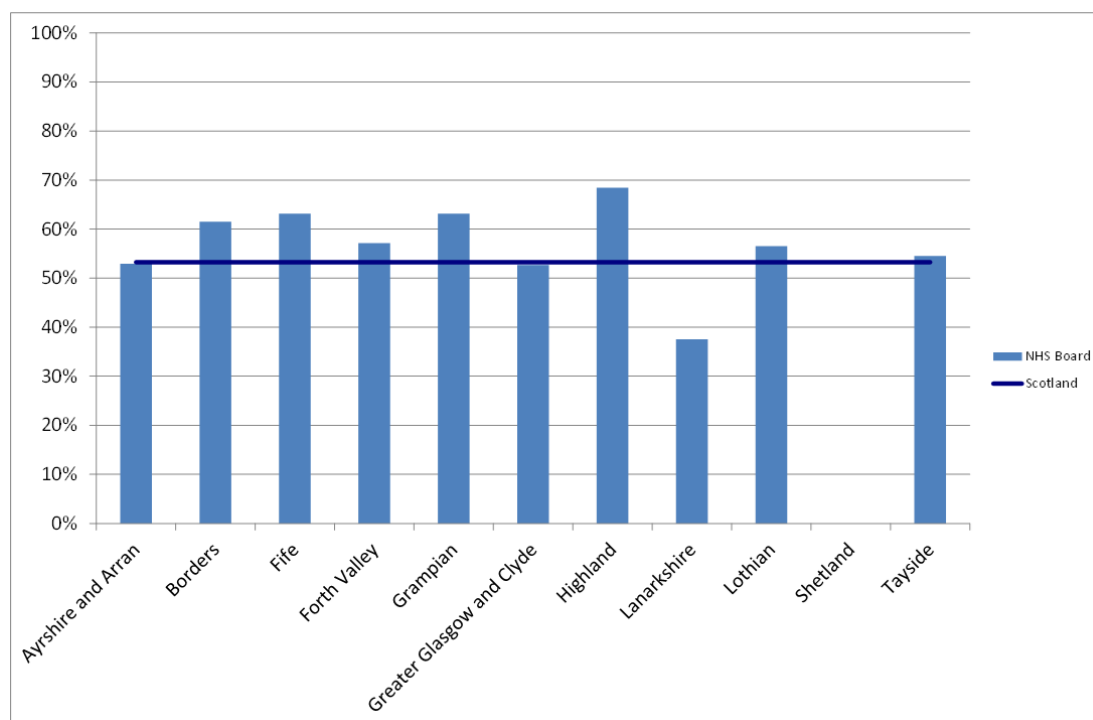
**Figure 24** Distribution of HbA<sub>1c</sub> category for people with type 1 diabetes over 18 years old regardless of duration of diabetes by NHS board, Scotland 2021.



**Table 52** Distribution of HbA<sub>1c</sub> category for people with type 1 diabetes over 18 years old with HbA<sub>1c</sub> recorded in previous 15 months, regardless of duration of diabetes by NHS board and proportion with HbA<sub>1c</sub> not recorded, Scotland 2021.

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)
Ayrshire and Arran	30.3	30.9	1,782	21.0	2,256
Borders	33.0	24.2	591	15.8	702
Dumfries and Galloway	27.5	28.6	907	7.2	977
Fife	26.3	31.5	1,729	20.2	2,166
Forth Valley	29.0	30.7	1,346	27.8	1,863
Grampian	26.9	31.3	2,906	14.8	3,412
Greater Glasgow and Clyde	32.2	27.2	5,424	15.0	6,383
Highland	29.3	25.8	1,820	12.5	2,080
Lanarkshire	27.2	31.4	3,353	20.2	4,200
Lothian	32.6	24.1	3,884	20.1	4,862
Orkney	42.3	19.2	130	3.7	135
Shetland	29.7	20.3	128	6.6	137
Tayside	25.8	33.9	1,746	20.6	2,198
Western Isles	17.2	28.0	186	7.5	201
<b>Scotland</b>	<b>29.5</b>	<b>28.7</b>	<b>25,932</b>	<b>17.9</b>	<b>31,572</b>

**Figure 25** Proportions of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 1 diabetes aged over 18 years old for people with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.



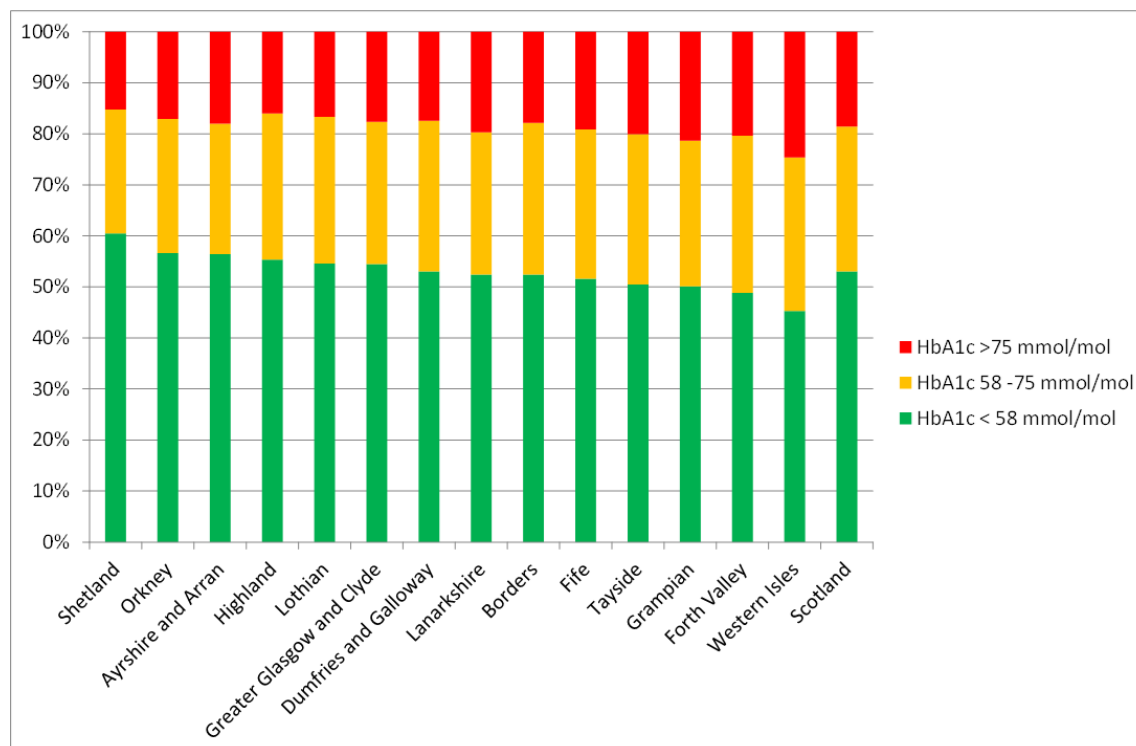
Note: Bars for boards with hidden data are not shown. HbA<sub>1c</sub> data were only available for approximately half of this group of people overall.

**Table 53** Proportions and numbers of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 1 diabetes aged over 18 years old for people with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 18+ (n)
	n	%	
Ayrshire and Arran	9	52.9	17
Borders	8	61.5	13
Dumfries and Galloway	*	*	12
Fife	12	63.2	19
Forth Valley	8	57.1	14
Grampian	24	63.2	38
Greater Glasgow and Clyde	39	52.7	74
Highland	13	68.4	19
Lanarkshire	15	37.5	40
Lothian	26	56.5	46
Orkney	*	*	*
Shetland	0	0.0	*
Tayside	12	54.5	22
Western Isles	*	*	*
<b>Scotland</b>	<b>172</b>	<b>53.3</b>	<b>323</b>

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

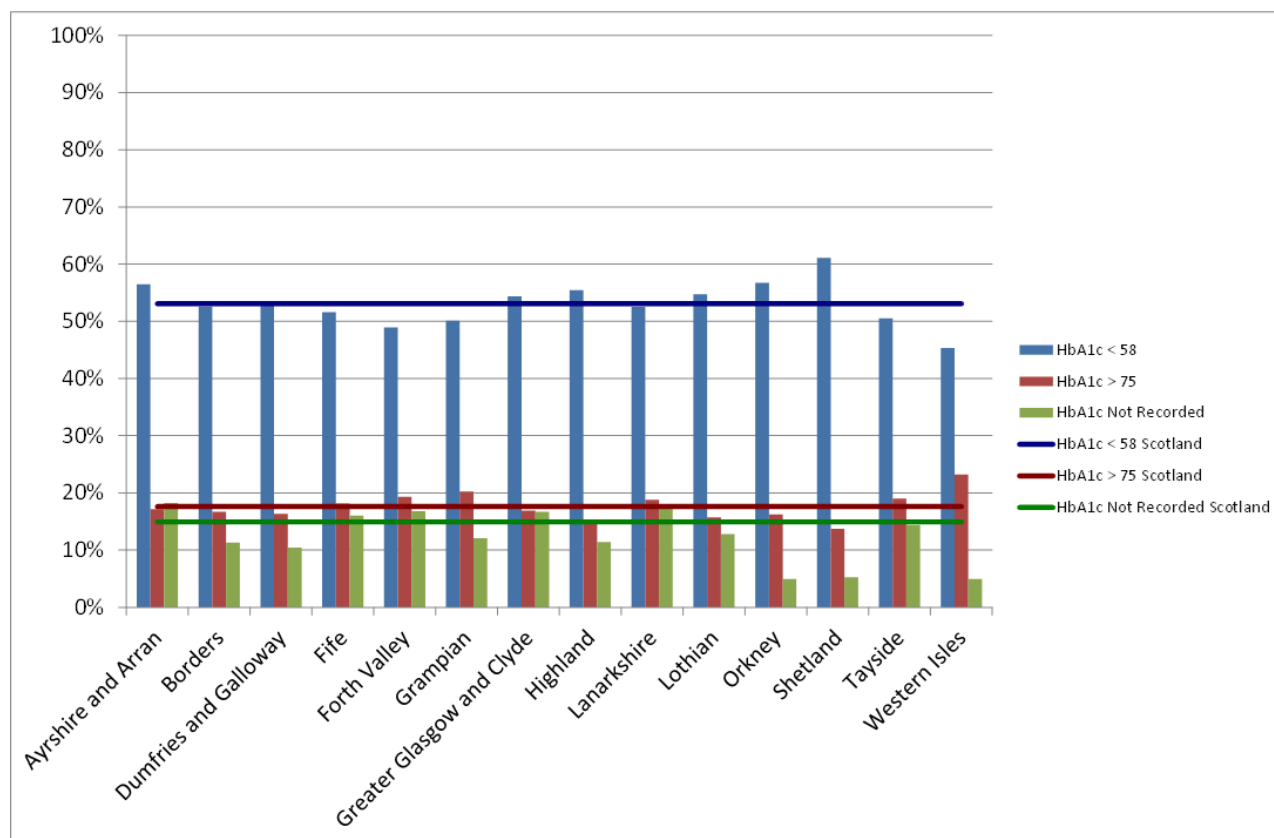
**Figure 26** Type 2 diabetes: Percentage of people of all ages with a recorded HbA<sub>1c</sub> in the previous 15 months, in each HbA<sub>1c</sub> category, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2021.



**Table 54** 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 58 mmol/mol, Scotland 2021.

NHS board	HbA <sub>1c</sub> (mmol/mol)			Not recorded (%)	Eligible Population
	<58	58 -75	>75		
	%	%	%		
Shetland	60.5	24.2	15.3	5.1	1,043
Orkney	56.6	26.3	17.1	5.0	1,126
Ayrshire and Arran	56.4	25.6	18.0	18.2	23,546
Highland	55.4	28.6	16.0	11.3	17,329
Lothian	54.6	28.7	16.6	12.7	39,969
Greater Glasgow and Clyde	54.5	27.9	17.7	16.6	61,126
Dumfries and Galloway	53.0	29.5	17.4	10.5	9,130
Lanarkshire	52.4	27.8	19.7	17.5	38,771
Borders	52.4	29.7	17.9	11.2	6,236
Fife	51.6	29.3	19.1	16.0	21,265
Tayside	50.5	29.5	20.1	14.3	21,962
Grampian	50.1	28.5	21.3	11.9	27,637
Forth Valley	48.8	30.8	20.4	16.8	17,023
Western Isles	45.3	30.1	24.6	4.9	1,443
<b>Scotland</b>	<b>53.0</b>	<b>28.4</b>	<b>18.6</b>	<b>14.9</b>	<b>287,606</b>

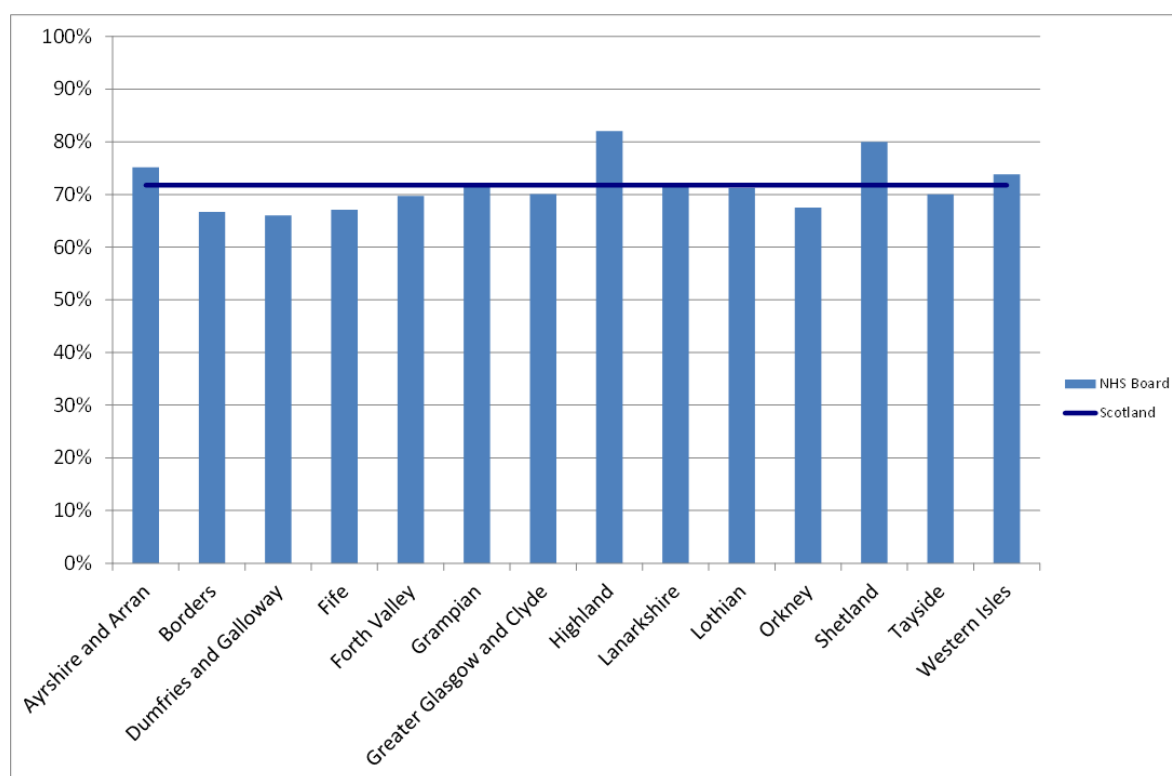
**Figure 27** Distribution of HbA<sub>1c</sub> category for people with type 2 and other diabetes aged over 18 years old by NHS board, Scotland 2021.



**Table 55** HbA<sub>1c</sub> category for people with type 2 and other diabetes aged over 18 years old by NHS board, Scotland 2021.

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 18+ (n)
Ayrshire and Arran	56.5	17.2	19,367	18.2	23,687
Borders	52.6	16.7	5,659	11.3	6,381
Dumfries and Galloway	53.3	16.3	8,312	10.4	9,280
Fife	51.6	18.1	18,046	16.0	21,486
Forth Valley	48.9	19.4	14,355	16.8	17,254
Grampian	50.1	20.2	24,610	12.1	27,982
Greater Glasgow and Clyde	54.4	16.9	51,789	16.7	62,176
Highland	55.5	15.0	15,752	11.4	17,775
Lanarkshire	52.6	18.8	32,622	17.5	39,521
Lothian	54.7	15.7	35,917	12.8	41,193
Orkney	56.8	16.2	1,085	4.9	1,141
Shetland	61.1	13.7	1,007	5.3	1,063
Tayside	50.5	19.0	19,154	14.4	22,372
Western Isles	45.3	23.2	1,383	4.9	1,455
<b>Scotland</b>	<b>53.1</b>	<b>17.6</b>	<b>249,058</b>	<b>14.9</b>	<b>292,766</b>

**Figure 28** Proportions of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 2 and other diabetes aged over 18 years old and with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.



Note: HbA<sub>1c</sub> data were only available for under half of this group of people overall.

**Table 56** Proportions and numbers of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 2 and other diabetes aged over 18 years old and with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 18+
	N	%	
Ayrshire and Arran	502	75.1	668
Borders	120	66.7	180
Dumfries and Galloway	212	66.0	321
Fife	359	67.1	535
Forth Valley	376	69.8	539
Grampian	647	71.8	901
Greater Glasgow and Clyde	1,273	70.1	1,816
Highland	635	82.0	774
Lanarkshire	925	72.2	1,282
Lothian	968	71.3	1,358
Orkney	27	67.5	40
Shetland	32	80.0	40
Tayside	360	70.0	514
Western Isles	48	73.8	65
<b>Scotland</b>	<b>6,484</b>	<b>71.8</b>	<b>9,033</b>

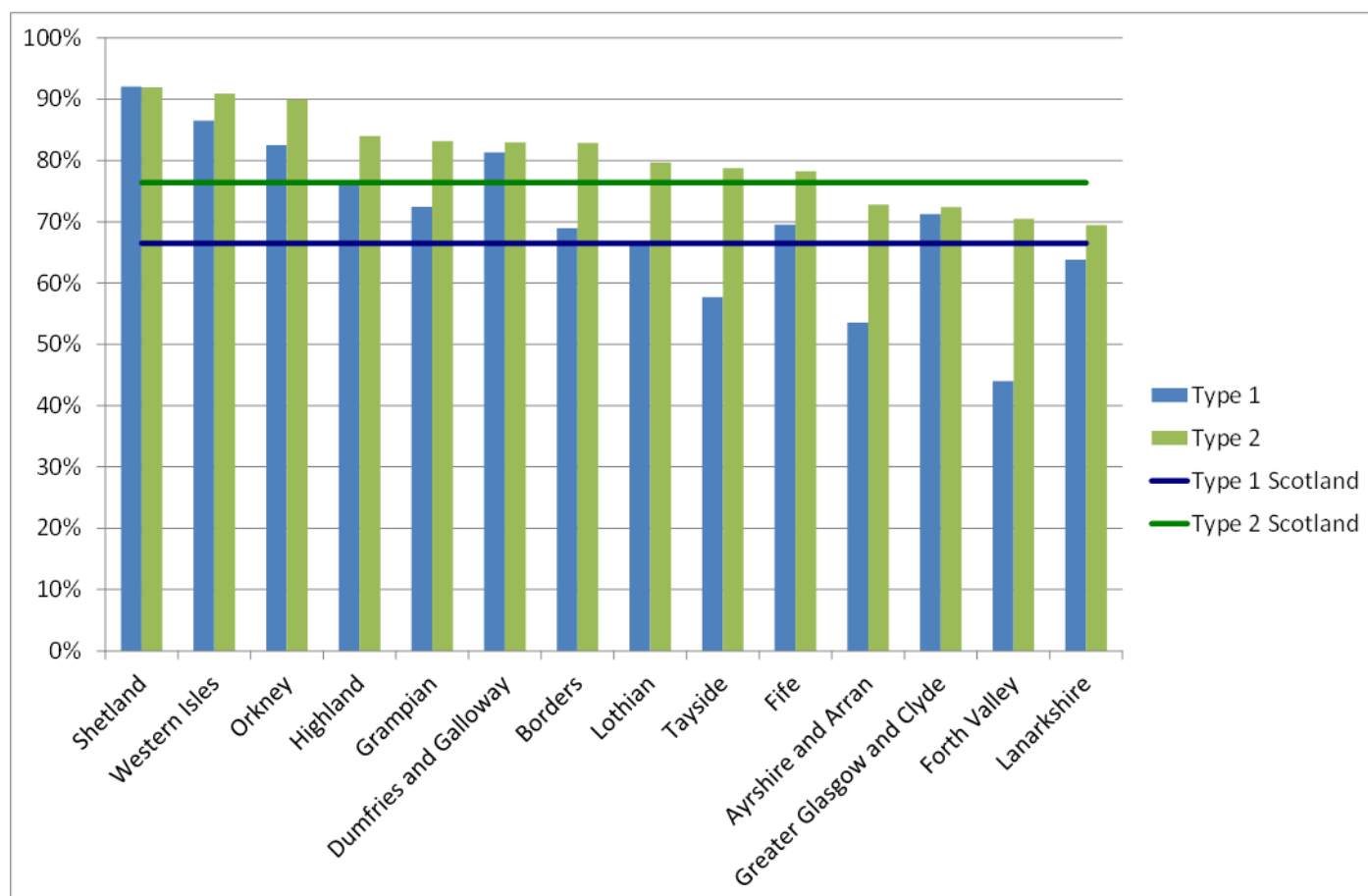
Note: HbA<sub>1c</sub> data were only available for under half of this group of people overall.

## Blood Pressure

### Blood Pressure Regional Detail

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

**Figure 29** 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 2021.



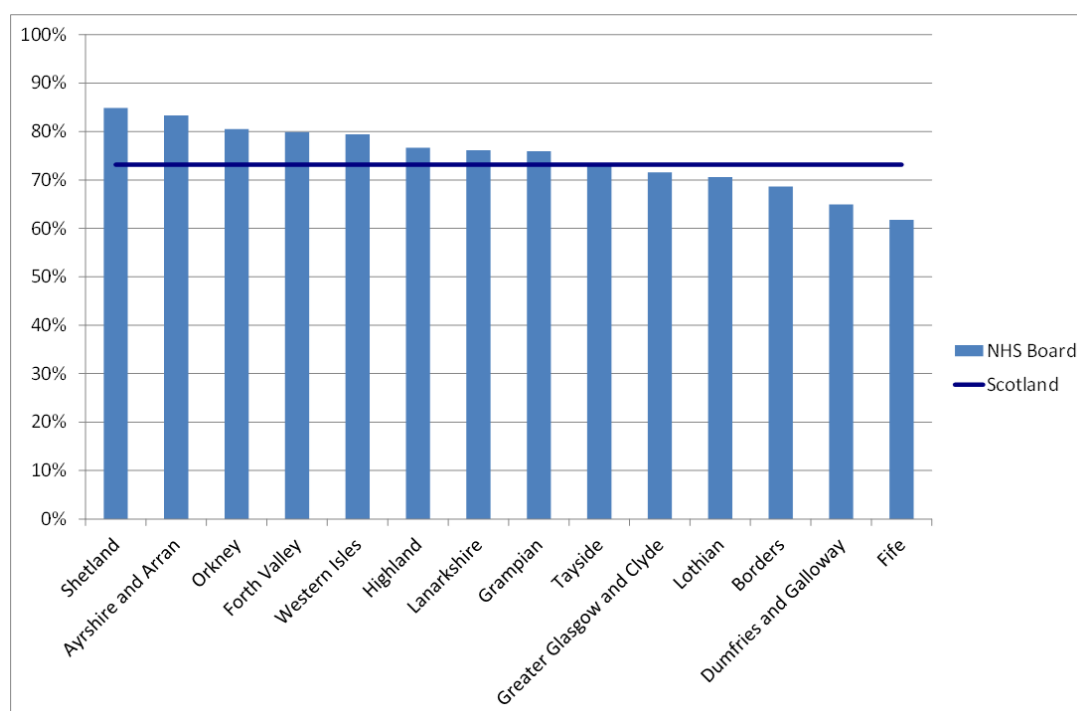
**Table 57** Number and percentage of people with type 1 and type 2 diabetes with a recording of BP in the previous 15 months, by NHS board and diabetes type, ranked by figures for type 2 diabetes, Scotland 2021.

NHS board	Recorded within previous 15 months			
	Type 1 diabetes		Type 2 diabetes	
	People (n)	%	People (n)	%
Shetland	139	92.1	959	91.9
Western Isles	199	86.5	1,312	90.9
Orkney	118	82.5	1,013	90.0
Highland	1,762	76.7	14,552	84.0
Grampian	2,744	72.4	22,988	83.2
Dumfries and Galloway	890	81.4	7,578	83.0
Borders	526	68.9	5,169	82.9
Lothian	3,507	66.1	31,838	79.7
Tayside	1,390	57.7	17,290	78.7
Fife	1,669	69.5	16,632	78.2
Ayrshire and Arran	1,343	53.6	17,148	72.8
Greater Glasgow and Clyde	5,008	71.2	44,257	72.4
Forth Valley	924	44.0	12,002	70.5
Lanarkshire	3,005	63.8	26,931	69.5
<b>Scotland</b>	<b>23,224</b>	<b>66.5</b>	<b>219,669</b>	<b>76.4</b>

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



**Figure 30 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 2021.**



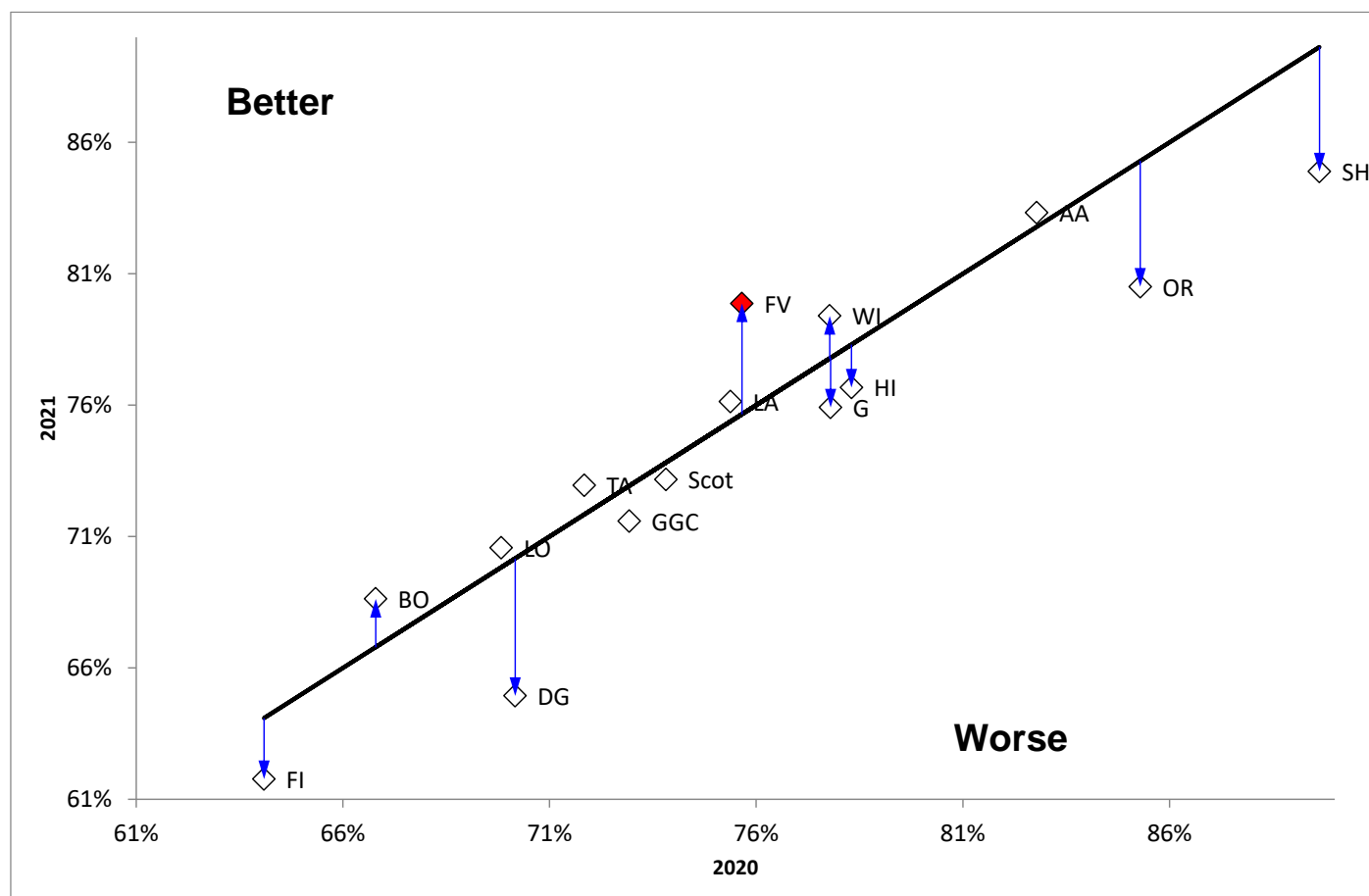
Note: Horizontal line indicates mean level for Scotland as a whole.

**Table 58 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 2021.**

NHS board	Systolic BP $\leq 140$		Systolic BP $>140$		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Shetland	118	84.9	21	15.1	139	12	7.9
Ayrshire and Arran	1,119	83.3	224	16.7	1,343	1,163	46.4
Orkney	95	80.5	23	19.5	118	25	17.5
Forth Valley	738	79.9	186	20.1	924	1,175	56.0
Western Isles	158	79.4	41	20.6	199	31	13.5
Highland	1,351	76.7	411	23.3	1,762	536	23.3
Lanarkshire	2,288	76.1	717	23.9	3,005	1,704	36.2
Grampian	2,083	75.9	661	24.1	2,744	1,044	27.6
Tayside	1,014	72.9	376	27.1	1,390	1,019	42.3
Greater Glasgow and Clyde	3,585	71.6	1,423	28.4	5,008	2,022	28.8
Lothian	2,475	70.6	1,032	29.4	3,507	1,800	33.9
Borders	361	68.6	165	31.4	526	237	31.1
Dumfries and Galloway	578	64.9	312	35.1	890	204	18.6
Fife	1,031	61.8	638	38.2	1,669	732	30.5
<b>Scotland</b>	<b>16,994</b>	<b>73.2</b>	<b>6,230</b>	<b>26.8</b>	<b>23,224</b>	<b>11,704</b>	<b>33.5</b>

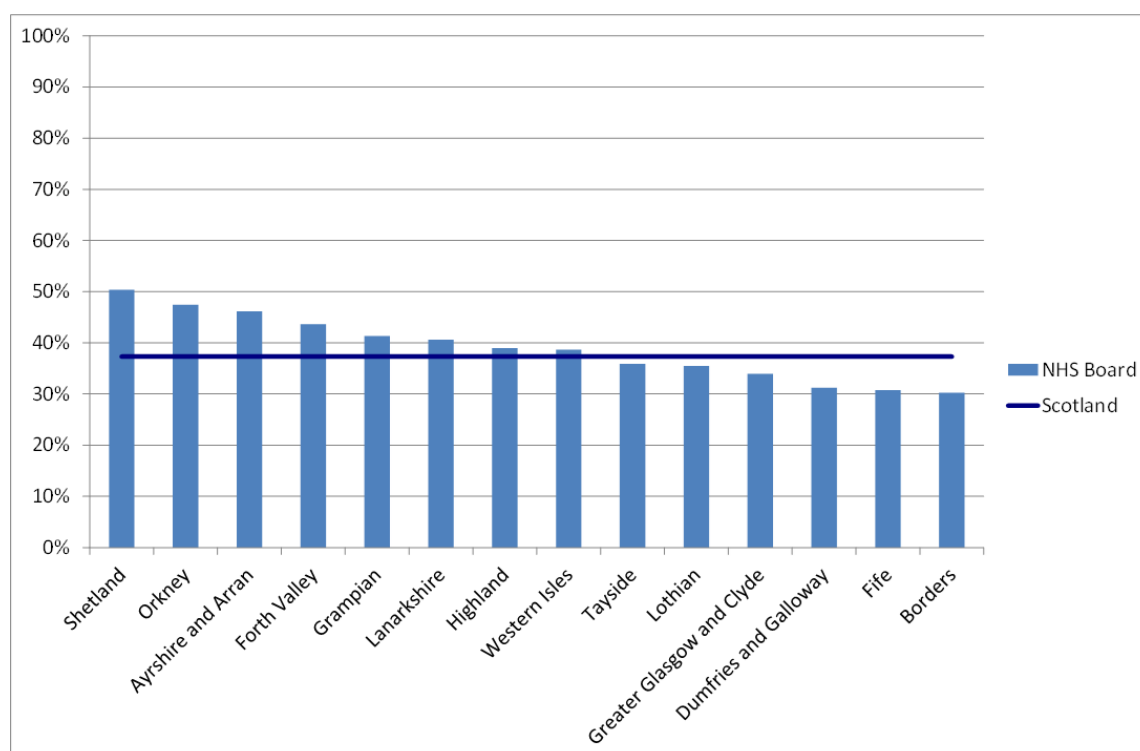
Note: Restricted to most recent value recorded in the previous 15 months – those with only older results are classed as missing (not recorded).

**Figure 31 Type 1 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2020 to 2021.**



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 2020 and 2021.

**Figure 32 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 2021.**



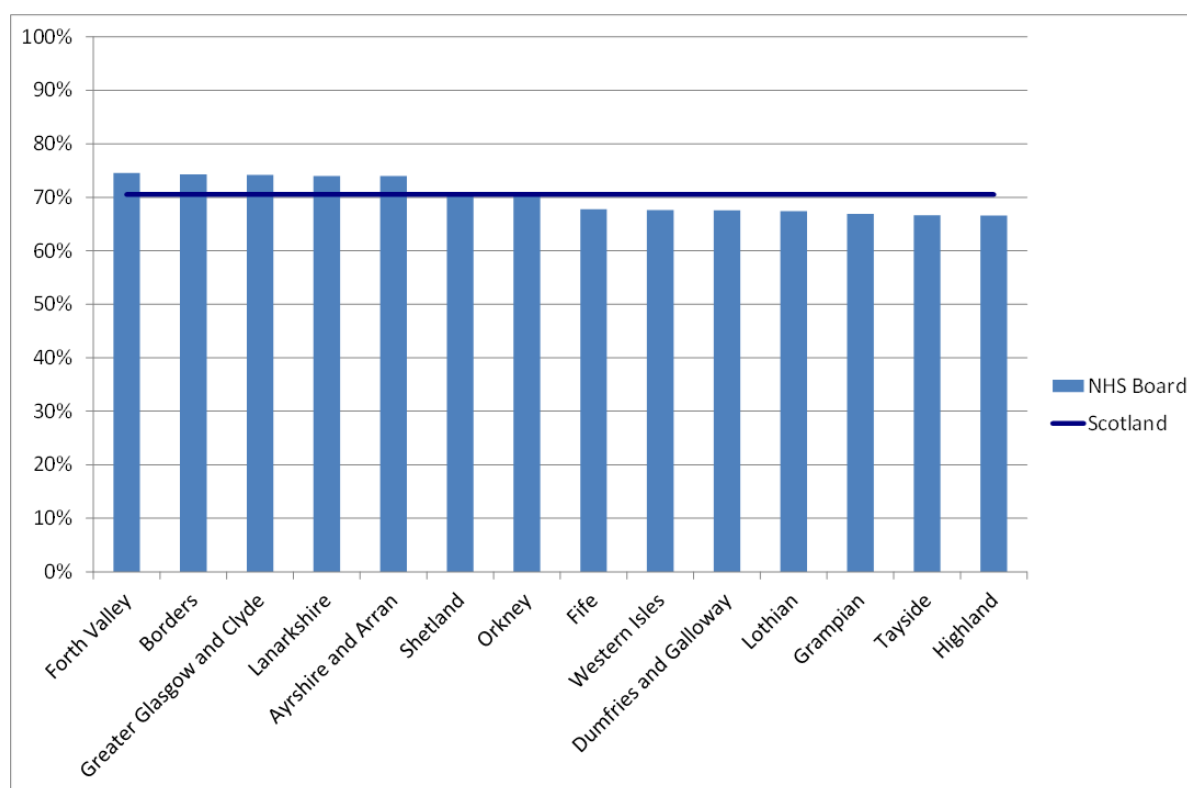
Note: Horizontal line indicates mean level for Scotland as a whole.

**Table 59 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 2021.**

NHS board	Met BP target		Did not meet BP target		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Shetland	70	50.4	69	49.6	139	12	7.9
Orkney	56	47.5	62	52.5	118	25	17.5
Ayrshire and Arran	620	46.2	723	53.8	1,343	1,163	46.4
Forth Valley	403	43.6	521	56.4	924	1,175	56.0
Grampian	1,134	41.3	1,610	58.7	2,744	1,044	27.6
Lanarkshire	1,221	40.6	1,784	59.4	3,005	1,704	36.2
Highland	687	39.0	1,075	61.0	1,762	536	23.3
Western Isles	77	38.7	122	61.3	199	31	13.5
Tayside	499	35.9	891	64.1	1,390	1,019	42.3
Lothian	1,245	35.5	2,262	64.5	3,507	1,800	33.9
Greater Glasgow and Clyde	1,702	34.0	3,306	66.0	5,008	2,022	28.8
Dumfries and Galloway	278	31.2	612	68.8	890	204	18.6
Fife	513	30.7	1,156	69.3	1,669	732	30.5
Borders	159	30.2	367	69.8	526	237	31.1
<b>Scotland</b>	<b>8,664</b>	<b>37.3</b>	<b>14,560</b>	<b>62.7</b>	<b>23,224</b>	<b>11,704</b>	<b>33.5</b>

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

**Figure 33 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 2021.**



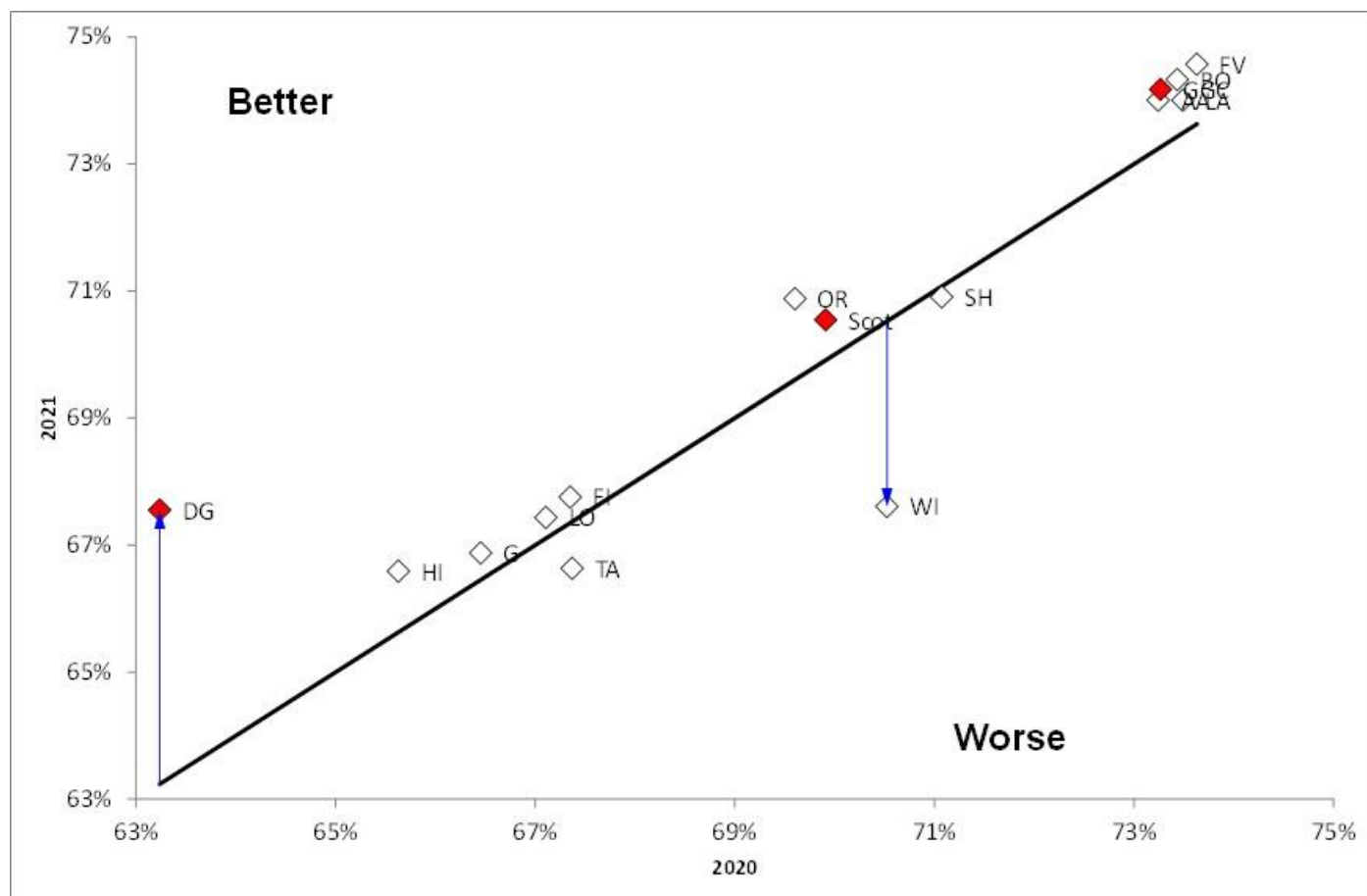
Note: Horizontal line indicates mean level for Scotland as a whole

**Table 60 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 2021.**

NHS board	BP $\leq 140$		BP $>140$		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Forth Valley	8,950	74.6	3,052	25.4	12,002	5,021	29.5
Borders	3,842	74.3	1,327	25.7	5,169	1,067	17.1
Greater Glasgow and Clyde	32,826	74.2	11,431	25.8	44,257	16,869	27.6
Lanarkshire	19,930	74.0	7,001	26.0	26,931	11,840	30.5
Ayrshire and Arran	12,690	74.0	4,458	26.0	17,148	6,398	27.2
Shetland	680	70.9	279	29.1	959	84	8.1
Orkney	718	70.9	295	29.1	1,013	113	10.0
Fife	11,269	67.8	5,363	32.2	16,632	4,633	21.8
Western Isles	887	67.6	425	32.4	1,312	131	9.1
Dumfries and Galloway	5,119	67.6	2,459	32.4	7,578	1,552	17.0
Lothian	21,470	67.4	10,368	32.6	31,838	8,131	20.3
Grampian	15,373	66.9	7,615	33.1	22,988	4,649	16.8
Tayside	11,521	66.6	5,769	33.4	17,290	4,672	21.3
Highland	9,690	66.6	4,862	33.4	14,552	2,777	16.0
<b>Scotland</b>	<b>154,965</b>	<b>70.5</b>	<b>64,704</b>	<b>29.5</b>	<b>219,669</b>	<b>67,937</b>	<b>23.6</b>

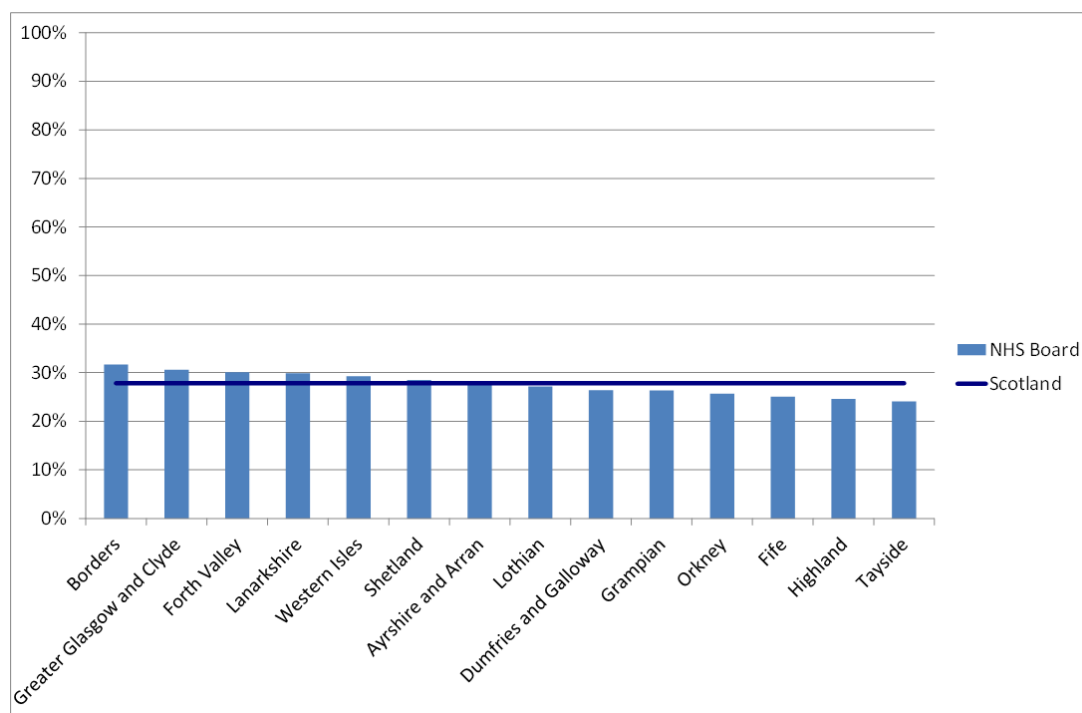
Note: Those with only results older than 15 months are classed as missing (not recorded).

**Figure 34 Type 2 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2020 to 2021.**



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 2020 and 2021.

**Figure 35 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 2021.**



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

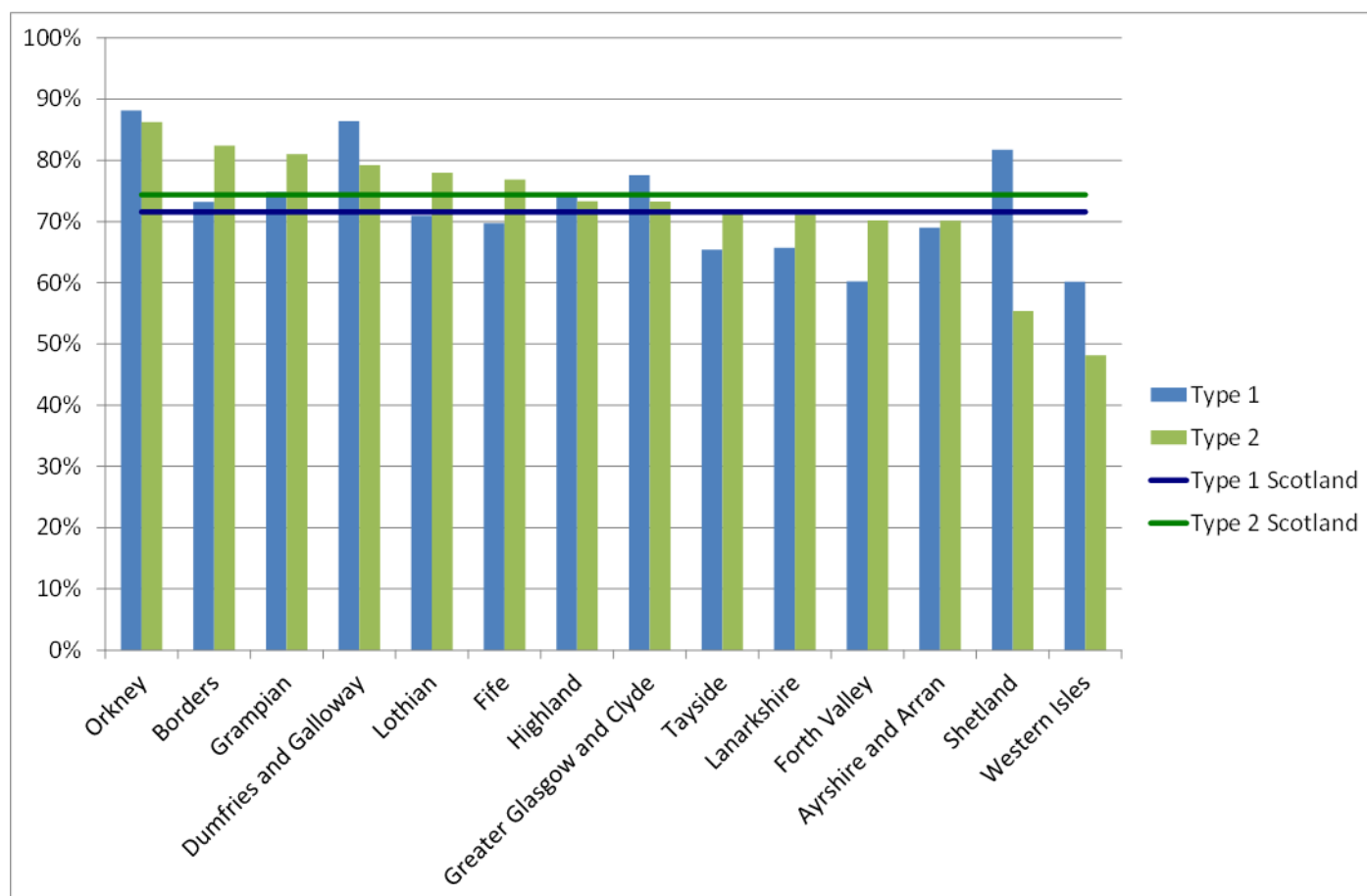
**Table 61 Type 2 diabetes: Number and percentage of people with most recent blood pressure in the last 15 months <130 mmHg (systolic) and ≤80 mmHg (diastolic), by NHS board, ranked by percentage of those who met the target, Scotland 2021.**

NHS board	Met BP target		Did not meet BP target		Total recorded (n)	Not recorded	
	n	%	n	%		n	%
Borders	1,636	31.7	3,533	68.3	5,169	1,067	17.1
Greater Glasgow and Clyde	13,547	30.6	30,710	69.4	44,257	16,869	27.6
Forth Valley	3,610	30.1	8,392	69.9	12,002	5,021	29.5
Lanarkshire	8,044	29.9	18,887	70.1	26,931	11,840	30.5
Western Isles	384	29.3	928	70.7	1,312	131	9.1
Shetland	273	28.5	686	71.5	959	84	8.1
Ayrshire and Arran	4,818	28.1	12,330	71.9	17,148	6,398	27.2
Lothian	8,652	27.2	23,186	72.8	31,838	8,131	20.3
Dumfries and Galloway	1,999	26.4	5,579	73.6	7,578	1,552	17.0
Grampian	6,047	26.3	16,941	73.7	22,988	4,649	16.8
Orkney	260	25.7	753	74.3	1,013	113	10.0
Fife	4,172	25.1	12,460	74.9	16,632	4,633	21.8
Highland	3,578	24.6	10,974	75.4	14,552	2,777	16.0
Tayside	4,166	24.1	13,124	75.9	17,290	4,672	21.3
<b>Scotland</b>	<b>61,186</b>	<b>27.9</b>	<b>158,483</b>	<b>72.1</b>	<b>219,669</b>	<b>67,937</b>	<b>23.6</b>

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

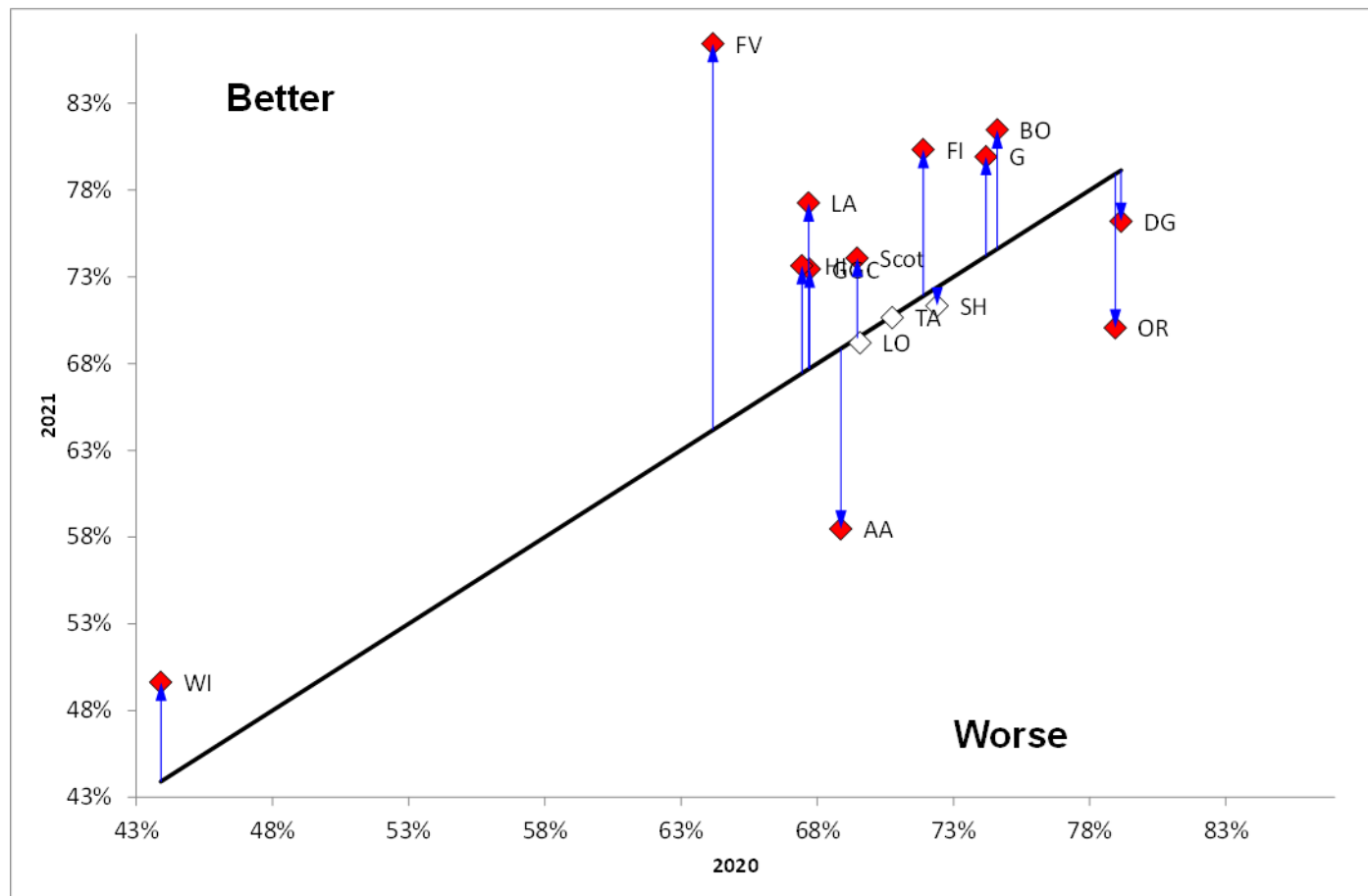
## Cholesterol

**Figure 36** 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 2021.



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 = 3,355, type 2 n = 156).

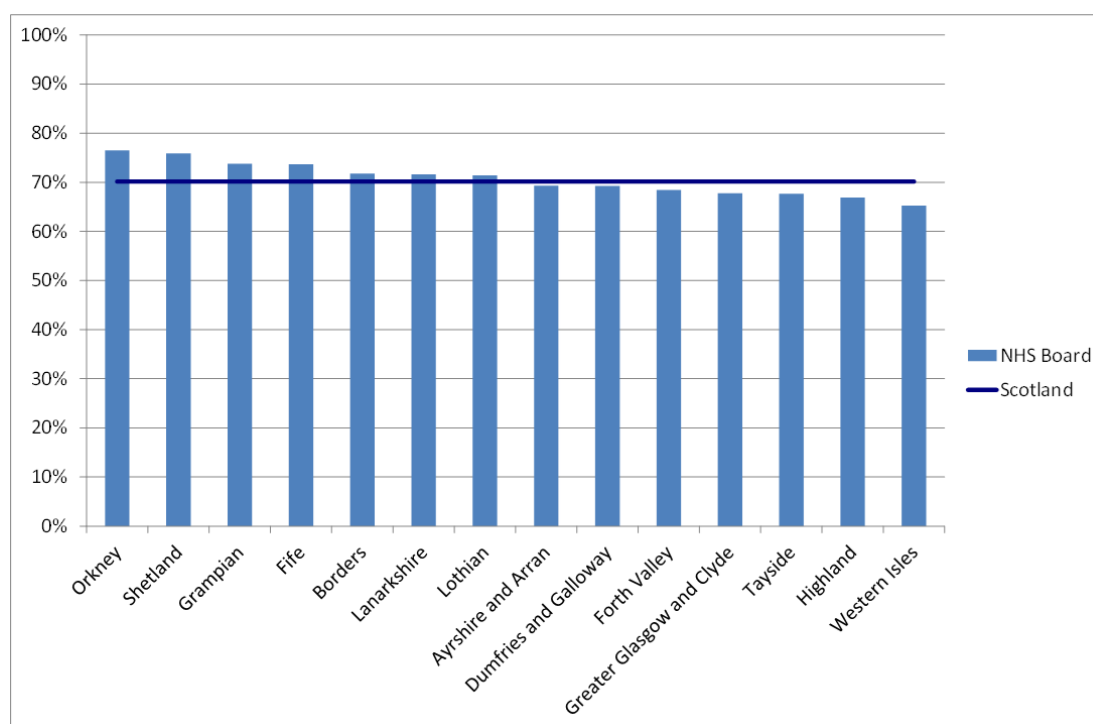
**Figure 37** Percentage of people with diabetes (type 1 and type 2 combined) with a record of cholesterol within the previous 15 months, Scotland, from 2020 to 2021.



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 2020 and 2021.



**Figure 38 Type 1 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 2021.**



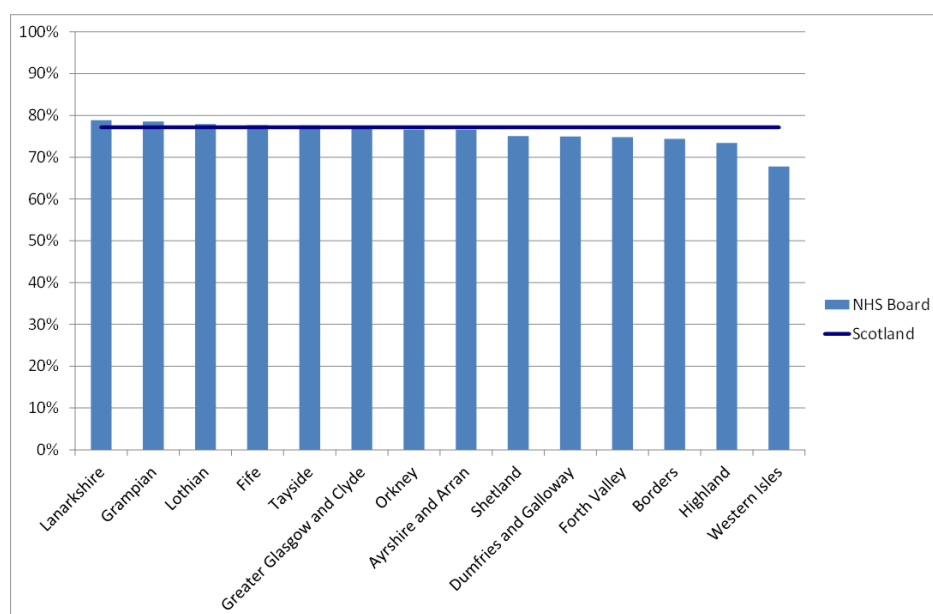
Note: Excludes children under 18 years of age and people whose date of birth has not been recorded (n = 3,355); horizontal line indicates mean level for Scotland as a whole.

**Table 62 Type 1 diabetes: Number and percentage of people with cholesterol  $\leq 5$  mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol  $\leq 5$  mmol/l, Scotland 2021.**

NHS board	Total cholesterol $\leq 5$ (%)	Total recorded	Not recorded (%)
Orkney	76.5	119	11.9
Shetland	75.9	112	18.2
Grampian	73.8	2,553	25.2
Fife	73.7	1,511	30.2
Borders	71.8	514	26.8
Lanarkshire	71.6	2,760	34.3
Lothian	71.4	3,451	29.1
Ayrshire and Arran	69.3	1,557	31.0
Dumfries and Galloway	69.3	843	13.6
Forth Valley	68.4	1,122	39.8
Greater Glasgow and Clyde	67.8	4,951	22.4
Tayside	67.6	1,437	34.6
Highland	66.9	1,552	25.4
Western Isles	65.3	121	39.8
<b>Scotland</b>	<b>70.2</b>	<b>22,603</b>	<b>28.4</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3,355).

**Figure 39 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 2021.**



Note: Excludes children under 18 years or who have no recorded date of birth (n = 156); Horizontal line indicates mean level for Scotland as a whole.

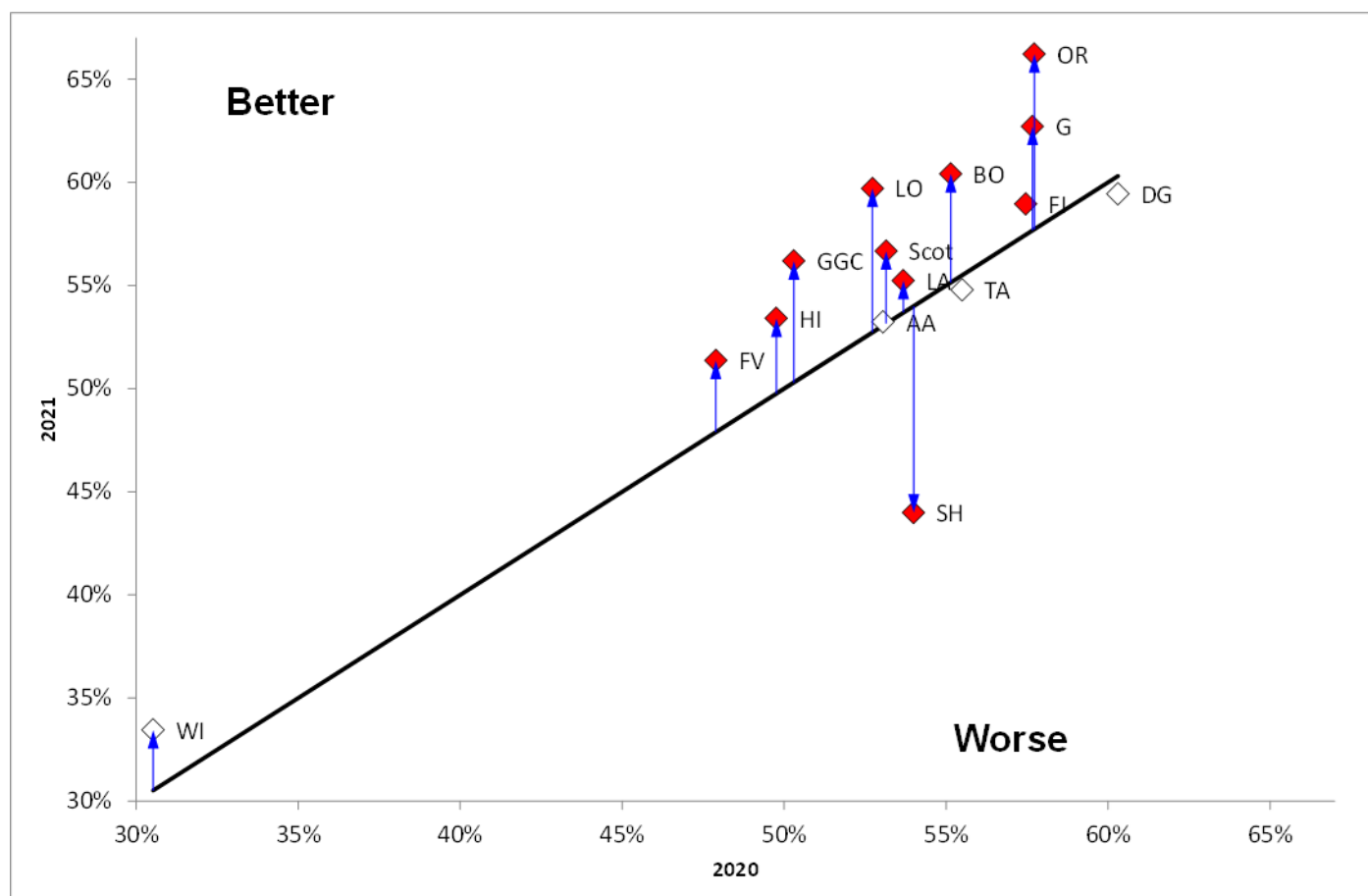
Total cholesterol was less than or equal to 5 mmol/l in 76.5% of people with a recorded result (Table 63 and Table 62).

**Table 63 Type 2 diabetes: Number and percentage of people with cholesterol  $\leq 5$  mmol/l, by NHS board (denominator those with recording of cholesterol within the previous 15 months), ranked by percentage of people with cholesterol  $\leq 5$  mmol/l, Scotland 2021.**

NHS board	Total cholesterol $\leq 5$ (%)	Total recorded (n)	Not recorded (%)
Lanarkshire	78.9	27,547	28.8
Grampian	78.5	22,388	19.0
Lothian	77.9	31,165	22.0
Fife	77.7	16,336	23.1
Tayside	77.6	15,796	28.1
Greater Glasgow and Clyde	77.2	44,750	26.8
Orkney	76.6	971	13.8
Ayrshire and Arran	76.6	16,517	29.8
Shetland	75.1	578	44.6
Dumfries and Galloway	75.0	7,230	20.8
Forth Valley	74.8	11,944	29.8
Borders	74.4	5,135	17.6
Highland	73.4	12,698	26.7
Western Isles	67.8	695	51.8
<b>Scotland</b>	<b>77.2</b>	<b>213,750</b>	<b>25.6</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 156).

**Figure 40** Percentage of people with diabetes (type 1 and type 2 combined) with cholesterol  $\leq 5$  mmol/l within the previous 15 months, Scotland, from 2020 to 2021.



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 2020 and 2021.

## Serum Creatinine Regional Detail

**Table 64** 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 2021.

NHS board	Serum creatinine recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	People (n)	%	People (n)	%	
Orkney	136	96.5	1,076	95.6	1,212
Western Isles	199	90.0	1,374	95.2	1,573
Shetland	129	87.2	989	94.8	1,118
Borders	633	85.7	5,785	92.8	6,418
Dumfries and Galloway	950	90.7	8,362	91.6	9,312
Grampian	3,077	84.1	25,216	91.2	28,293
Lothian	4,154	81.0	36,037	90.2	40,191
Highland	1,850	83.3	15,557	89.8	17,407
Tayside	1,936	82.9	19,478	88.7	21,414
Fife	1,911	82.7	18,668	87.8	20,579
Greater Glasgow and Clyde	5,809	85.8	53,447	87.5	59,256
Lanarkshire	3,706	82.3	33,646	86.9	37,352
Ayrshire and Arran	1,988	82.2	20,451	86.9	22,439
Forth Valley	1,547	77.1	14,735	86.6	16,282
<b>Scotland</b>	<b>28,025</b>	<b>83.3</b>	<b>254,821</b>	<b>88.6</b>	<b>282,846</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103).

## Regional Albuminuria

**Table 65** 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 2021.

NHS board	Urinary albumin recorded within previous 15 months				
	Type 1 diabetes		Type 2 diabetes		Total (n)
	People (n)	%	People (n)	%	
Orkney	97	68.8	827	73.4	924
Shetland	111	75.0	713	68.4	824
Western Isles	110	49.8	938	65.0	1,048
Grampian	2,108	57.6	17,591	63.7	19,699
Tayside	1,155	49.5	13,710	62.4	14,865
Lothian	3,020	58.9	23,725	59.4	26,745
Dumfries and Galloway	768	73.4	5,414	59.3	6,182
Highland	1,252	56.4	9,907	57.2	11,159
Fife	1,226	53.1	11,661	54.9	12,887
Greater Glasgow and Clyde	4,100	60.6	30,926	50.6	35,026
Lanarkshire	2,112	46.9	18,479	47.7	20,591
Forth Valley	734	36.6	8,101	47.6	8,835
Ayrshire and Arran	608	25.1	8,696	36.9	9,304
Borders	242	32.7	1,000	16.0	1,242
<b>Scotland</b>	<b>17,643</b>	<b>52.4</b>	<b>151,688</b>	<b>52.8</b>	<b>169,331</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103). In some cases, urinary albumin was estimated from albumin/creatinine ratio (ACR).

## Regional eGFR

**Table 66** 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 2021.

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	129	95.6	1,076	95.6	1,205
Western Isles	182	90.5	1,374	95.2	1,556
Shetland	125	91.2	989	94.8	1,114
Dumfries and Galloway	916	93.9	8,359	91.6	9,275
Grampian	2,942	86.2	25,195	91.2	28,137
Lothian	3,950	81.2	36,012	90.2	39,962
Tayside	1,788	81.3	19,469	88.7	21,257
Greater Glasgow and Clyde	5,515	86.4	53,429	87.4	58,944
Lanarkshire	3,463	82.5	33,641	86.9	37,104
Fife	1,228	56.7	18,018	84.8	19,246
Borders	507	72.2	5,258	84.4	5,765
Forth Valley	1,136	61.0	13,992	82.2	15,128
Ayrshire and Arran	1,511	67.0	19,155	81.4	20,666
Highland	1,021	49.1	7,835	45.2	8,856
<b>Scotland</b>	<b>24,413</b>	<b>77.3</b>	<b>243,802</b>	<b>84.8</b>	<b>268,215</b>

## BMI Recording, Proportions in Categories and Weight Loss

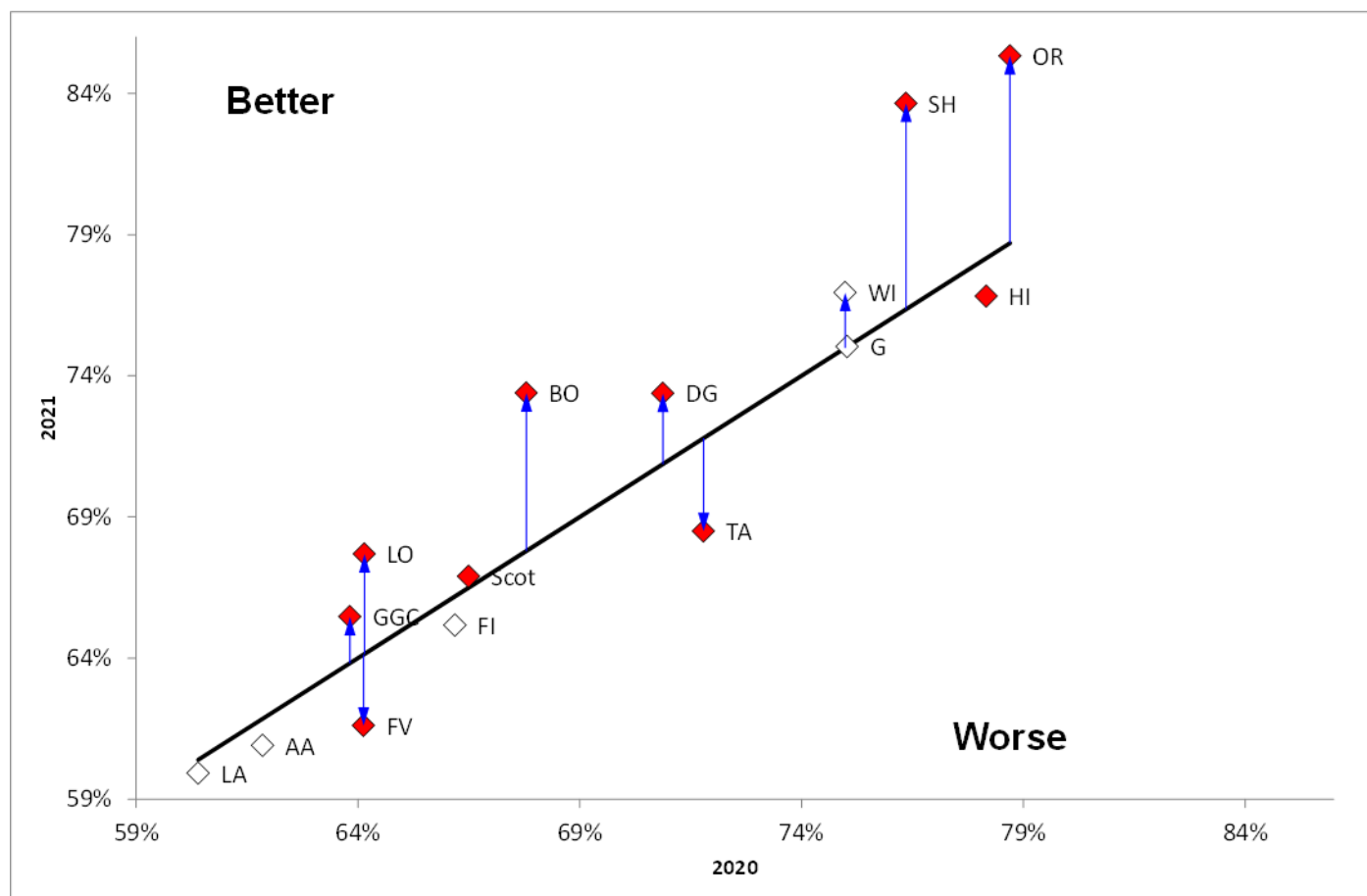
### Body Mass Index Regional Detail

**Table 67** 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 2021.

NHS board	BMI recorded (%)		Total recorded (n)	Total not recorded (n)
	Type 1 diabetes	Type 2 diabetes		
Orkney	84.4	85.4	1,076	185
Shetland	91.2	82.6	987	193
Highland	74.0	77.2	14,904	4,498
Western Isles	78.1	76.8	1,265	379
Grampian	68.6	75.8	23,295	7,749
Borders	64.8	74.4	5,089	1,845
Dumfries and Galloway	82.2	72.4	7,412	2,689
Tayside	53.1	70.0	16,548	7,610
Lothian	63.4	68.2	30,332	14,476
Fife	64.0	65.3	15,262	8,158
Greater Glasgow and Clyde	69.9	65.0	44,182	23,303
Forth Valley	38.4	64.2	11,635	7,249
Ayrshire and Arran	43.8	62.5	15,714	10,085
Lanarkshire	56.3	60.3	25,710	17,193
<b>Scotland</b>	<b>62.4</b>	<b>67.4</b>	<b>213,411</b>	<b>105,612</b>

Note: Excludes people under 18 years of age and people whose date of birth has not been recorded (type 1 n = 3,355, type 2 n = 156)

**Figure 41** Proportion of people recorded as having type 1 or type 2 diabetes (combined) who had a record of BMI, Scotland, from 2020 to 2021.



Note: Arrows showing the direction of change have been added for all boards with more than 1.5% change between 2020 and 2021. Points in red indicate statistically significant change. The diagonal line shows no change between 2020 and 2021.



**Table 68 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 2021.**

NHS board	BMI (kg/m <sup>2</sup> , %)						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		
Western Isles	*	37.6	35.0	17.2	*	*	157	44
Shetland	0.0	36.0	34.4	17.6	*	*	125	12
Greater Glasgow and Clyde	2.2	32.6	37.0	18.4	6.5	3.2	4,464	1,919
Tayside	2.0	33.6	34.5	20.1	6.6	3.3	1,168	1,030
Forth Valley	1.8	33.0	36.5	18.3	7.0	3.5	716	1,147
Grampian	1.4	31.0	38.0	19.1	6.9	3.6	2,341	1,071
Lothian	2.1	34.1	36.5	17.1	6.4	3.8	3,082	1,782
Highland	1.4	30.5	36.8	20.7	6.7	3.9	1,539	541
Lanarkshire	2.2	30.2	36.2	19.9	7.5	4.0	2,366	1,834
Ayrshire and Arran	3.1	31.4	32.9	19.8	8.3	4.5	988	1,268
Dumfries and Galloway	1.9	31.5	33.5	20.2	8.2	4.6	802	174
Borders	1.3	29.7	36.9	18.5	8.8	4.8	455	247
Fife	1.6	28.4	36.9	21.4	6.8	4.9	1,387	779
Orkney	0.0	24.6	39.5	18.4	11.4	6.1	114	21
Scotland	1.9	31.8	36.4	19.1	7.0	3.8	19,704	11,869

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Excludes people under 18 years of age and people whose date of birth has not been recorded (n = 3,355).

Of people with type 1 or type 2 diabetes and a record of BMI (Table 68 and Table 69), 31.5% were overweight (BMI 25-29.9 $\text{kg/m}^2$ ) and 53.9% were obese (BMI 30 $\text{kg/m}^2$  or over).

Of people with type 1 diabetes and a record of BMI 36.4% were overweight (BMI 25-29.9 $\text{kg/m}^2$ ) and 29.9% were obese (BMI 30 $\text{kg/m}^2$  or over).

**Table 69 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 2021.**

NHS board	BMI (kg/m <sup>2</sup> , %)						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	13.6	32.4	28.2	14.6	10.7	39,718	21,384
Borders	0.5	12.8	30.8	29.3	15.6	11.0	4,634	1,598
Tayside	0.3	11.9	31.2	29.5	16.0	11.1	15,380	6,580
Grampian	0.5	12.0	31.3	29.4	15.7	11.1	20,954	6,678
Lothian	0.6	13.2	31.7	28.3	15.0	11.2	27,250	12,694
Highland	0.4	11.9	31.1	29.9	15.2	11.5	13,365	3,957
Ayrshire and Arran	0.6	11.8	30.1	29.5	16.3	11.6	14,726	8,817
Dumfries and Galloway	0.6	11.2	30.3	30.1	15.7	12.3	6,610	2,515
Lanarkshire	0.6	11.4	29.9	29.5	16.2	12.3	23,344	15,359
Western Isles	*	*	28.6	30.9	16.8	12.8	1,108	335
Forth Valley	0.3	10.7	30.0	29.2	17.0	12.8	10,919	6,102
Orkney	0.0	10.2	30.9	28.9	16.9	13.1	962	164
Fife	0.4	11.0	29.2	29.3	16.5	13.5	13,875	7,379
Shetland	0.7	7.5	27.5	30.6	18.7	15.0	862	181
Scotland	0.5	12.2	31.0	29.1	15.6	11.6	193,707	93,743

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. Excludes children under 18 years of age or who have no recorded date of birth (n = 156).

Of people with type 2 diabetes and a record of BMI (Table 69), 31.0% were overweight (BMI 25-29.9 $\text{kg/m}^2$ ) and 56.3% were obese (BMI 30 $\text{kg/m}^2$  or over).

## Significant Weight Loss

Percentage of people of 18 years of age and over with diabetes with a BMI  $\geq 30$  kg/m<sup>2</sup> who have lost  $\geq 5\%$  body weight in the last year - presented in defined age ranges (detailed description below).

### Methodology

Included population = people with diabetes aged 18 years of age and over who had a BMI  $\geq 30$  kg/m<sup>2</sup> 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 (+/- 90 days) are included.

Numerator = number of people with diabetes aged 18 years of age and over by type of diabetes whose latest weight shows a  $\geq 5\%$  reduction since their weight 9-15 months ago.

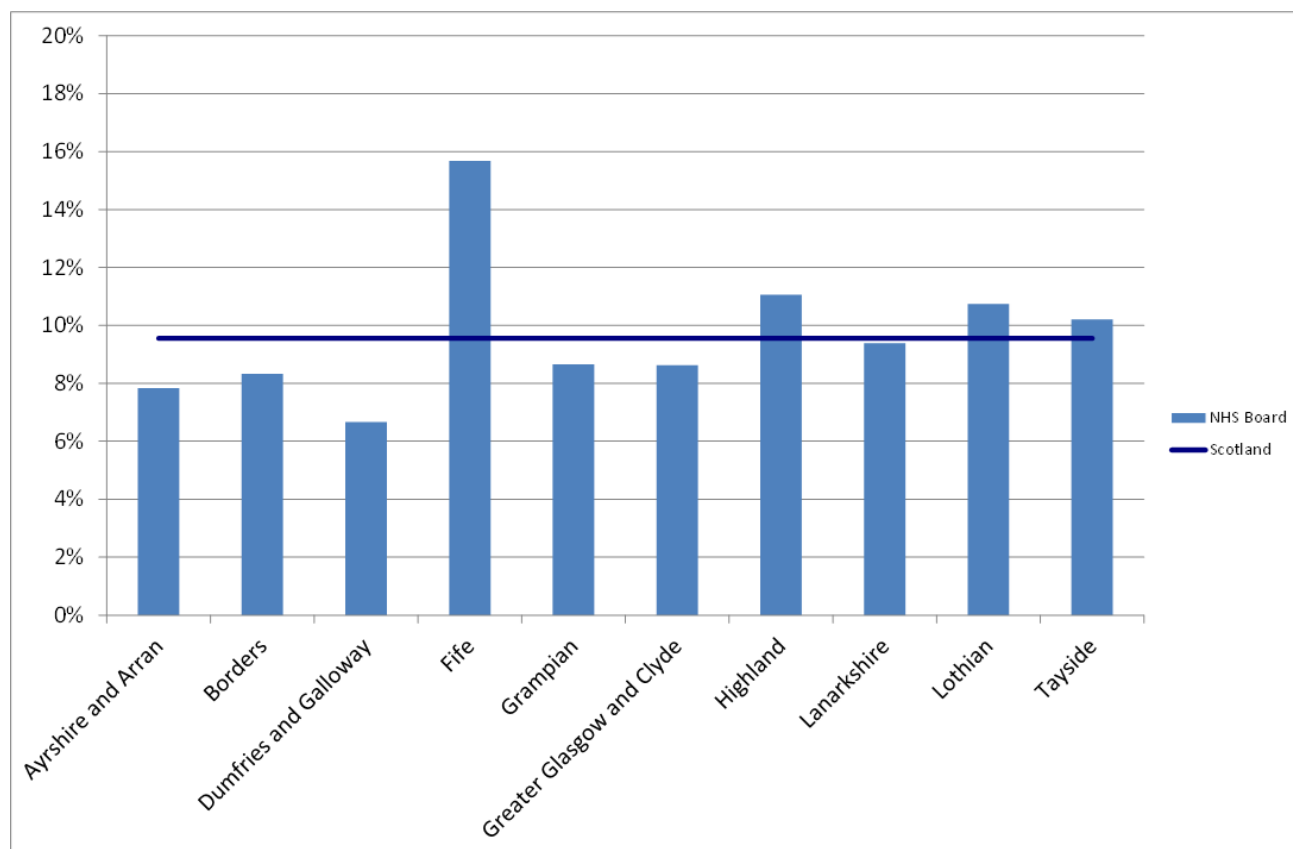
Denominator = the total number of people with diabetes aged 18 years of age and over by type of diabetes who meet the required inclusion criteria (see above).

### 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 +/- 90 days (3 months).
- Patient meets the criteria if Weight "now"  $\leq$  (Weight "one year ago" - 5%).
- Only if both values can be determined will the calculation take place.

**Figure 42 Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 1 aged 18+ years with BMI recorded by NHS board, Scotland 2021.**



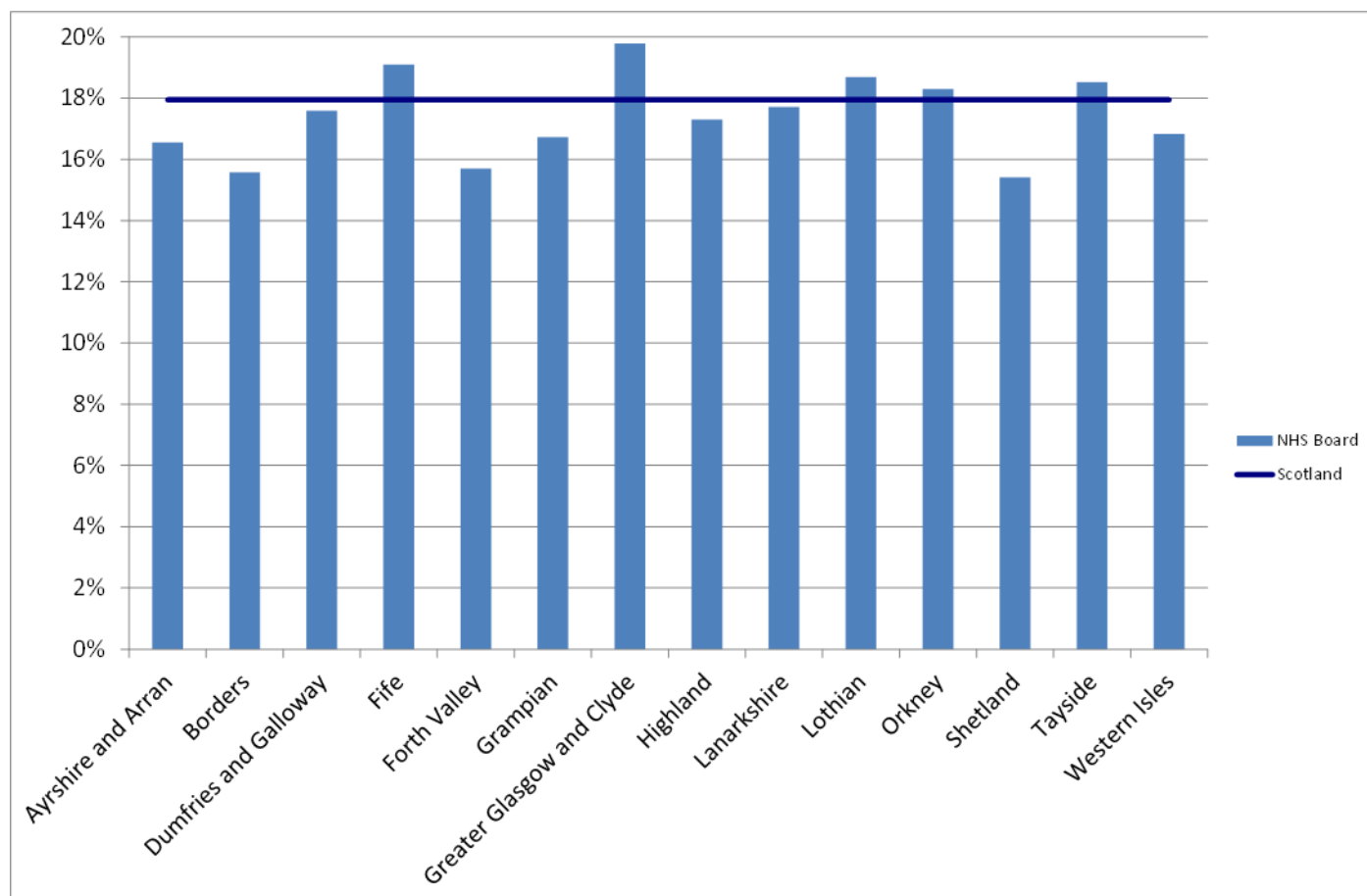
Note: Bars for boards with hidden data are not shown.

**Table 70 Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 1 aged 18+ years with BMI recorded by NHS board, Scotland 2021.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	8	7.8	102
Borders	5	8.3	60
Dumfries and Galloway	7	6.7	105
Fife	16	15.7	102
Forth Valley	*	*	56
Grampian	20	8.7	231
Greater Glasgow and Clyde	34	8.6	394
Highland	26	11.1	235
Lanarkshire	20	9.4	213
Lothian	26	10.7	242
Orkney	*	*	21
Shetland	*	*	17
Tayside	10	10.2	98
Western Isles	*	*	18
<b>Scotland</b>	<b>181</b>	<b>9.6</b>	<b>1,894</b>

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

**Figure 43** Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 2 and other aged 18+ years with BMI recorded by NHS board, Scotland 2021.

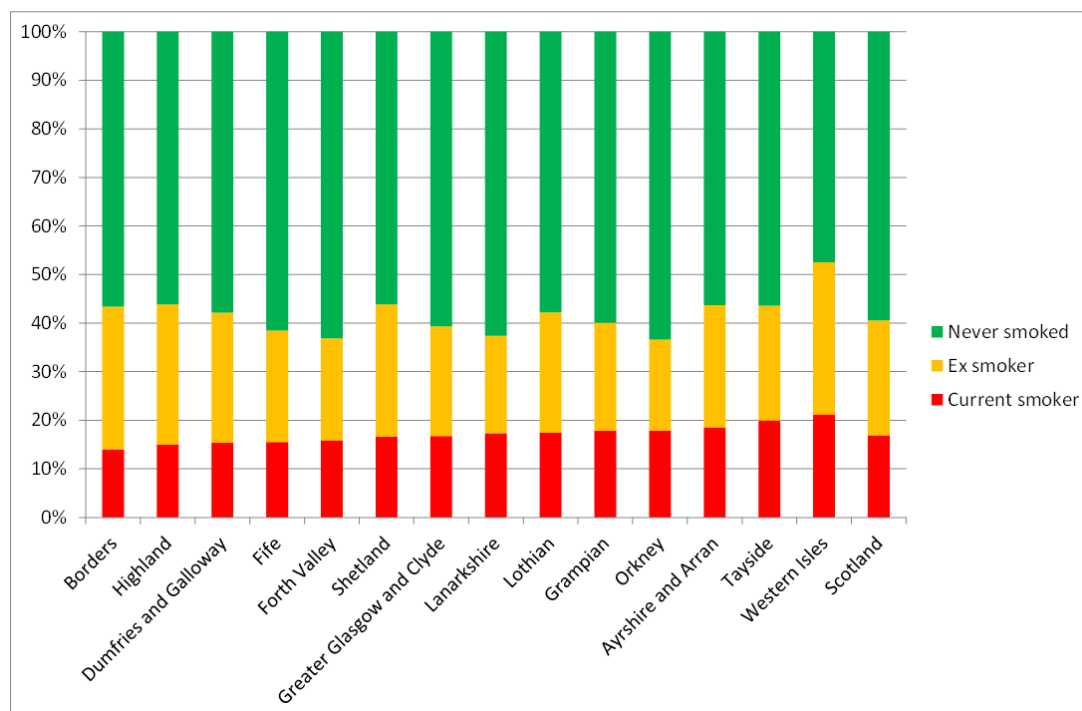


**Table 71** Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 2 and other aged 18+ years with BMI recorded by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	431	16.6	2,604
Borders	149	15.6	956
Dumfries and Galloway	273	17.6	1,552
Fife	540	19.1	2,827
Forth Valley	369	15.7	2,349
Grampian	791	16.7	4,728
Greater Glasgow and Clyde	1,374	19.8	6,940
Highland	646	17.3	3,732
Lanarkshire	748	17.7	4,222
Lothian	972	18.7	5,199
Orkney	52	18.3	284
Shetland	39	15.4	253
Tayside	618	18.5	3,336
Western Isles	51	16.8	303
<b>Scotland</b>	<b>7,053</b>	<b>18.0</b>	<b>39,285</b>

## Smoking

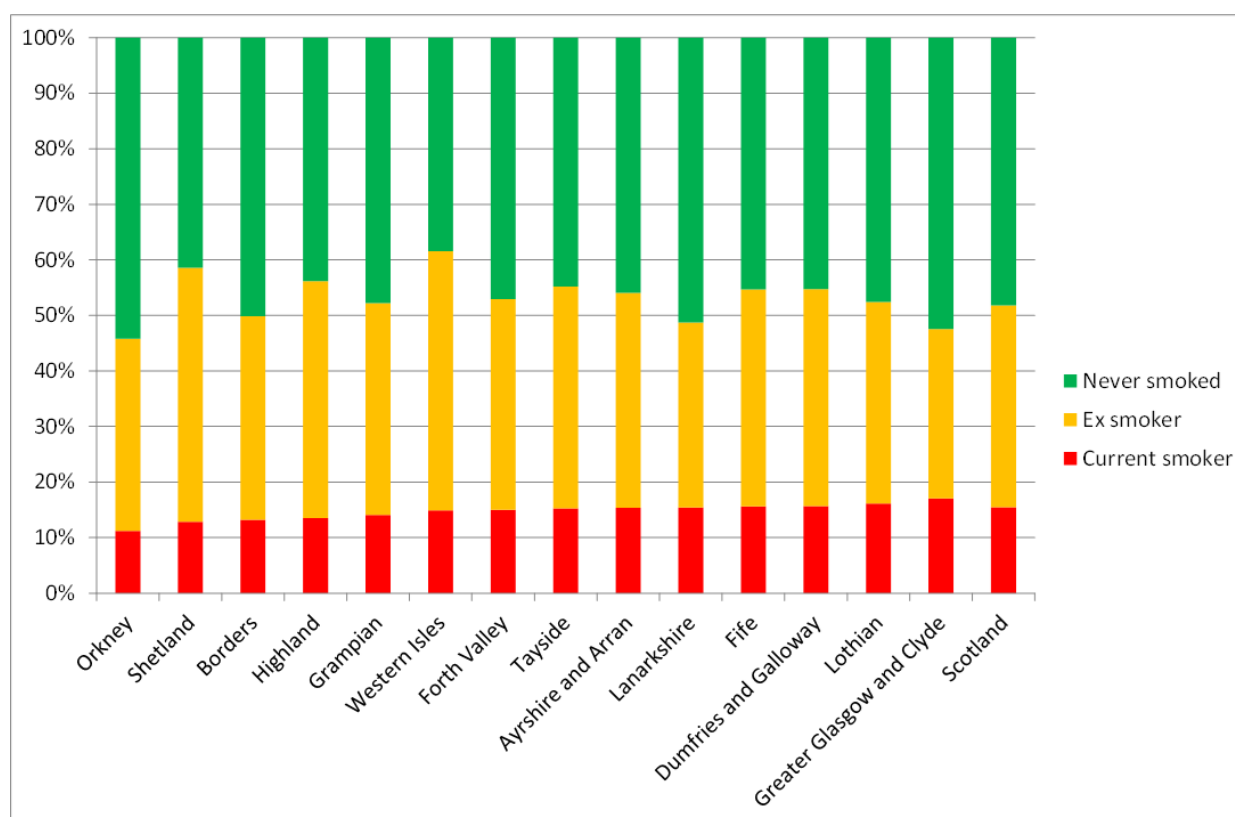
**Figure 44 Type 1 diabetes: Smoking status as a percentage of all those with a recorded smoking status, by NHS Health Board, ranked by current smoker percentage, Scotland 2021.**



**Table 72 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); ranked by current smoker percentage, Scotland 2021.**

NHS board	No. with known status	Current smoker (%)	Ex-smoker (%)	Never smoked (%)	Recorded (%)
Borders	438	13.9	29.5	56.6	57.4
Highland	1,460	14.9	28.9	56.2	63.5
Dumfries and Galloway	745	15.4	26.7	57.9	68.1
Fife	1,411	15.5	23.0	61.5	58.8
Forth Valley	919	15.9	21.0	63.1	43.8
Shetland	114	16.7	27.2	56.1	75.5
Greater Glasgow and Clyde	3,507	16.7	22.6	60.7	49.9
Lanarkshire	1,994	17.3	20.1	62.6	42.3
Lothian	2,534	17.4	24.7	57.8	47.7
Grampian	1,876	17.9	22.2	59.9	49.5
Orkney	112	17.9	18.8	63.4	78.3
Ayrshire and Arran	975	18.6	25.1	56.3	38.9
Tayside	904	19.9	23.7	56.4	37.5
Western Isles	99	21.2	31.3	47.5	43.0
<b>Scotland</b>	<b>17,088</b>	<b>16.9</b>	<b>23.7</b>	<b>59.4</b>	<b>48.9</b>

**Figure 45 Type 2 diabetes: Smoking status as a percentage of all those with a recorded smoking status, by NHS Health Board, ranked by current smoker percentage, Scotland 2021.**



**Table 73 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 current smoker percentage, Scotland 2021.**

NHS board	No. with known status	Current smoker (%)	Ex smoker (%)	Never smoked (%)	Recorded (%)
Orkney	768	11.2	34.6	54.2	68.2
Shetland	630	12.9	45.7	41.4	60.4
Borders	4,021	13.2	36.7	50.1	64.5
Highland	11,549	13.5	42.6	43.8	66.6
Grampian	17,032	14.1	38.2	47.8	61.6
Western Isles	1,049	14.9	46.7	38.4	72.7
Forth Valley	9,549	15.0	37.9	47.1	56.1
Tayside	13,279	15.2	40.0	44.8	60.5
Ayrshire and Arran	13,069	15.4	38.7	45.9	55.5
Lanarkshire	20,786	15.4	33.3	51.3	53.6
Fife	10,853	15.6	39.0	45.3	51.0
Dumfries and Galloway	5,028	15.7	39.1	45.2	55.1
Lothian	22,226	16.2	36.3	47.6	55.6
Greater Glasgow and Clyde	32,951	17.0	30.5	52.4	53.9
<b>Scotland</b>	<b>162,790</b>	<b>15.5</b>	<b>36.4</b>	<b>48.2</b>	<b>56.6</b>

## Foot Screening and Disease

**Table 74 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 2021.**

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	5	4.4	6	5.3	103	90.4	114	75.5
Dumfries and Galloway	12	1.8	40	6.1	39	6.0	563	86.1	654	59.8
Highland	23	1.8	116	8.8	105	8.0	1,070	81.4	1,314	57.2
Orkney	*	*	10	13.2	*	*	61	80.3	76	53.1
Borders	*	*	25	7.3	*	*	272	79.1	344	45.1
Greater Glasgow and Clyde	85	2.7	307	9.8	199	6.4	2,535	81.1	3,126	44.5
Western Isles	*	*	23	22.8	*	*	64	63.4	101	43.9
Lothian	45	2.6	136	7.8	132	7.6	1,435	82.1	1,748	32.9
Grampian	70	5.7	98	8.0	106	8.7	949	77.6	1,223	32.3
Tayside	44	6.5	98	14.4	52	7.6	486	71.5	680	28.2
Lanarkshire	54	4.3	118	9.5	109	8.7	967	77.5	1,248	26.5
Ayrshire and Arran	36	7.2	62	12.4	34	6.8	368	73.6	500	20.0
Forth Valley	12	2.9	42	10.3	39	9.5	316	77.3	409	19.5
Fife	35	25.2	32	23.0	11	7.9	61	43.9	139	5.8
<b>Scotland</b>	<b>423</b>	<b>3.6</b>	<b>1,112</b>	<b>9.5</b>	<b>891</b>	<b>7.6</b>	<b>9,250</b>	<b>79.2</b>	<b>11,676</b>	<b>33.4</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 = 1,281, type 2 n = 103).

Erratum: In the Scottish Diabetes Survey 2020, the 'Foot risk score recorded (%)' column of this table was miscalculated, with all boards over-calculating the percentage recorded. The Scotland percentage Foot risk score recorded should have been 33.1%, rather than the 34.3% stated.



**Table 75 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 2021.**

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	8	1.2	32	5.0	69	10.7	536	83.1	645	61.8
Orkney	13	1.9	112	16.1	132	19.0	438	63.0	695	61.7
Highland	138	1.4	739	7.3	1,383	13.7	7,859	77.7	10,119	58.4
Tayside	238	2.0	798	6.8	1,609	13.8	9,043	77.4	11,688	53.2
Western Isles	18	2.4	220	29.9	109	14.8	389	52.9	736	51.0
Dumfries and Galloway	73	1.6	180	4.0	545	12.1	3,724	82.4	4,522	49.5
Borders	14	0.5	139	4.8	341	11.7	2,430	83.1	2,924	46.9
Grampian	323	2.7	609	5.2	1,400	11.9	9,440	80.2	11,772	42.6
Lothian	346	2.2	986	6.2	2,125	13.4	12,444	78.3	15,901	39.8
Forth Valley	71	1.1	201	3.2	788	12.6	5,216	83.1	6,276	36.9
Ayrshire and Arran	182	2.3	307	3.9	672	8.5	6,729	85.3	7,890	33.5
Greater Glasgow and Clyde	573	3.0	1,156	6.0	2,119	10.9	15,539	80.2	19,387	31.7
Lanarkshire	291	2.7	617	5.8	1,158	10.9	8,598	80.6	10,664	27.5
Fife	217	8.8	289	11.8	395	16.1	1,555	63.3	2,456	11.5
<b>Scotland</b>	<b>2,505</b>	<b>2.4</b>	<b>6,385</b>	<b>6.0</b>	<b>12,845</b>	<b>12.2</b>	<b>83,940</b>	<b>79.4</b>	<b>105,675</b>	<b>36.7</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103).

## Comment

Only approximately one third of people with diabetes had a record of foot screening in 2021, with the pandemic continuing to have a major impact. Various solutions are being explored. Lack of risk stratification makes it more difficult to direct appropriate podiatry care to patients who need it most.

Foot screening for people at low risk has changed to 2 yearly, in a similar way to retinal screening. Screening for people at high risk will officially cease and be replaced by annual foot assessment and a surveillance tool resulting in a Treatment/Management plan agreed between the individual with diabetes and podiatrist. This is a proactive initiative to help reduce primary and recurrent ulceration.

The proportion of patients who have ever had a foot ulcer varies 3-fold across Health Boards, whilst the variation for amputations is less than two-fold. These are crude rates and will be influenced by age and deprivation in addition to diabetes control, smoking and other recognised clinical risk factors. The data indicates that we are probably not capturing all foot ulcers, although there is much less variation than before reflecting a significant improvement. The Scottish Diabetes Foot Action Group (SDFAG) is aware of these variations, which it feels is in part due to the way ulcer data is recorded and has implemented measures to ensure this data collection is consistent across all Health Boards.

## Retinopathy Screening

Percentage of people with diabetes eligible for diabetic retinopathy screening (DRS) who were screened within last 15 months (not taking into account changing eye screening intervals from 2020) - 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

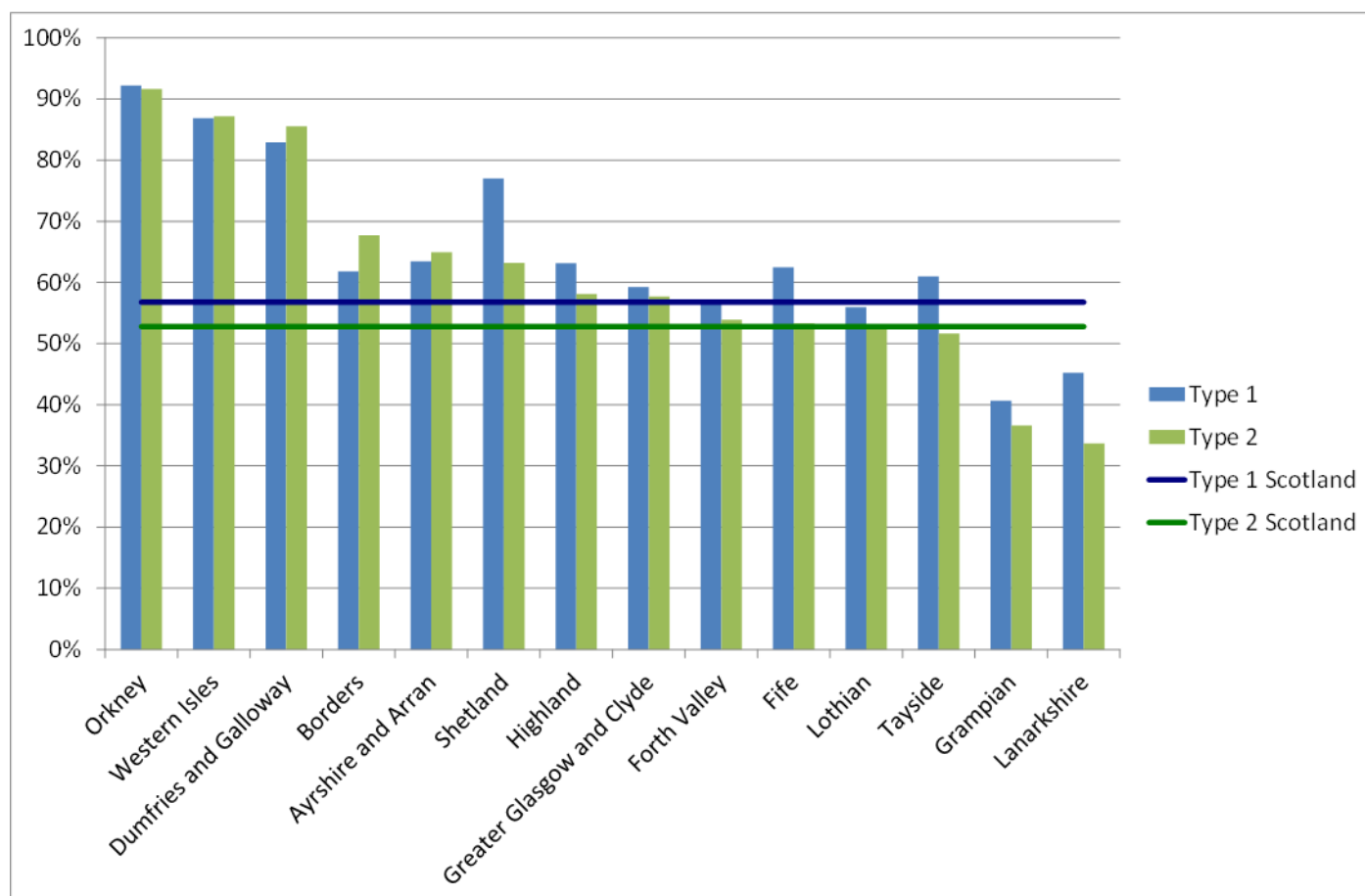
### Notes

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

Further information available from the Scottish Diabetic Eye Screening collaborative <https://www.ndrs.scot.nhs.uk/> (latest annual report 2018/9 and performance report Q4 2019)

## Diabetic Retinal Screening Regional Detail

**Figure 46** Percentage of people with type 1 or type 2 diabetes aged 12 years or older 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 2021.



Note: Excludes people under 12 years of age or people whose date of birth has not been recorded (type 1 n = 1,281, type 2 n = 103).

Table 76 and Table 77 show the number and proportion of people of appropriate age ( $\geq 12$  years) who were either screened within the last 15 months, 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 76** Number and percentage of people with type 1 and type 2 diabetes aged 12 years or older 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 2021.

NHS board	Type 1 diabetes		Type 2 diabetes		All (Type 1 and Type 2)		Not recorded (n)
	n	%	n	%	n	%	
Orkney	130	92.2	1,032	91.7	1,162	91.7	105
Western Isles	192	86.9	1,258	87.2	1,450	87.1	214
Dumfries and Galloway	868	82.9	7,808	85.6	8,676	85.3	1,497
Borders	457	61.8	4,220	67.7	4,677	67.1	2,294
Ayrshire and Arran	1,535	63.5	15,293	64.9	16,828	64.8	9,137
Shetland	114	77.0	659	63.2	773	64.9	418
Highland	1,403	63.2	10,074	58.1	11,477	58.7	8,070
Greater Glasgow and Clyde	4,011	59.3	35,273	57.7	39,284	57.9	28,600
Forth Valley	1,134	56.5	9,178	53.9	10,312	54.2	8,718
Fife	1,443	62.5	11,327	53.3	12,770	54.2	10,796
Lothian	2,871	56.0	21,176	53.0	24,047	53.3	21,046
Tayside	1,424	61.0	11,346	51.7	12,770	52.6	11,527
Grampian	1,487	40.7	10,130	36.7	11,617	37.1	19,677
Lanarkshire	2,037	45.2	13,039	33.7	15,076	34.9	28,132
<b>Scotland</b>	<b>19,106</b>	<b>56.8</b>	<b>151,813</b>	<b>52.8</b>	<b>170,919</b>	<b>53.2</b>	<b>150,231</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103)

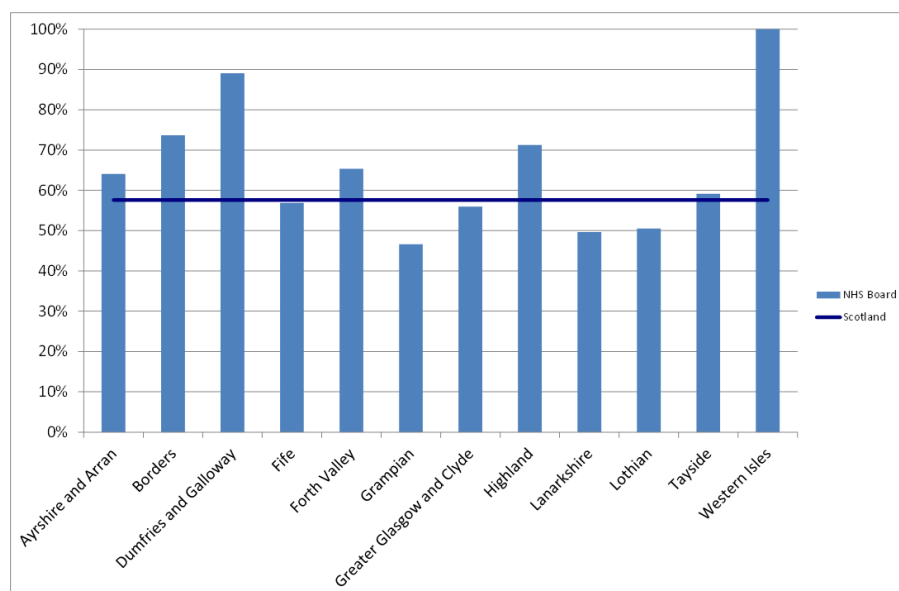
**Table 77** Numbers of people eligible for retinopathy screening, numbers screened and percentages of those who had a record of screening (type 1 and type 2 diabetes combined), ranked from high to low by percentage of screened people, Scotland 2021.

NHS board	Eligible for screening (n)	Screened	
		People (n)	%
Orkney	1,238	1,133	91.5
Western Isles	1,649	1,435	87.0
Dumfries and Galloway	9,848	8,351	84.8
Borders	6,803	4,509	66.3
Shetland	1,183	765	64.7
Ayrshire and Arran	25,399	16,262	64.0
Highland	19,340	11,270	58.3
Greater Glasgow and Clyde	66,250	37,650	56.8
Forth Valley	18,971	10,253	54.0
Fife	23,157	12,361	53.4
Lothian	44,148	23,102	52.3
Tayside	23,765	12,238	51.5
Grampian	30,820	11,145	36.2
Lanarkshire	42,381	14,249	33.6
<b>Scotland</b>	<b>314,952</b>	<b>164,723</b>	<b>52.3</b>

Note: Excludes children under 12 years of age or people who have no date of birth recorded (type 1 n = 1,281, type 2 n = 103).

## Age and Type Stratified Eye Screening

**Figure 47** Retinopathy screening within previous 15 months - Type 1 and other diabetes aged 12-17 years who have not been suspended from eye screening by NHS board, Scotland 2021.

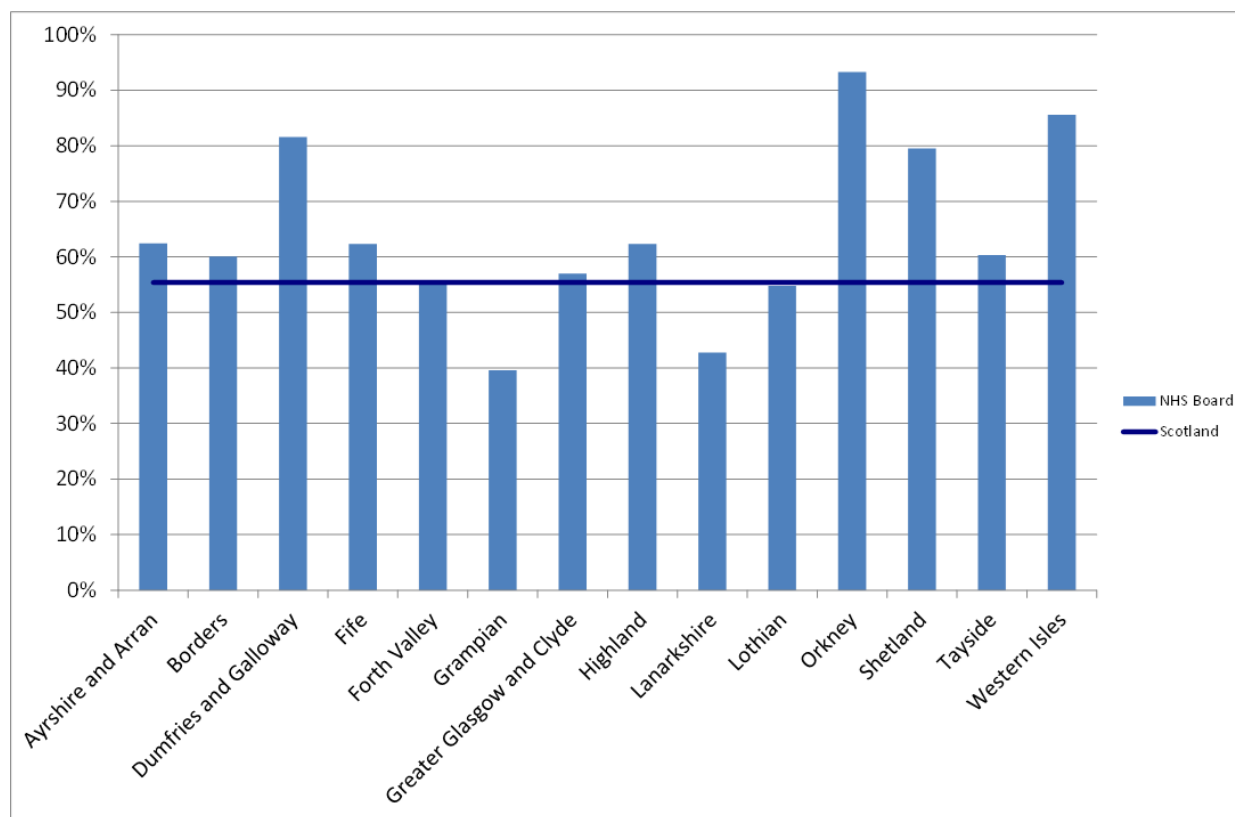


Note: Bars for boards with hidden data are not shown. People flagged as “Temporarily Unavailable” are included in the denominator.

**Table 78** Retinopathy screening within previous 15 months – Type 1 and other diabetes aged 12-17 years who have not been suspended from eye screening by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 12-17 (n)
	People (n)	%	
Ayrshire and Arran	107	64.1	167
Borders	28	73.7	38
Dumfries and Galloway	65	89.0	73
Fife	87	56.9	153
Forth Valley	100	65.4	153
Grampian	118	46.6	253
Greater Glasgow and Clyde	226	55.9	404
Highland	104	71.2	146
Lanarkshire	155	49.7	312
Lothian	147	50.5	291
Orkney	*	*	6
Shetland	*	*	11
Tayside	84	59.2	142
Western Isles	20	100.0	20
<b>Scotland</b>	<b>1,250</b>	<b>57.6</b>	<b>2,169</b>

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. People flagged as “Temporarily Unavailable” are included in the denominator

**Figure 48 Retinopathy screening within previous 15 months - Type 1 diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.**

Note: People flagged as “Temporarily Unavailable” are included in the denominator

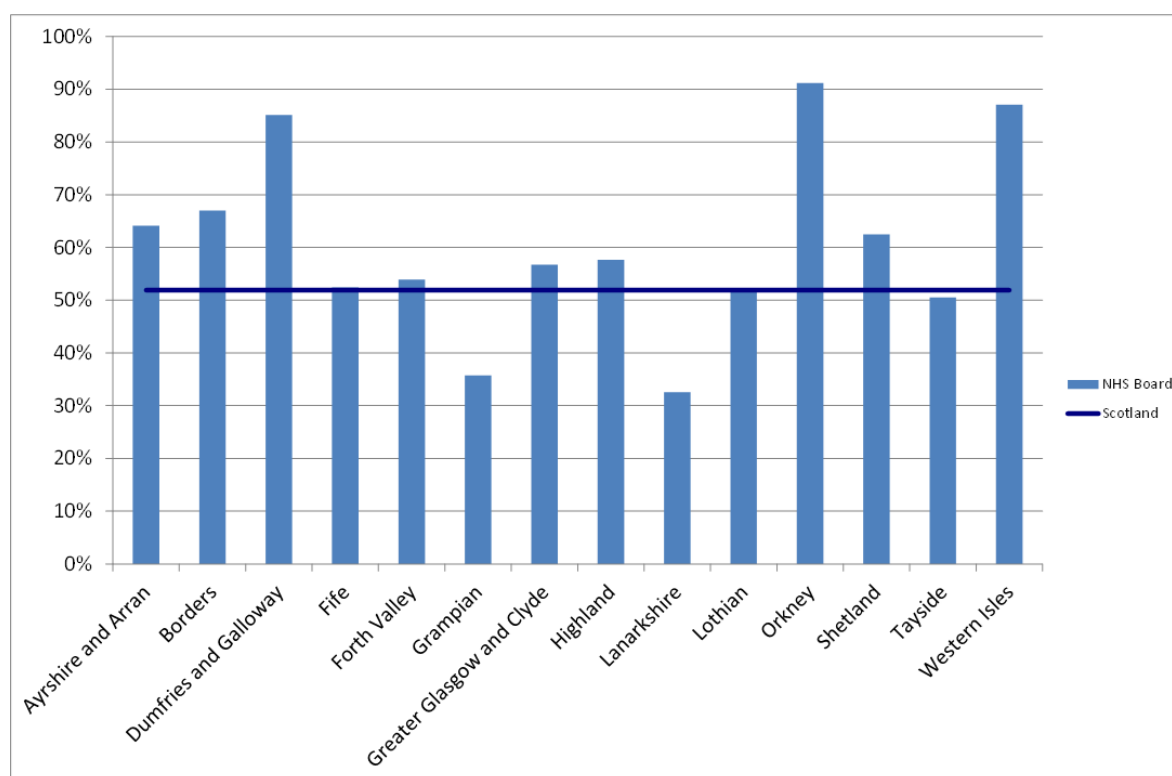
**Table 79 Retinopathy screening within previous 15 months - Type 1 diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	1,370	62.4	2,194
Borders	409	60.1	681
Dumfries and Galloway	761	81.6	933
Fife	1,329	62.3	2,133
Forth Valley	1,020	55.3	1,844
Grampian	1,335	39.6	3,373
Greater Glasgow and Clyde	3,433	57.0	6,022
Highland	1,286	62.3	2,064
Lanarkshire	1,732	42.8	4,047
Lothian	2,578	54.8	4,705
Orkney	125	93.3	134
Shetland	109	79.6	137
Tayside	1,301	60.3	2,156
Western Isles	172	85.6	201
<b>Scotland</b>	<b>16,960</b>	<b>55.4</b>	<b>30,624</b>

Note: People flagged as “Temporarily Unavailable” are included in the denominator



**Figure 49 Retinopathy screening within previous 15 months - Type 2 and other diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.**



Note: People flagged as “Temporarily Unavailable” are included in the denominator

**Table 80 Retinopathy screening within previous 15 months - Type 2 and other diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	14,866	64.1	23,181
Borders	4,174	67.0	6,229
Dumfries and Galloway	7,655	85.1	8,996
Fife	11,064	52.4	21,104
Forth Valley	9,279	53.9	17,214
Grampian	9,833	35.7	27,534
Greater Glasgow and Clyde	34,526	56.7	60,868
Highland	10,137	57.7	17,574
Lanarkshire	12,648	32.6	38,823
Lothian	21,006	52.0	40,366
Orkney	1,015	91.2	1,113
Shetland	659	62.5	1,055
Tayside	11,059	50.6	21,876
Western Isles	1,254	87.1	1,440
<b>Scotland</b>	<b>149,175</b>	<b>51.9</b>	<b>287,373</b>

Note: People flagged as “Temporarily Unavailable” are included in the denominator

## Disengaged from Diabetes Care

Percentage of people with diabetes who are disengaged from diabetes care, i.e. absence of record of both HbA<sub>1c</sub> and retinal screening in the preceding 15 months - presented in defined age ranges.

Engagement with diabetes care is not a specified treatment target for those under 18 years of age, and consequently the data for those under 18 have been omitted.

### Methodology

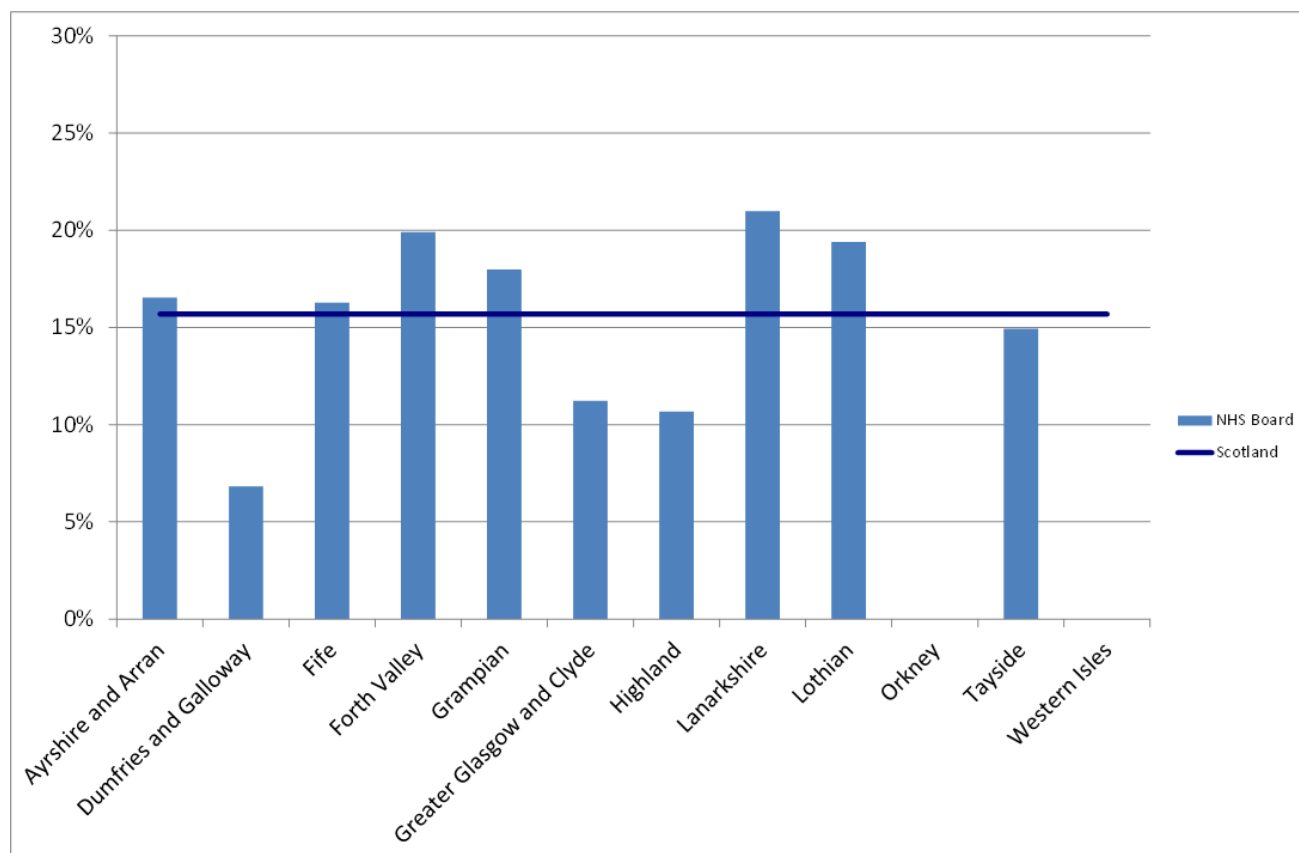
Included population = people with diabetes aged 18 or over who have a duration of diabetes  $\geq 1$  year are included.

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).

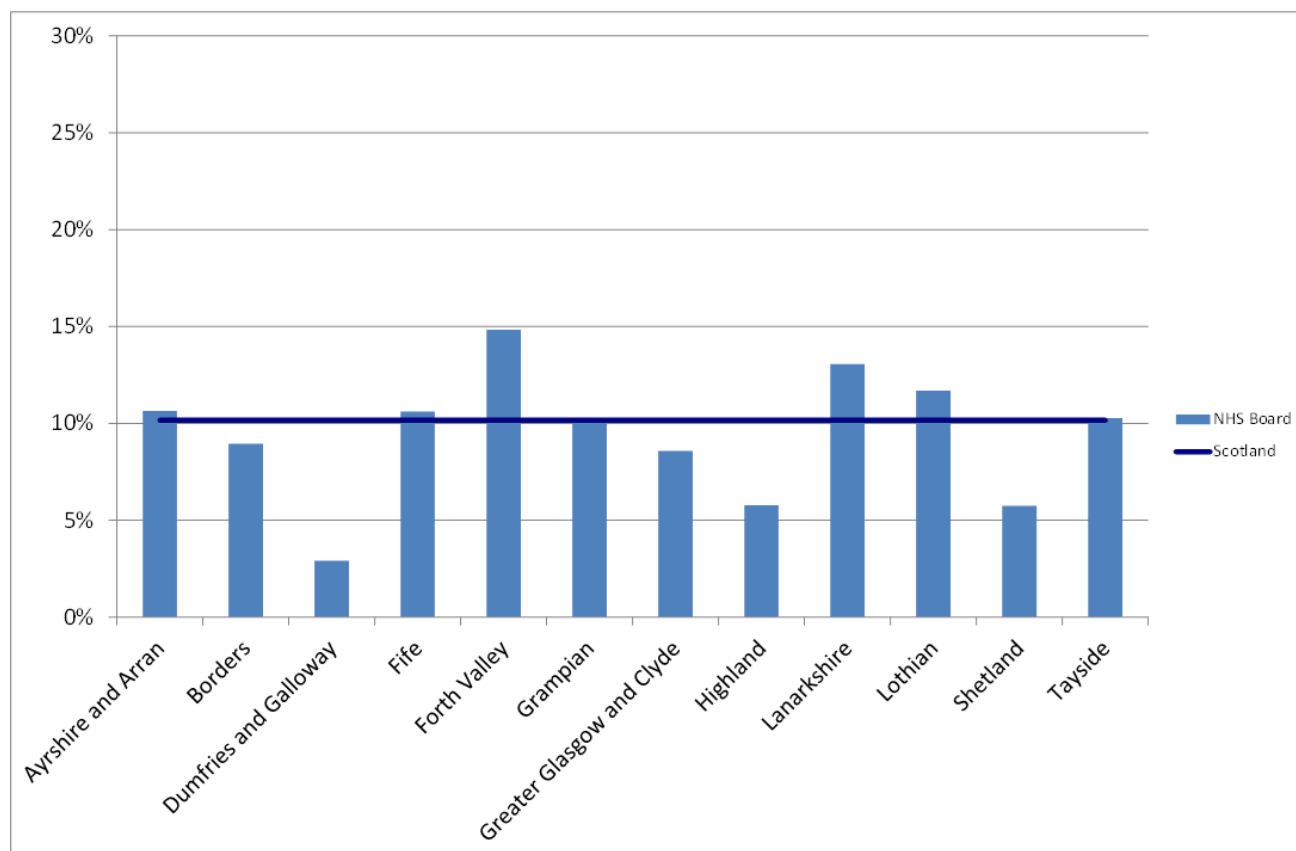
**Figure 50 Disengaged from diabetes care - Type 1 aged 18-25 years by NHS board, Scotland 2021.**

Note: Bars for boards with hidden data are not shown.

**Table 81 Disengaged from diabetes care - Type 1 aged 18-25 years by NHS board, Scotland 2021.**

NHS board	Disengaged		All aged 18-25 (n)
	People (n)	%	
Ayrshire and Arran	45	16.5	272
Borders	*	*	61
Dumfries and Galloway	6	6.8	88
Fife	35	16.3	215
Forth Valley	43	19.9	216
Grampian	66	18.0	367
Greater Glasgow and Clyde	89	11.2	793
Highland	22	10.7	206
Lanarkshire	98	21.0	467
Lothian	104	19.4	536
Orkney	0	0.0	16
Shetland	*	*	13
Tayside	39	14.9	261
Western Isles	0	0.0	19
<b>Scotland</b>	<b>554</b>	<b>15.7</b>	<b>3,530</b>

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

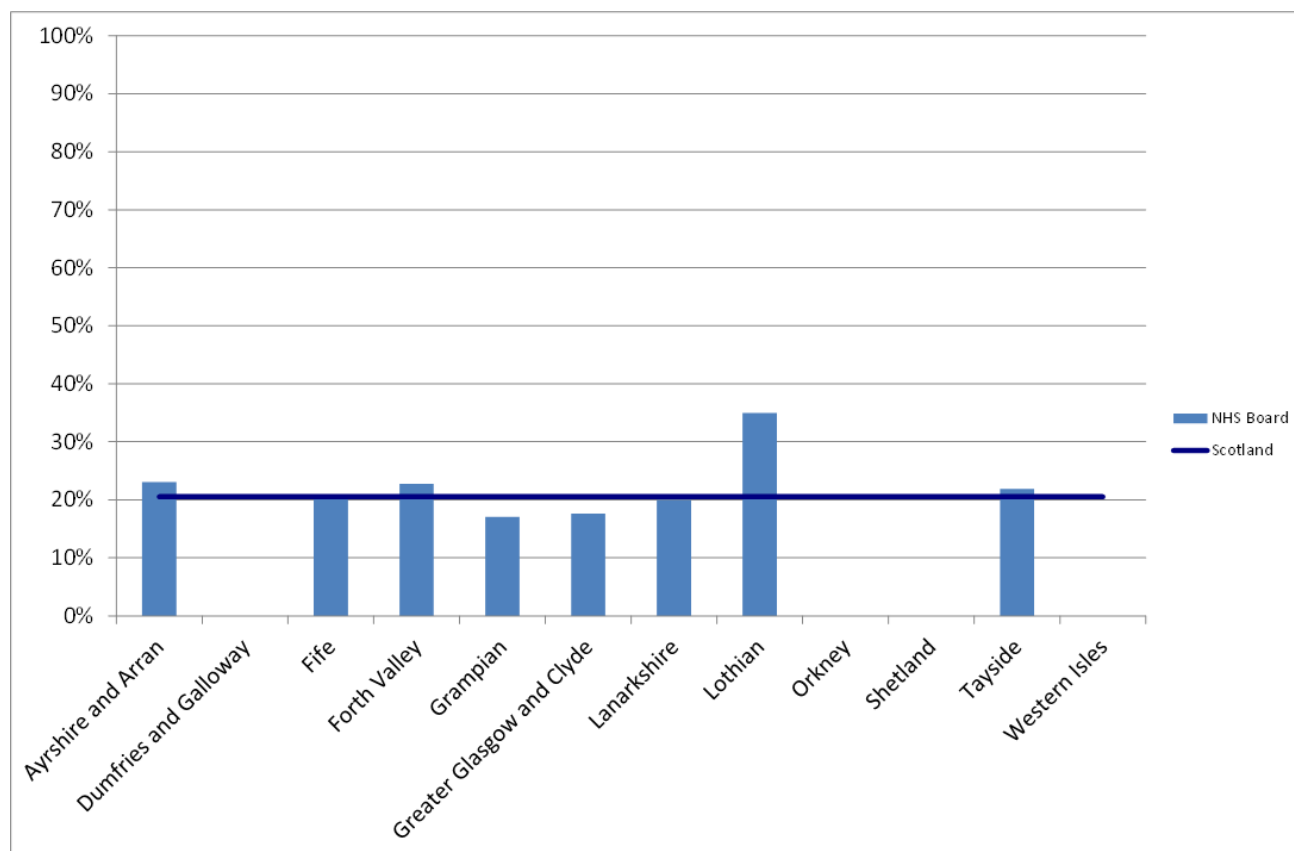
**Figure 51 Disengaged from diabetes care - Type 1 aged 26+ years by NHS board, Scotland 2021.**

Note: Bars for boards with hidden data are not shown.

**Table 82 Disengaged from diabetes care – Type 1 Aged 26+ years by NHS board, Scotland 2021.**

NHS board	Disengaged		All aged 26+ (n)
	People (n)	%	
Ayrshire and Arran	207	10.7	1,942
Borders	56	8.9	626
Dumfries and Galloway	25	2.9	860
Fife	202	10.6	1,902
Forth Valley	237	14.8	1,598
Grampian	302	10.1	2,983
Greater Glasgow and Clyde	466	8.6	5,425
Highland	105	5.8	1,817
Lanarkshire	478	13.1	3,660
Lothian	494	11.7	4,225
Orkney	*	*	111
Shetland	7	5.7	122
Tayside	194	10.3	1,888
Western Isles	*	*	179
<b>Scotland</b>	<b>2,780</b>	<b>10.2</b>	<b>27,338</b>

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

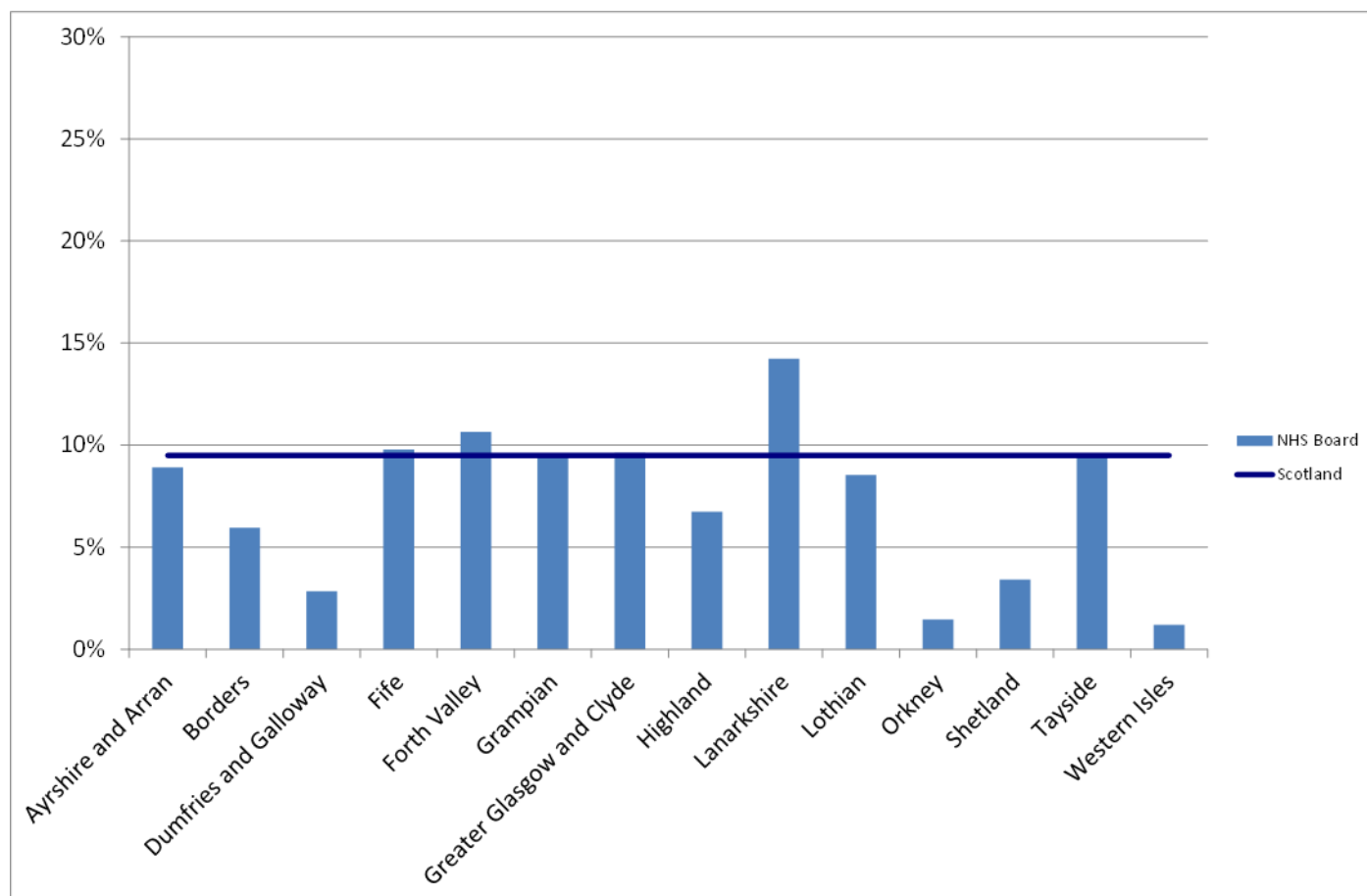
**Figure 52 Disengaged from diabetes care - Type 2 and other aged 18-25 years by NHS board, Scotland 2021.**

Note: Bars for boards with hidden data are not shown.

**Table 83 Disengaged from diabetes care - Type 2 and other aged 18-25 years by NHS board, Scotland 2021.**

NHS board	Disengaged		All aged 18-25 (n)
	People (n)	%	
Ayrshire and Arran	6	23.1	26
Borders	*	*	*
Dumfries and Galloway	0	0.0	11
Fife	5	20.8	24
Forth Valley	5	22.7	22
Grampian	7	17.1	41
Greater Glasgow and Clyde	22	17.6	125
Highland	*	*	24
Lanarkshire	12	20.0	60
Lothian	21	35.0	60
Orkney	0	0.0	*
Shetland	0	0.0	*
Tayside	7	21.9	32
Western Isles	0	0.0	*
<b>Scotland</b>	<b>90</b>	<b>20.5</b>	<b>438</b>

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

**Figure 53 Disengaged from diabetes care - Type 2 and other aged 26+ years by NHS board, Scotland 2021.****Table 84 Disengaged from diabetes care - Type 2 and other aged 26+ years by NHS board, Scotland 2021.**

NHS board	Disengaged		All aged 26+ (n)
	People (n)	%	
Ayrshire and Arran	1,948	8.9	21,861
Borders	354	6.0	5,942
Dumfries and Galloway	244	2.8	8,582
Fife	1,939	9.8	19,818
Forth Valley	1,666	10.7	15,640
Grampian	2,432	9.3	26,018
Greater Glasgow and Clyde	5,461	9.6	56,855
Highland	1,101	6.7	16,345
Lanarkshire	5,174	14.2	36,312
Lothian	3,221	8.5	37,733
Orkney	15	1.4	1,041
Shetland	34	3.4	998
Tayside	1,943	9.4	20,728
Western Isles	16	1.2	1,337
<b>Scotland</b>	<b>25,548</b>	<b>9.5</b>	<b>269,210</b>

## Attendance at Structured Education

Percentage of people over 18 years of age with diabetes who have a record of ever attending Level 3 structured education.

### Methodology

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

Numerator = number of people with diabetes aged 18 or over by type of diabetes who have at least one "Level 3" education record with "Education Status" = "Participated" at any time.

Denominator = the total number of people with diabetes aged 18 or over by type of diabetes.

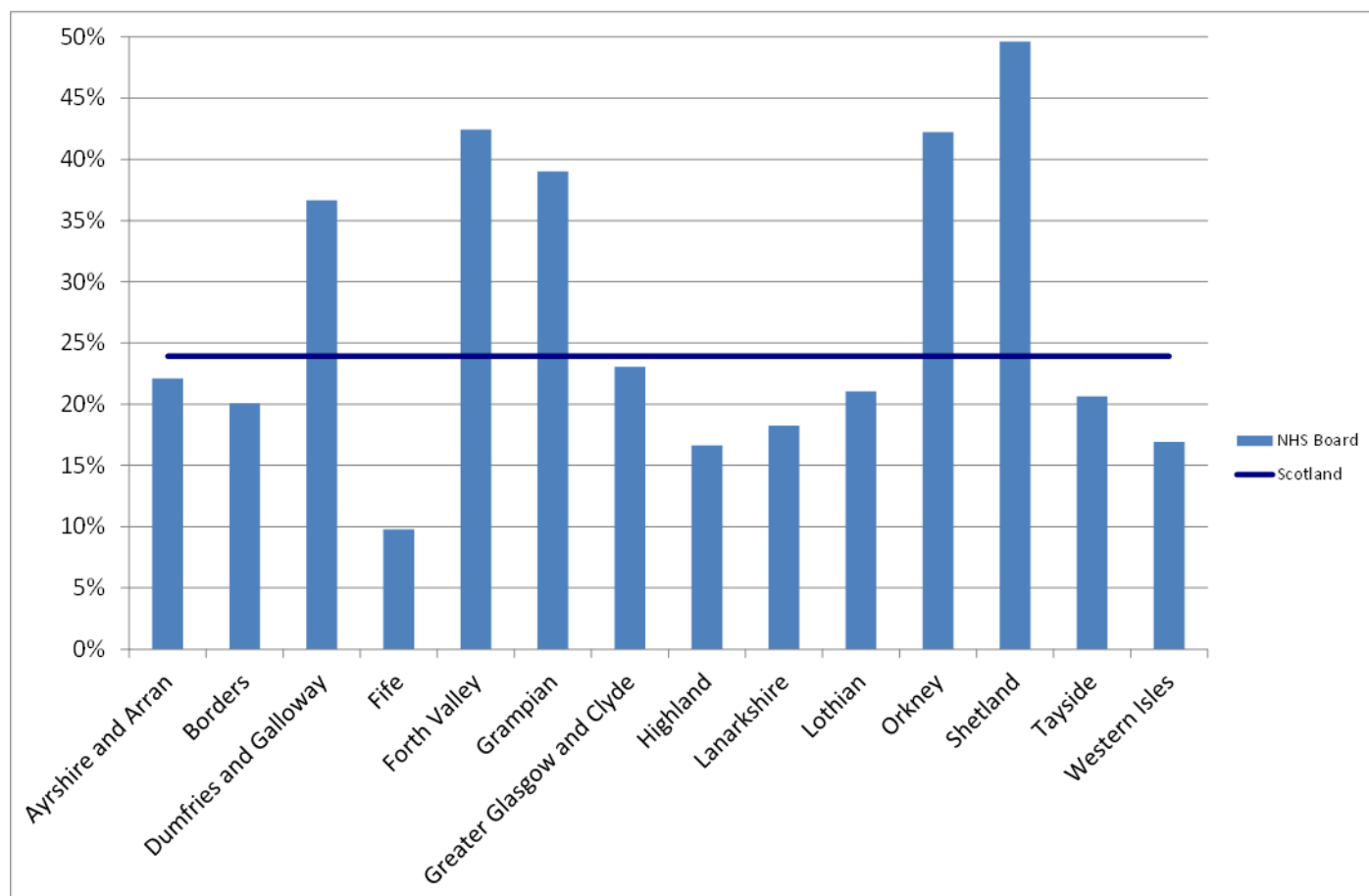
### Notes

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

### Comment

During the pandemic, delivering structured education has been challenging due to restrictions regarding face-to-face groups. Clinical teams have continued to support people with diabetes by adopting innovative alternatives through on-line platforms. Health Boards have different IT governance structures which, in turn, have led to an inequality of opportunity for on-line group education programmes. Solutions to these challenges continue to be explored both from an IT perspective and with HCPs delivering education 1 to 1 with alternatives for peer support. Collaboration continues with the Healthier Futures team as we address structured education delivery for the person with newly diagnosed type 2 diabetes. The opportunity for digital solutions continues alongside a toolkit of educational experiences to promote and support self-management and well-being.

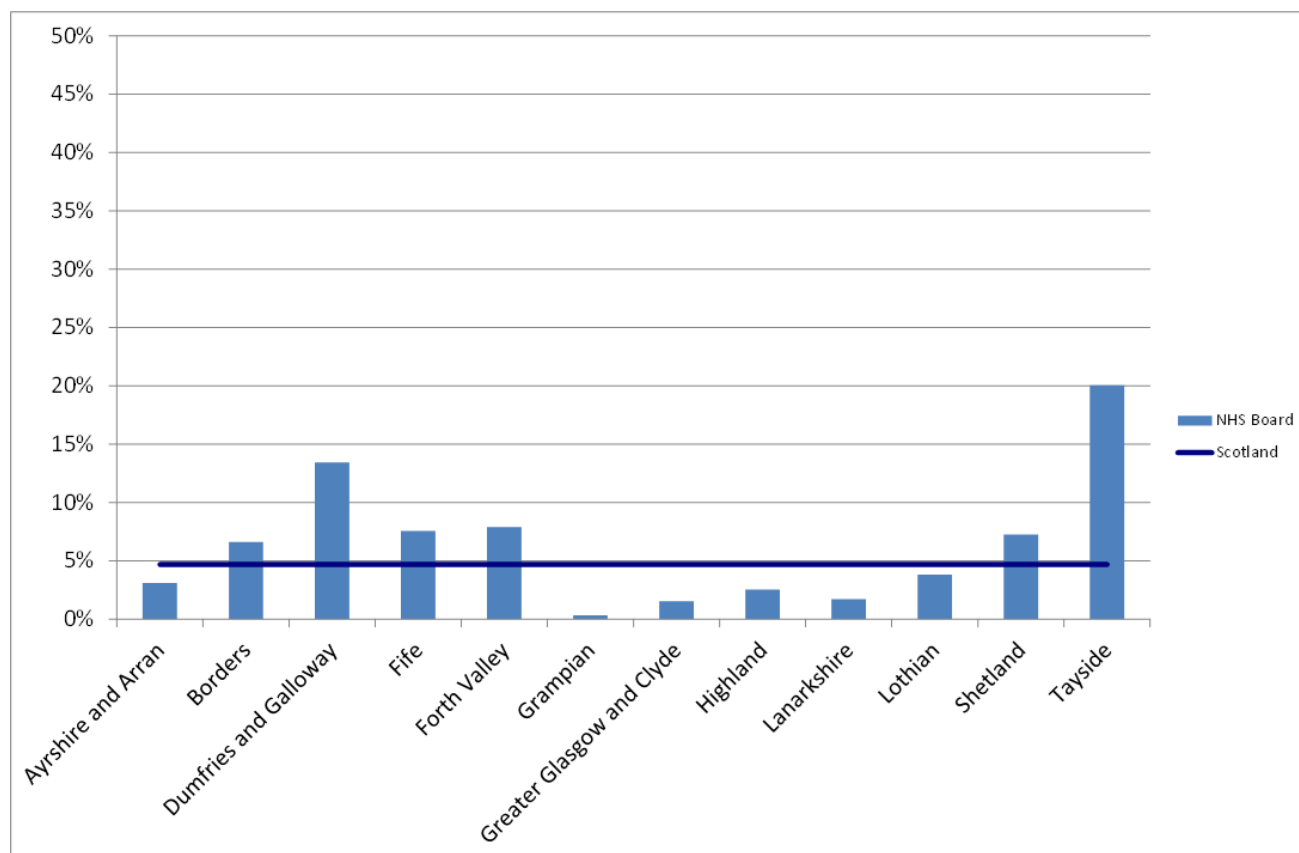
**Figure 54 Attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.**



**Table 85 Record of having ever attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.**

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	499	22.1	2,256
Borders	141	20.1	702
Dumfries and Galloway	358	36.6	977
Fife	212	9.8	2,166
Forth Valley	791	42.5	1,863
Grampian	1,332	39.0	3,412
Greater Glasgow and Clyde	1,472	23.1	6,383
Highland	346	16.6	2,080
Lanarkshire	767	18.3	4,200
Lothian	1,024	21.1	4,862
Orkney	57	42.2	135
Shetland	68	49.6	137
Tayside	454	20.7	2,198
Western Isles	34	16.9	201
<b>Scotland</b>	<b>7,555</b>	<b>23.9</b>	<b>31,572</b>



**Figure 55** Record of having ever attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.

Note: Bars for boards with hidden data are not shown.

**Table 86** Record of having ever attended structured education - Type 2 and other aged 18+ years by NHS board, Scotland 2021.

NHS board	Achieving measure		All aged 18+ (n)
	People (n)	%	
Ayrshire and Arran	736	3.1	23,687
Borders	422	6.6	6,381
Dumfries and Galloway	1,245	13.4	9,280
Fife	1,623	7.6	21,486
Forth Valley	1,359	7.9	17,254
Grampian	86	0.3	27,982
Greater Glasgow and Clyde	939	1.5	62,176
Highland	452	2.5	17,775
Lanarkshire	676	1.7	39,521
Lothian	1,568	3.8	41,193
Orkney	*	*	1,141
Shetland	77	7.2	1,063
Tayside	4,486	20.1	22,372
Western Isles	*	*	1,455
<b>Scotland</b>	<b>13,678</b>	<b>4.7</b>	<b>292,766</b>

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

## Use of Technology

Data are reported as recorded in SCI-diabetes and are likely to need updating/checking.

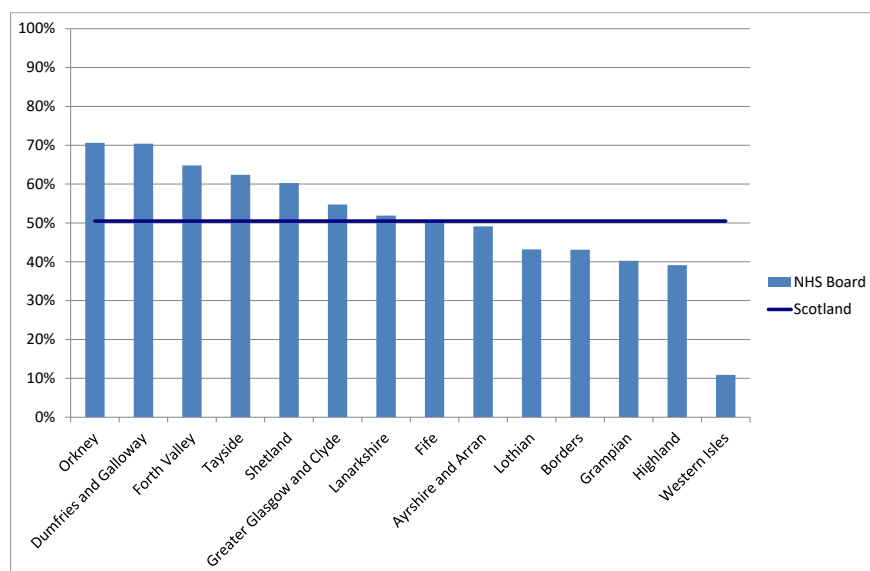
**Table 87** Numbers and percentages of people with type 1 diabetes using insulin pumps by age group and NHS board, ranked by decreasing percentage of people aged under 18 using an insulin pump, Scotland 2021.

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	%
Lothian	443	267	60.3	4,864	769	15.8	5,307	1,036	19.5
Fife	235	141	60.0	2,166	334	15.4	2,401	475	19.8
Orkney	8	*	*	135	*	*	143	25	17.5
Dumfries and Galloway	118	56	47.5	976	194	19.9	1,094	250	22.9
Forth Valley	236	111	47.0	1,863	258	13.8	2,099	369	17.6
Borders	59	26	44.1	702	95	13.5	761	121	15.9
Shetland	14	*	*	137	*	*	151	18	11.9
Ayrshire and Arran	250	100	40.0	2,256	211	9.4	2,506	311	12.4
Highland	217	74	34.1	2,080	229	11.0	2,297	303	13.2
Lanarkshire	490	162	33.1	4,200	485	11.5	4,690	647	13.8
Greater Glasgow and Clyde	644	212	32.9	6,383	760	11.9	7,027	972	13.8
Tayside	211	62	29.4	2,198	293	13.3	2,409	355	14.7
Western Isles	28	8	28.6	201	21	10.4	229	29	12.7
Grampian	376	92	24.5	3,412	385	11.3	3,788	477	12.6
<b>Scotland</b>	<b>3,329</b>	<b>1,321</b>	<b>39.7</b>	<b>31,573</b>	<b>4,067</b>	<b>12.9</b>	<b>34,902</b>	<b>5,388</b>	<b>15.4</b>

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

## Continuous and Flash Glucose Measurement Device Use

**Figure 56** Percentage of people with type 1 diabetes recorded as using a Flash Glucose Meter by NHS Board ranked by decreasing total percentage of users using a Flash Glucose Meter, Scotland 2021.



**Table 88** Numbers and percentages of people with type 1 diabetes recorded as using continuous and flash glucose measurement devices by NHS Board, ranked by decreasing percentage of users using a Flash Glucose Meter, Scotland 2021.

NHS board	Realtime Continuous Glucose Meter		Flash Glucose Meter		Realtime Continuous and Flash Glucose Meter	
	n	%	n	%	n	%
Orkney	6	4.2	101	70.6	*	*
Dumfries and Galloway	39	3.6	770	70.4	9	0.8
Forth Valley	73	3.5	1,360	64.8	32	1.5
Tayside	96	4.0	1,503	62.4	54	2.2
Shetland	7	4.6	91	60.3	0	0.0
Greater Glasgow and Clyde	234	3.3	3,848	54.7	92	1.3
Lanarkshire	139	3.0	2,444	51.9	46	1.0
Fife	156	6.5	1,214	50.6	38	1.6
Ayrshire and Arran	56	2.2	1,231	49.1	8	0.3
Lothian	141	2.7	2,292	43.2	46	0.9
Borders	17	2.2	329	43.1	*	*
Grampian	88	2.3	1,525	40.3	40	1.1
Highland	93	4.0	899	39.1	13	0.6
Western Isles	16	7.0	25	10.9	*	*
<b>Scotland</b>	<b>1,161</b>	<b>3.3</b>	<b>17,632</b>	<b>50.5</b>	<b>385</b>	<b>1.1</b>

Note: \* Indicates a figure between 1 and 4 or a figure that indirectly reveals such figures. This is the first year these data have been reported and further validation is required.

## 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 89 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 2013-2021.**

Year	Registered Users				Active Users	
	Type 1 diabetes	Type 2 diabetes	Total people	Yearly change (%)	People (n)	Yearly change (%)
2021	15,196	42,433	57,629	10.4	30,909	8.8
2020	14,345	37,866	52,211	10.3	28,422 *	12.9 *
2019	13,327	34,016	47,343	17.9	25,425 *	21.1 *
2018	12,120	28,021	40,141	28.2	21,118 *	31.6 *
2017	9,972	21,337	31,309	29.1	16,536	39.7

Note: \* – The number of Active Users in the period 2018-2020 has been updated to match the methodology used in other parts of this Survey by excluding people that have moved out of Scotland or that have died, e.g., the Active Users for 2020 were reduced from 29,752 to 28,422. Numbers in the years prior to 2018 have not been calculated but would also be slightly lower.

At the end of 2021, 30,909 people had accessed their results using “My Diabetes My Way” (Table 89). During the final 3 months of 2021, a total of 7,756 (25.1% 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 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 [mydiabetes.myway@nhs.scot](mailto:mydiabetes.myway@nhs.scot).

## 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 year. Records access is a key objective of the Scottish Diabetes Improvement Plan.

**Table 90** 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 ranked by decreasing total percentage of registered users, Scotland 2021.

NHS board	Type 1 diabetes			Type 2 diabetes			Total		
	n	Pop.	%	n	Pop.	%	n	Pop.	%
Orkney	90	143	62.9	198	1,126	17.6	288	1,269	22.7
Grampian	1,909	3,788	50.4	5,113	27,637	18.5	7,022	31,425	22.3
Greater Glasgow and Clyde	3,296	7,030	46.9	11,218	61,126	18.4	14,514	68,156	21.3
Borders	387	763	50.7	1,086	6,236	17.4	1,473	6,999	21.0
Shetland	65	151	43.0	182	1,043	17.4	247	1,194	20.7
Tayside	904	2,409	37.5	3,853	21,962	17.5	4,757	24,371	19.5
Western Isles	59	230	25.7	247	1,443	17.1	306	1,673	18.3
Lothian	2,625	5,307	49.5	5,541	39,969	13.9	8,166	45,276	18.0
Forth Valley	1,238	2,099	59.0	1,997	17,023	11.7	3,235	19,122	16.9
Fife	755	2,401	31.4	3,062	21,265	14.4	3,817	23,666	16.1
Lanarkshire	2,078	4,709	44.1	4,923	38,771	12.7	7,001	43,480	16.1
Ayrshire and Arran	820	2,506	32.7	2,653	23,546	11.3	3,473	26,052	13.3
Dumfries and Galloway	333	1,094	30.4	968	9,130	10.6	1,301	10,224	12.7
Highland	637	2,298	27.7	1,392	17,329	8.0	2,029	19,627	10.3
<b>Scotland</b>	<b>15,196</b>	<b>34,928</b>	<b>43.5</b>	<b>42,433</b>	<b>287,606</b>	<b>14.8</b>	<b>57,629</b>	<b>322,534</b>	<b>17.9</b>

Note: The above figures show the number of people who had registered to access their diabetes data at the end of 2021. 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.

**Table 91 Numbers of people with type 1 and type 2 diabetes who had joined the NRS Diabetes Register by NHS board, Scotland 2021.**

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	33	85	118	26,198	0.5
Borders	18	26	44	7,151	0.6
Dumfries and Galloway	129	450	579	10,382	5.6
Fife	216	410	626	23,910	2.6
Forth Valley	87	172	259	19,368	1.3
Grampian	170	556	726	31,778	2.3
Greater Glasgow and Clyde	820	2,759	3,579	69,241	5.2
Highland	466	674	1,140	20,083	5.7
Lanarkshire	260	606	866	44,311	2.0
Lothian	956	1,548	2,504	46,532	5.4
Orkney	*	*	*	1,284	*
Shetland	*	*	*	1,215	*
Tayside	599	4,147	4,746	24,789	19.1
Western Isles	*	*	14	1,685	0.8
<b>Scotland</b>	<b>3,769</b>	<b>11,441</b>	<b>15,210</b>	<b>327,927</b>	<b>4.6</b>

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

Individuals can 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).

# Acknowledgements

The data for this survey were provided by the Diabetes Managed Clinical Networks in each health board and collated by the SCI-Diabetes Team (Andrew Taylor). Michael Bluett produced the tables and graphs and edited the report. Chairs of sub-groups of the Scottish Diabetes Group and members of the previous Scottish Diabetes Group were asked to comment and the helpful comments received are acknowledged, we have attempted to include them all.

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- Figure 3 Type 2 diabetes: Percentage of people with a record of HbA<sub>1c</sub> in each HbA<sub>1c</sub> category, Scotland 2012-2021.
- Figure 4 Proportions of all children under 16 years of age with diabetes by age band and by health board, Scotland 2021.
- Figure 5 Incidence rate (per 100,000 population per year) for children under 16 years of age with diabetes in each band and by health board, Scotland 2021.
- Figure 6 Receiving all applicable processes of care - Type 1 and other age 0-11 by NHS board, Scotland 2021.
- Figure 7 Receiving all applicable processes of care - Type 1 and other aged 12-17 years by NHS board, Scotland 2021.
- Figure 8 Percentage of people under 16 years of age with diabetes with a recorded HbA<sub>1c</sub> within the previous 15 months by NHS board, Scotland 2021.
- Figure 9 Percentage of children between 12 and 15 years of age with diabetes eligible for diabetic eye screening (DES) who were screened within the last 15 months by NHS board, Scotland 2021.
- Figure 10 Percentage of children between 5 and 15 years of age with diabetes with a recorded blood pressure within the previous 15 months by NHS board, Scotland 2021.
- Figure 11 Percentage of children between 5 and 15 years of age with diabetes with a recorded albumin / creatinine ratio within the previous 15 months by NHS board, Scotland 2021.
- Figure 12 Percentage of people under 16 years of age with diabetes recorded as having had thyroid screening (TSH) within the previous 15 months by NHS board, Scotland 2021.
- Figure 13 Percentage of people under 16 years of age with diabetes recorded as having had coeliac screening (TTG) within the previous 15 months by NHS board, Scotland 2021.
- Figure 14 Percentage of people under 16 years of age with diabetes recorded as using an insulin pump by NHS board, Scotland 2021.
- Figure 15 Crude diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2021.



- Figure 16 Age-adjusted diabetes prevalence (all types) by NHS Health Board, ranked by prevalence, Scotland 2021.
- Figure 17 Prevalence per 100,000 people of monogenic diabetes, by NHS Board, Scotland 2021.
- Figure 18 Foot Ulcer Prevalence and Incidence - Type 1 aged 18+ years by NHS board, Scotland 2021.
- Figure 19 Foot Ulcer Prevalence and Incidence - Type 2 and other aged 18+ years by NHS board, Scotland 2021.
- Figure 20 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 2021.
- Figure 21 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 2020 to 2021.
- Figure 22 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 2020 to 2021.
- Table 50 Number and percentage of people with type 1 or type 2 diabetes with a record of HbA<sub>1c</sub> within the previous 15 months, by diabetes type and NHS board, ranked by decreasing percentage of people with type 2 diabetes, Scotland 2021.
- Figure 23 Type 1 diabetes: Percentage of people of all ages with a recorded HbA<sub>1c</sub> in the previous 15 months, in each HbA<sub>1c</sub> category, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/ mol and proportions with HbA<sub>1c</sub> not recorded, Scotland 2021.
- Figure 24 Distribution of HbA<sub>1c</sub> category for people with type 1 diabetes over 18 years old regardless of duration of diabetes by NHS board, Scotland 2021.
- Figure 25 Proportions of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 1 diabetes aged over 18 years old for people with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.
- Figure 26 Type 2 diabetes: Percentage of people of all ages with a recorded HbA<sub>1c</sub> in the previous 15 months, in each HbA<sub>1c</sub> category, by NHS board, ranked by decreasing percentage of those with a recorded HbA<sub>1c</sub> under 58 mmol/mol, Scotland 2021.
- Figure 27 Distribution of HbA<sub>1c</sub> category for people with type 2 and other diabetes aged over 18 years old by NHS board, Scotland 2021.
- Figure 28 Proportions of people with HbA<sub>1c</sub><58 mmol/mol one year (+/- 90 days) after diagnosis of type 2 and other diabetes aged over 18 years old and with HbA<sub>1c</sub> data available by NHS board, Scotland 2021.

- Figure 29 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 2021.
- Figure 30 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 2021.
- Figure 31 Type 1 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2020 to 2021.
- Figure 32 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 2021.
- Figure 33 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 2021.
- Figure 34 Type 2 diabetes: Percentage of people with SBP  $\leq 140$  mmHg, Scotland, from 2020 to 2021.
- Figure 35 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 2021.
- Figure 36 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 2021.
- Figure 37 Percentage of people with diabetes (type 1 and type 2 combined) with a record of cholesterol within the previous 15 months, Scotland, from 2020 to 2021.
- Figure 38 Type 1 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 2021.
- Figure 39 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 2021.
- Figure 40 Percentage of people with diabetes (type 1 and type 2 combined) with cholesterol  $\leq 5$  mmol/l within the previous 15 months, Scotland, from 2020 to 2021.
- Figure 41 Proportion of people recorded as having type 1 or type 2 diabetes (combined) who had a record of BMI, Scotland, from 2020 to 2021.

- Figure 42 Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 1 aged 18+ years with BMI recorded by NHS board, Scotland 2021.
- Figure 43 Significant weight loss among people with BMI  $\geq 30$  kg/m<sup>2</sup> - Type 2 and other aged 18+ years with BMI recorded by NHS board, Scotland 2021.
- Figure 44 Type 1 diabetes: Smoking status as a percentage of all those with a recorded smoking status, by NHS Health Board, ranked by current smoker percentage, Scotland 2021.
- Figure 45 Type 2 diabetes: Smoking status as a percentage of all those with a recorded smoking status, by NHS Health Board, ranked by current smoker percentage, Scotland 2021.
- Figure 46 Percentage of people with type 1 or type 2 diabetes aged 12 years or older 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 2021.
- Figure 47 Retinopathy screening within previous 15 months - Type 1 and other diabetes aged 12-17 years who have not been suspended from eye screening by NHS board, Scotland 2021.
- Figure 48 Retinopathy screening within previous 15 months - Type 1 diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.
- Figure 49 Retinopathy screening within previous 15 months - Type 2 and other diabetes aged 18+ years who have not been suspended from eye screening by NHS board, Scotland 2021.
- Figure 50 Disengaged from diabetes care - Type 1 aged 18-25 years by NHS board, Scotland 2021.
- Figure 51 Disengaged from diabetes care - Type 1 aged 26+ years by NHS board, Scotland 2021.
- Figure 52 Disengaged from diabetes care - Type 2 and other aged 18-25 years by NHS board, Scotland 2021.
- Figure 53 Disengaged from diabetes care - Type 2 and other aged 26+ years by NHS board, Scotland 2021.
- Figure 54 Attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.
- Figure 55 Record of having ever attended structured education - Type 1 aged 18+ years by NHS board, Scotland 2021.

Figure 56 Percentage of people with type 1 diabetes recorded as using a Flash Glucose Meter by NHS Board ranked by decreasing total percentage of users using a Flash Glucose Meter, Scotland 2021.

# 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 eHealth colleagues.

## Data Sources

SCI-Diabetes is used directly by many professionals, but it also receives data from a variety of data sources to maintain its shared electronic record for diabetes. A breakdown of the main sources in June 2022 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: 9 NHS boards linking to local patient administration system for admission, discharge and transfer data (TrakCare)
- Connected Ward Meters: 2 NHS boards linking ward-based blood glucose measurements. Priority implementation area for national diabetes inpatient management programme
- Scottish Ambulance Service: 2 NHS boards linking ambulance service data for ambulance callouts 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 92 Progress towards links from SCI Store to SCI-Diabetes, Scotland, June 2022.**

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 93 Progress towards links from Patient Administration Systems to SCI-Diabetes, Scotland, June 2022.**

NHS board	Implementation Requested	Status	Comments
Ayrshire and Arran	Yes	Live	TrakCare
Borders	Yes	Scheduled 2022	TrakCare
Dumfries and Galloway	Yes	Not scheduled	TOPAS
Fife	Yes	Live	TrakCare
Forth Valley	No	Live	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.

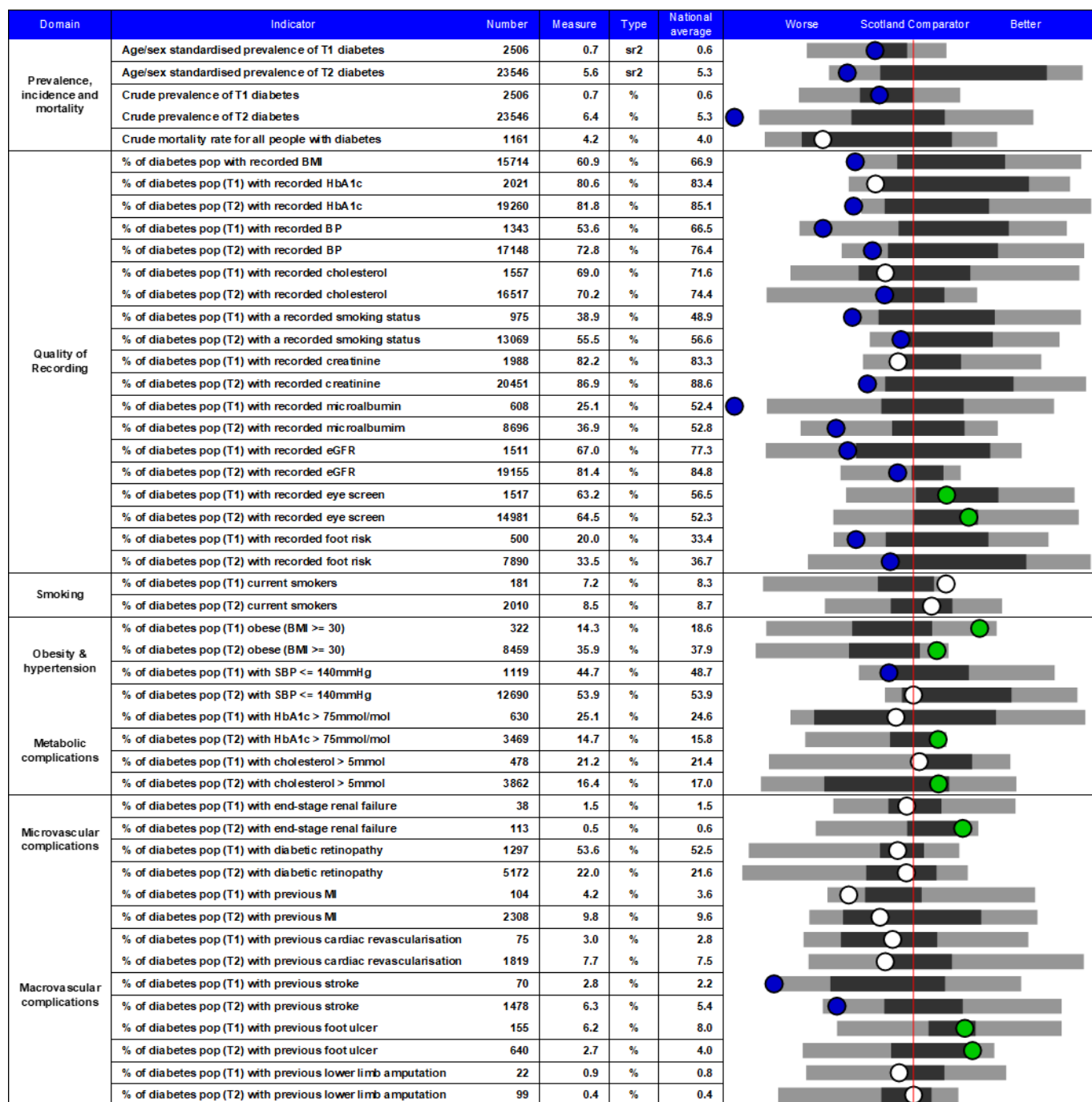
In addition to incoming feeds, SCI-Diabetes data are also transferred to external systems:

- 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: Spine Charts Displaying Health Board Performance

Diabetes Health Board Spine Chart (Ayrshire and Arran) 2021



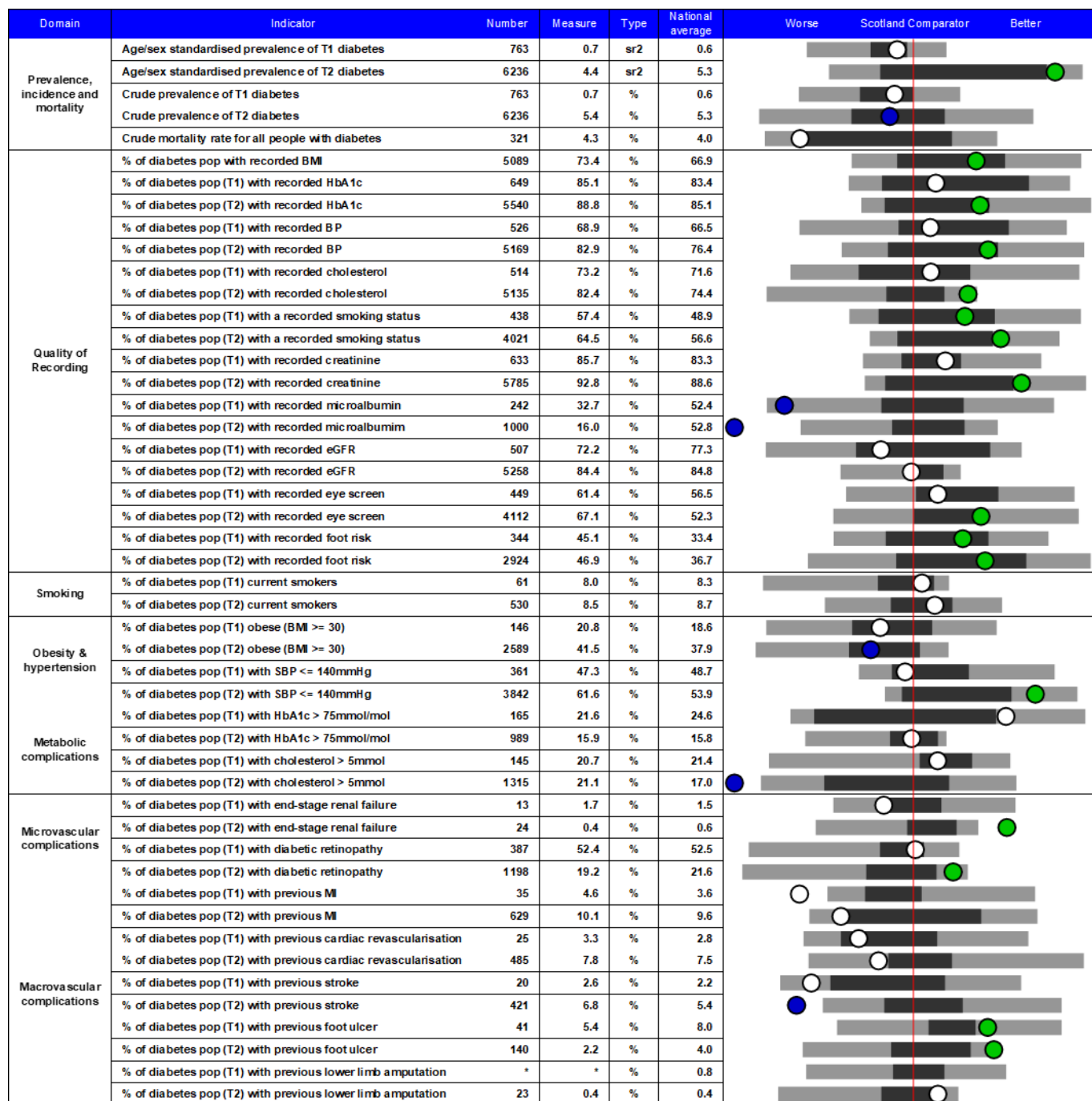
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

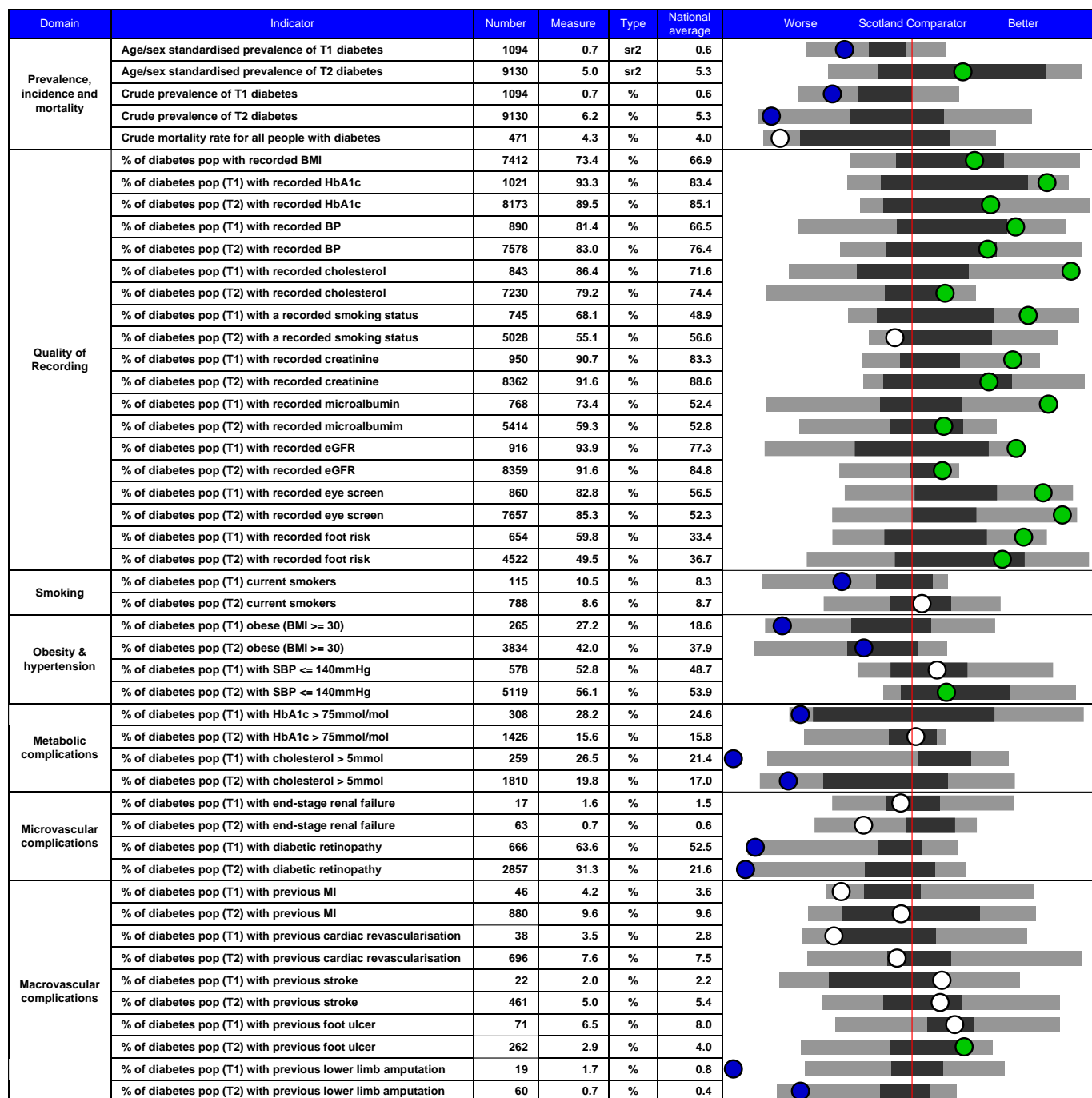


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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 (Dumfries and Galloway) 2021

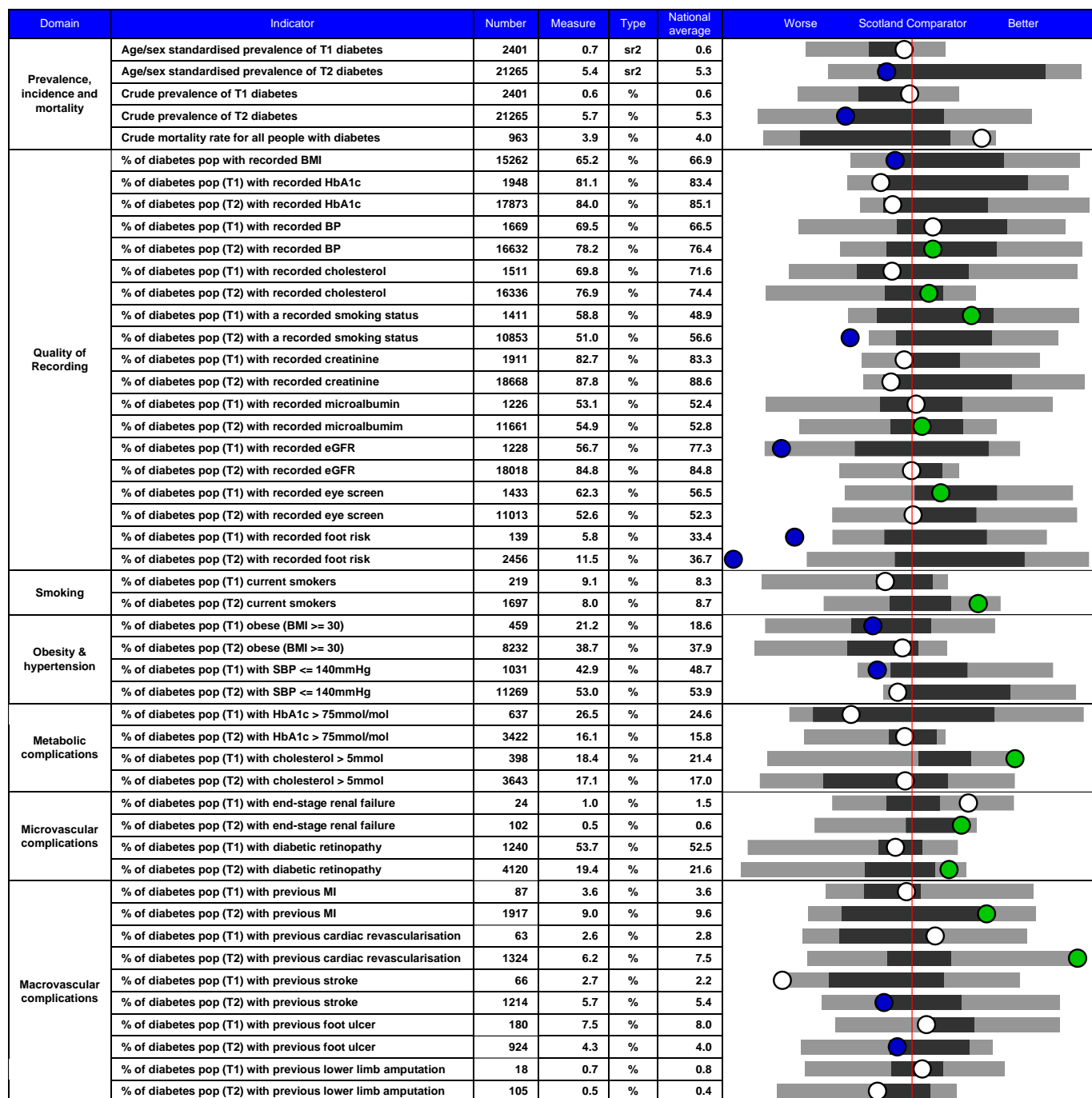


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

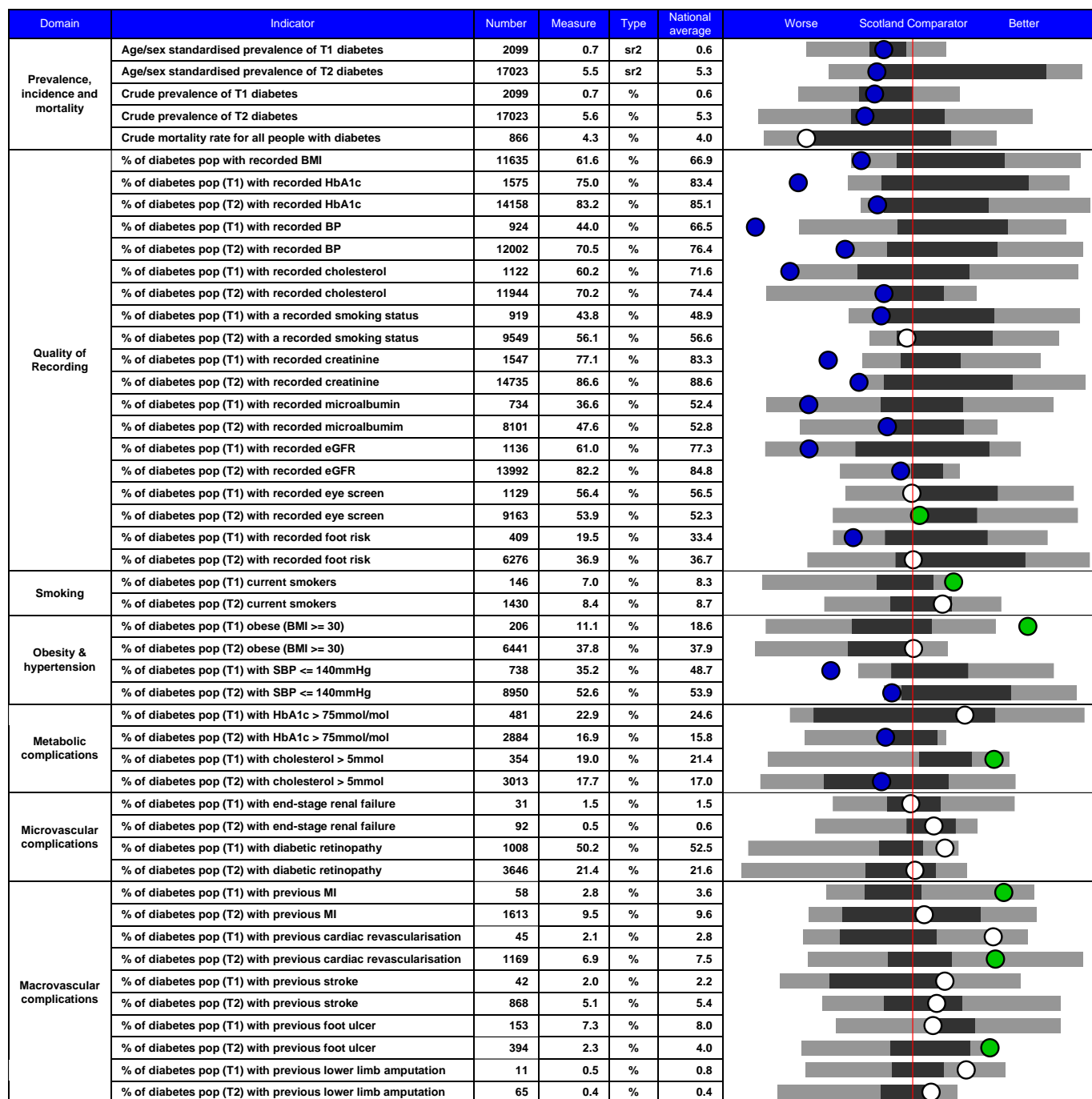


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

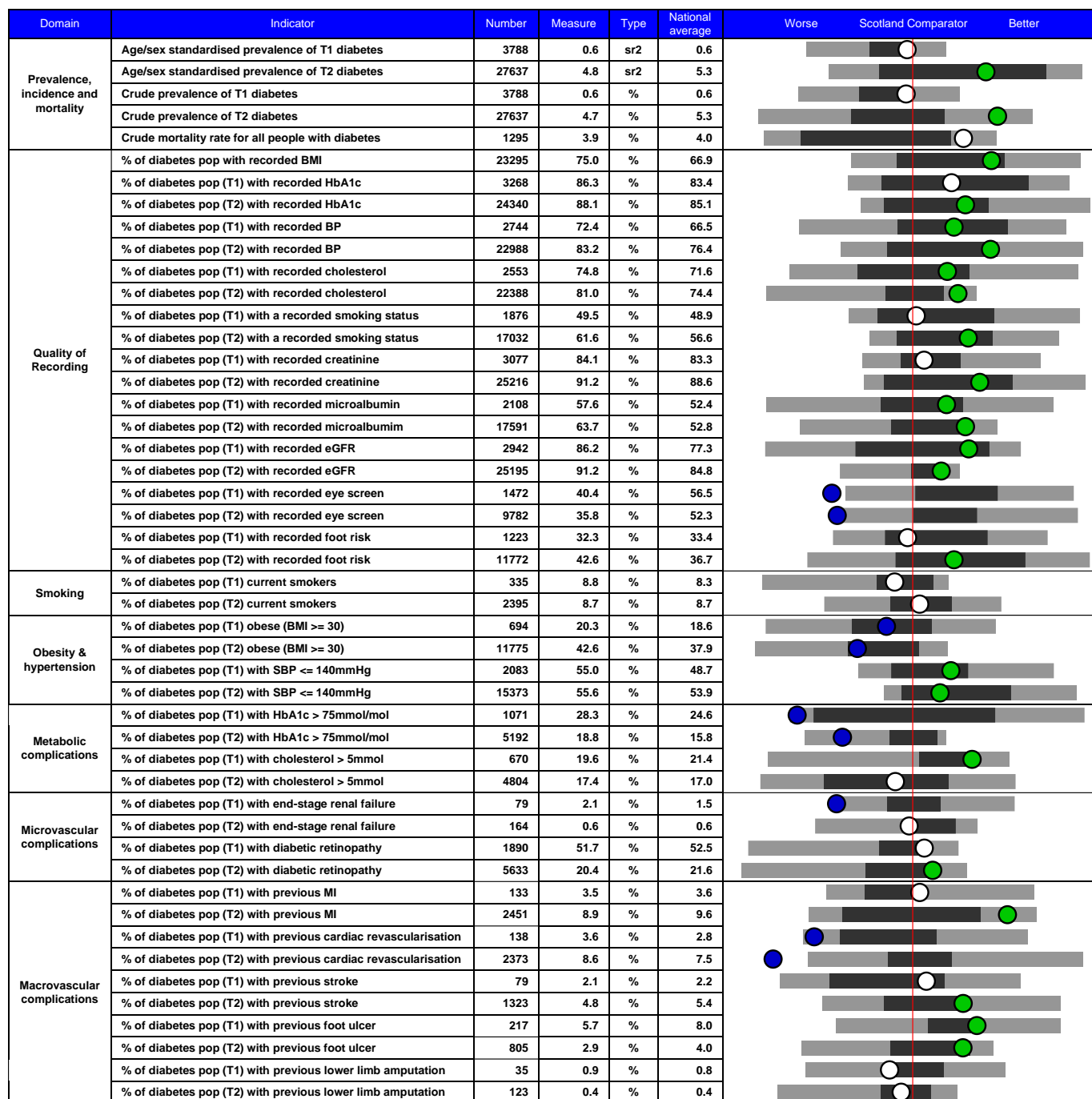


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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 (Grampian) 2021

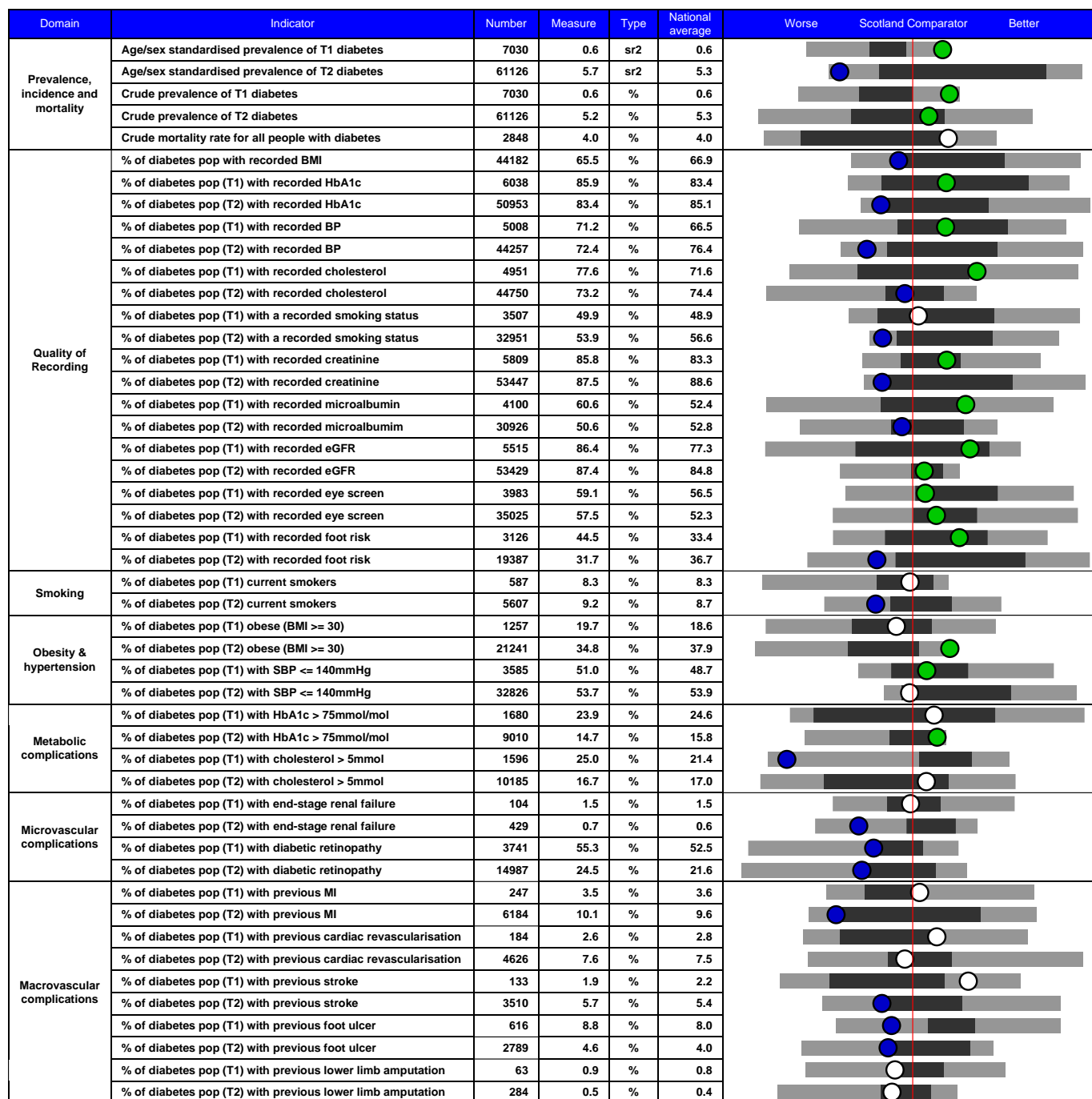


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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 (Greater Glasgow and Clyde) 2021



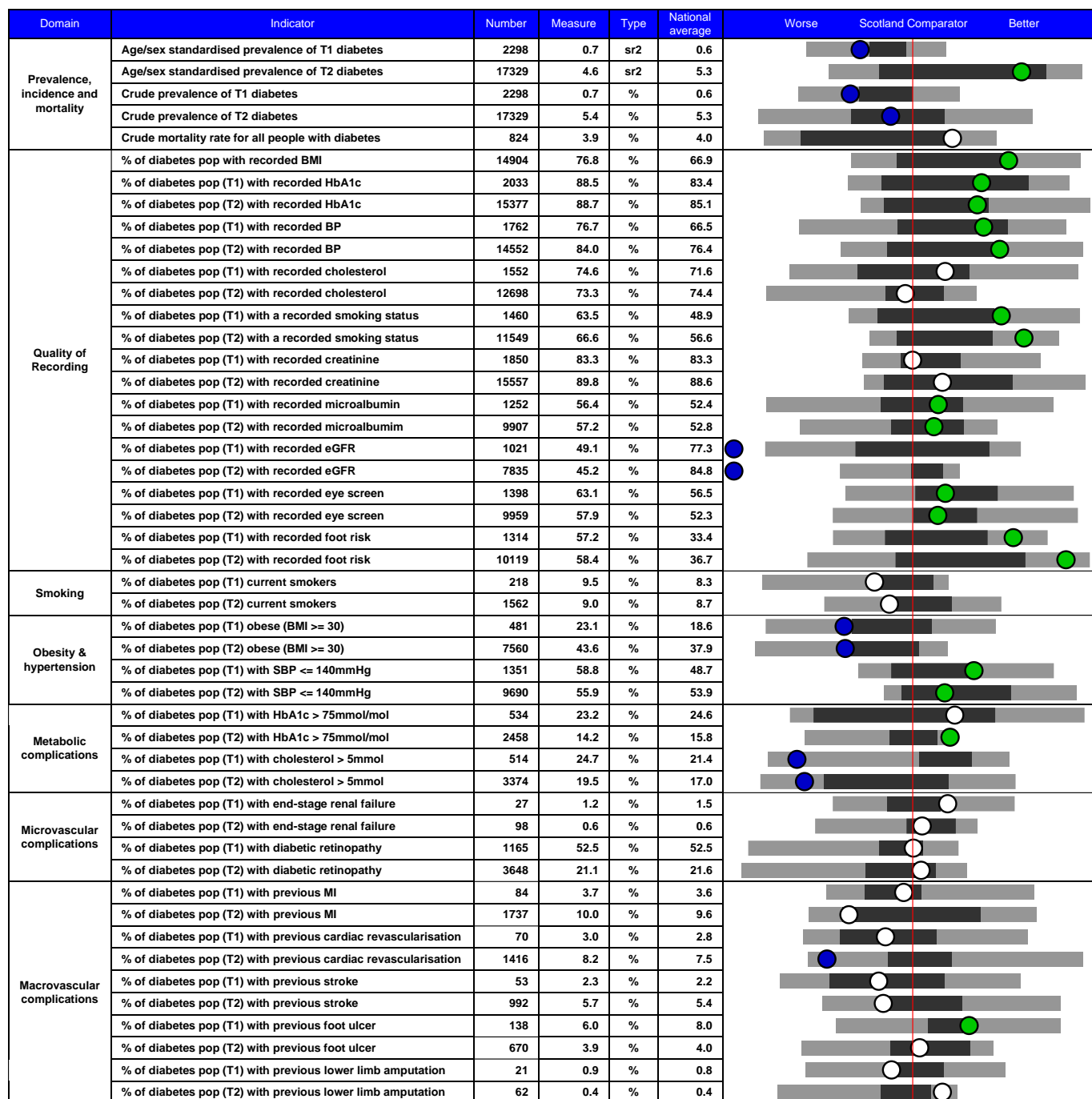
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

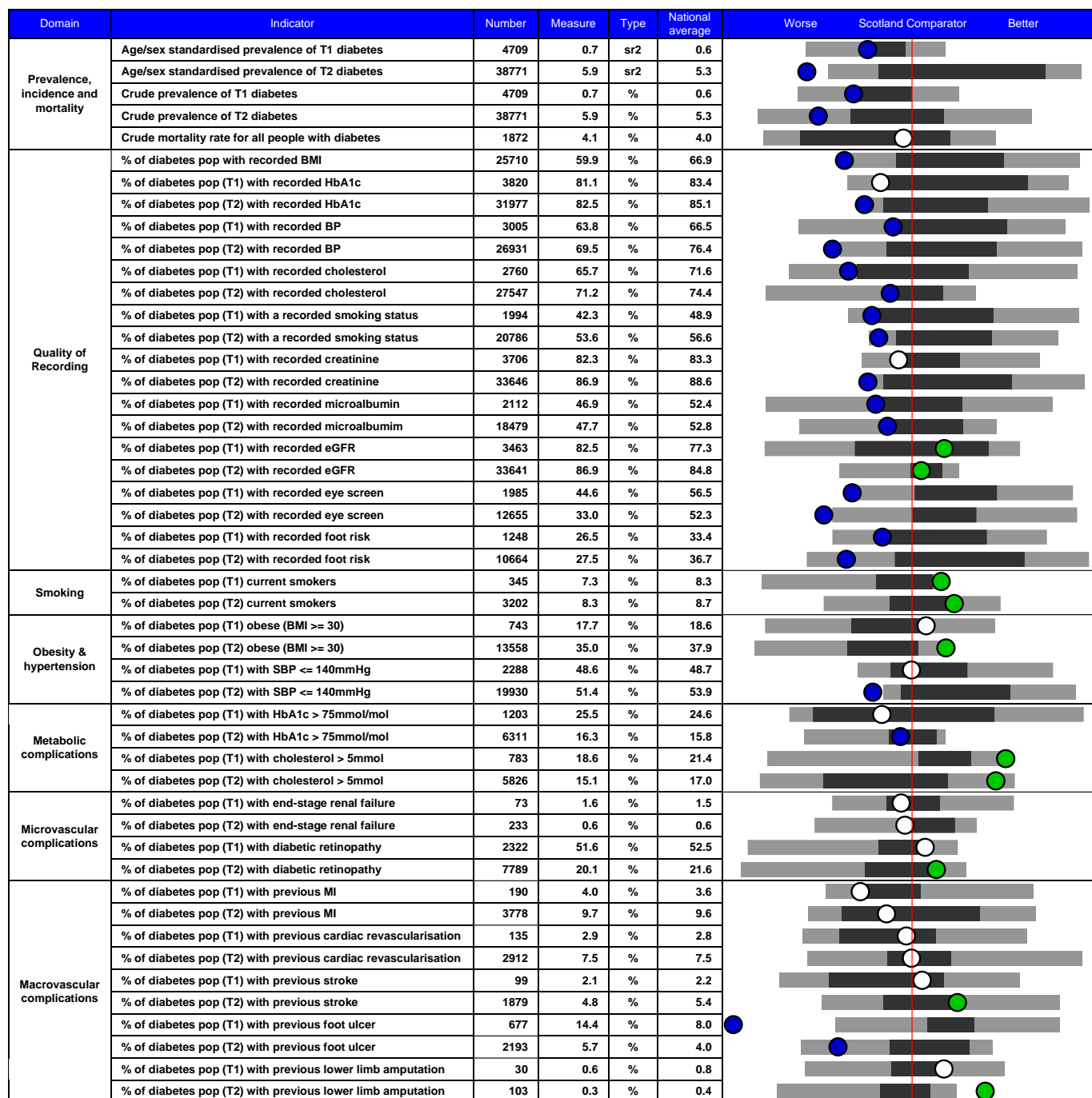


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021



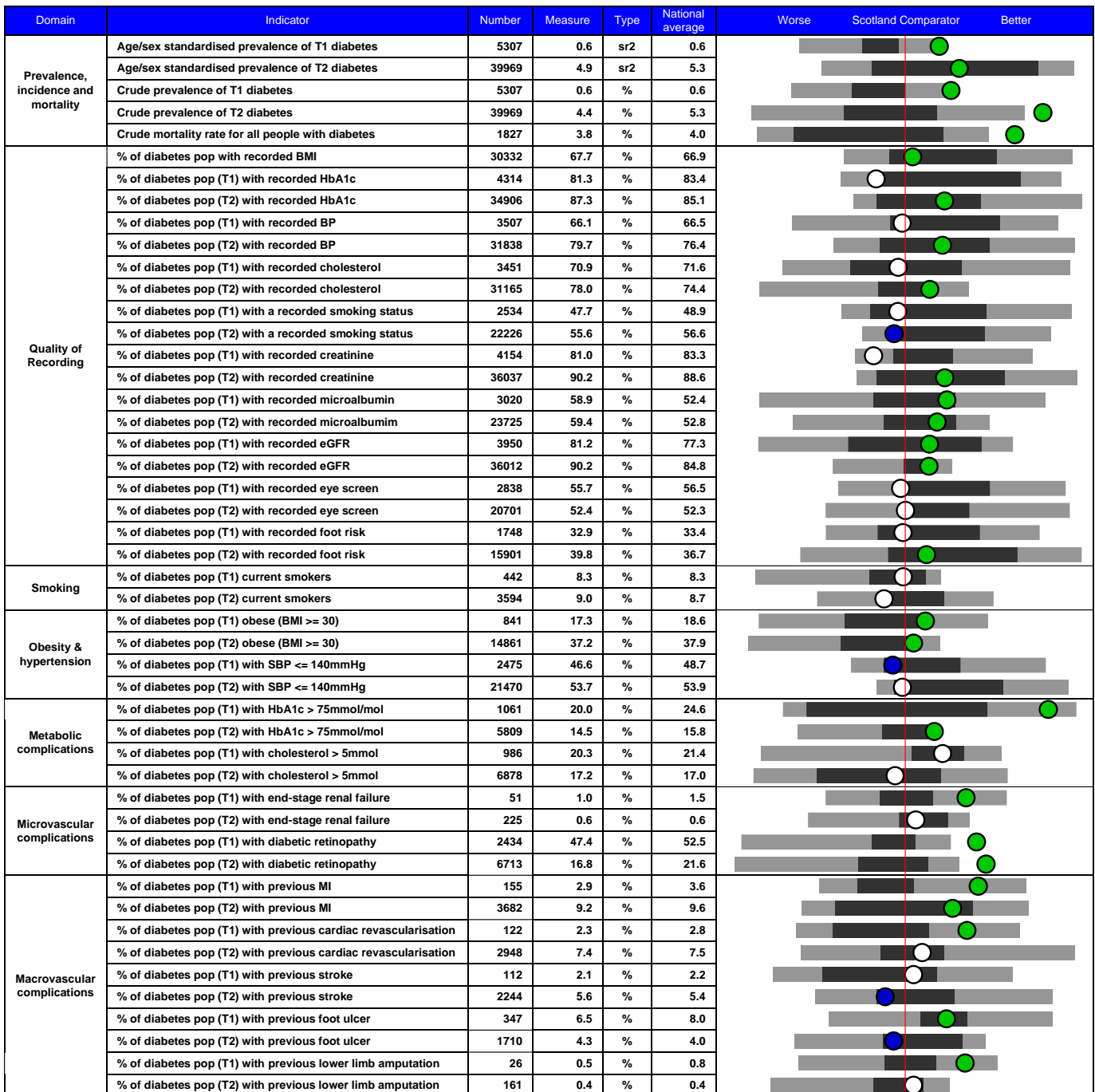
Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

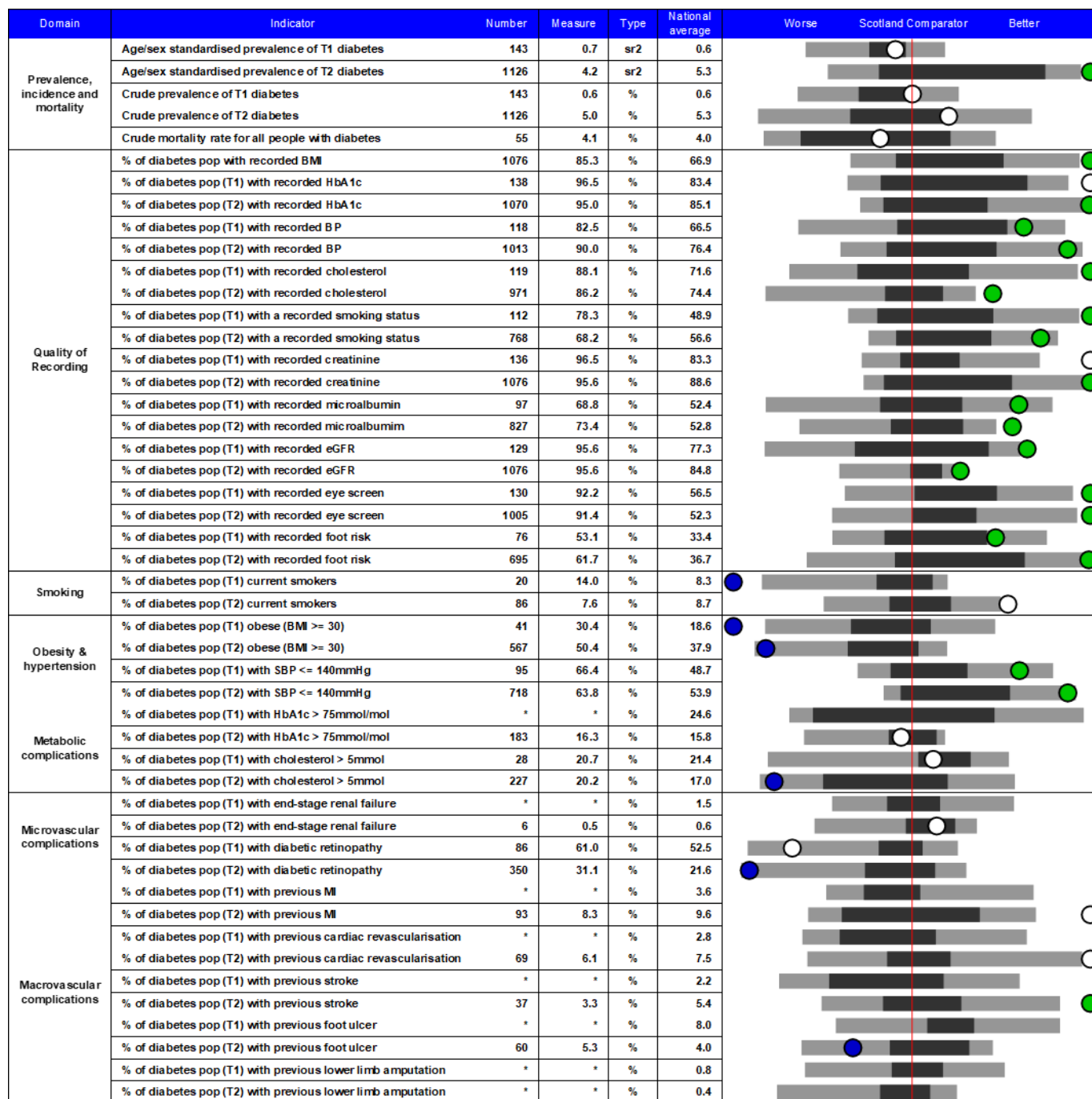


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

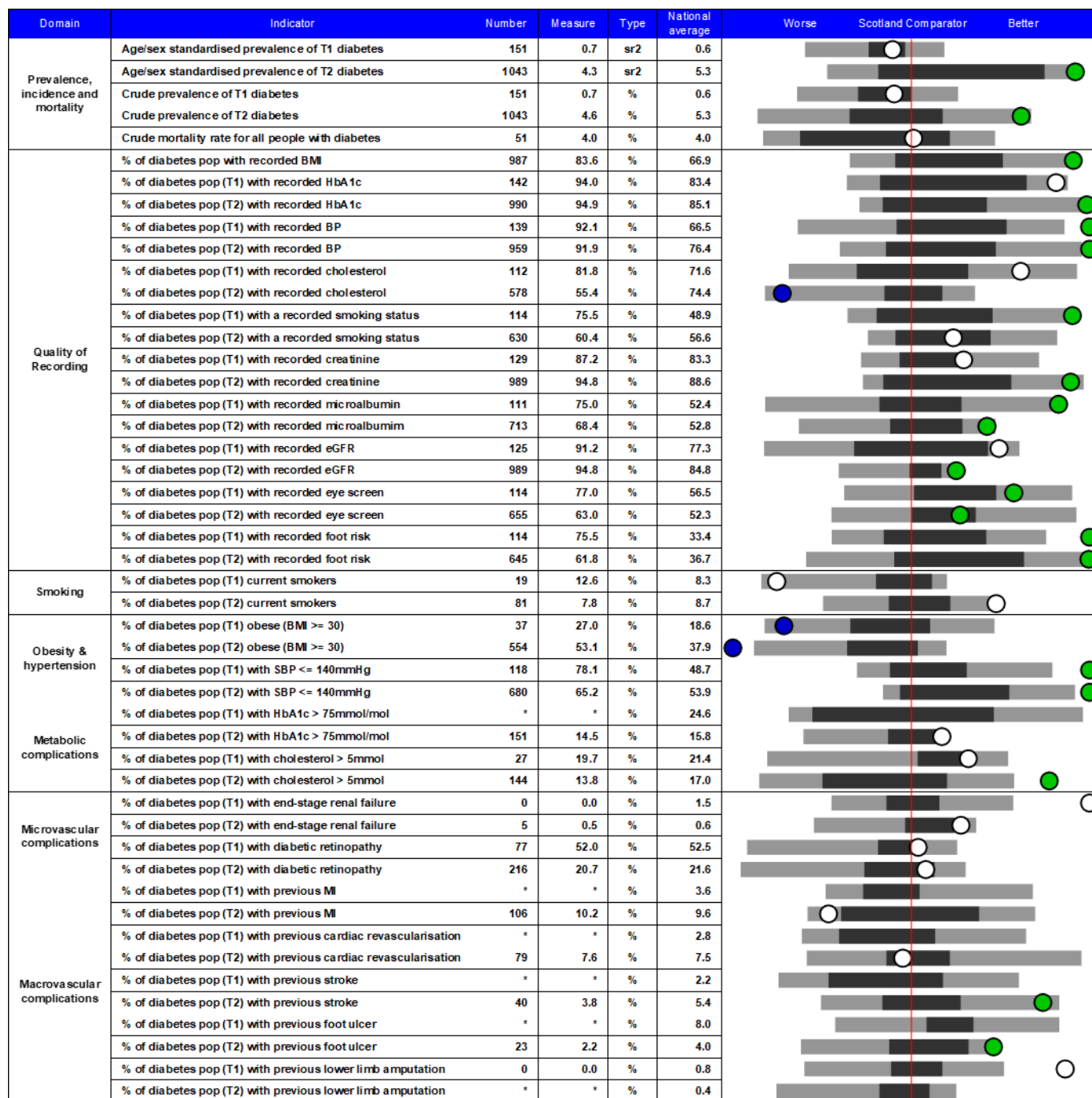


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

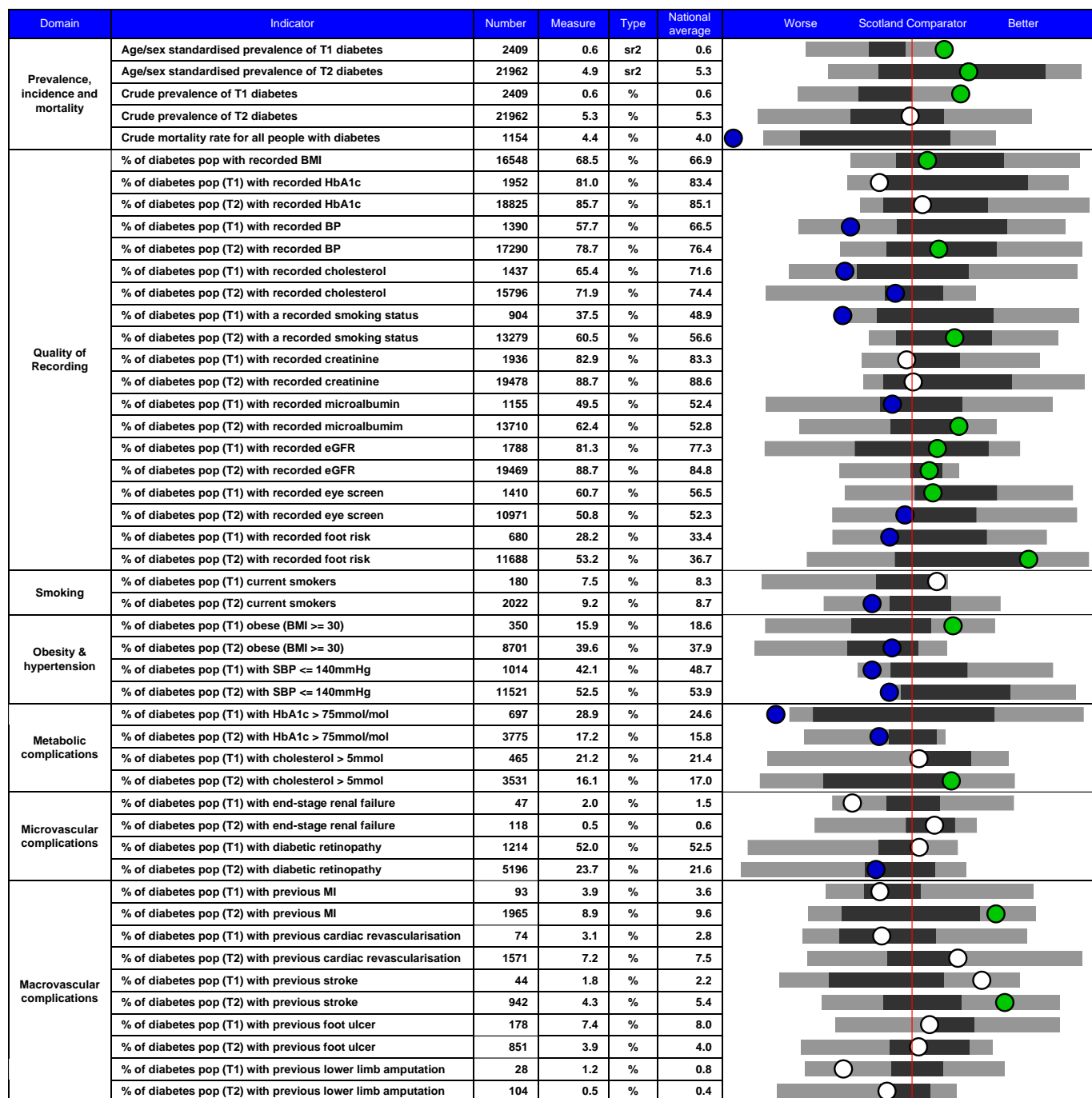


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021

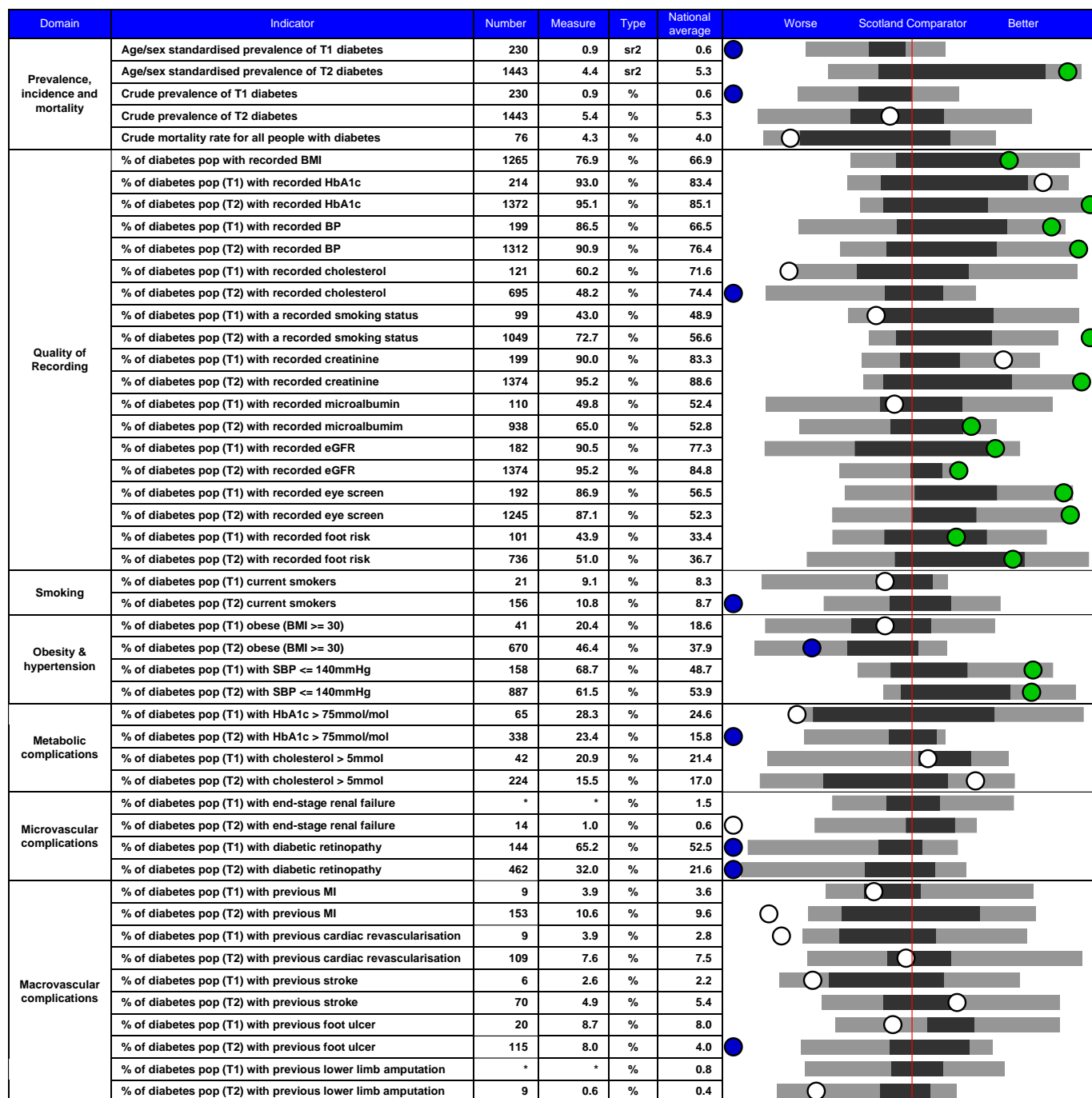


Spine chart key: % percent  
sr2=age-sex standardised rate per 100 population

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) 2021



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

## Appendix 3: Errata

The Scottish Diabetes Survey 2019 and the Scottish Diabetes Survey 2020 both included two tables with an incorrectly calculated "Foot risk score recorded" percentage (%) column. The error led to single-percentage overestimates of the percentage recorded for people with type 1 diabetes, and in some cases, fractional-percentage underestimates of the percentage recorded for people with type 2 diabetes. The correctly calculated values appear in Table 94.

**Table 94 Percentage of people with type 1 or type 2 diabetes and a foot risk score recorded in the previous 15 months, by NHS board, Scotland 2019-2020.**

NHS board	Recorded as having a foot risk score (by year)			
	Type 1 diabetes		Type 2 diabetes	
	2019 (%)	2020 (%)	2019 (%)	2020 (%)
Ayrshire and Arran	58.1	31.1	63.9	37.2
Borders	61.4	37.6	65.4	41.7
Dumfries and Galloway	62.0	43.6	70.1	48.5
Fife	47.3	21.0	57.5	26.0
Forth Valley	64.2	27.9	63.7	39.7
Grampian	56.2	34.5	71.7	42.1
Greater Glasgow and Clyde	56.5	36.3	61.8	34.4
Highland	66.1	53.1	75.4	56.2
Lanarkshire	52.8	26.9	57.1	31.6
Lothian	53.3	29.4	63.3	37.3
Orkney	68.8	60.3	79.0	60.1
Shetland	87.5	68.4	82.5	53.9
Tayside	56.8	32.1	75.9	50.4
Western Isles	58.5	31.4	72.6	39.0
<b>Scotland</b>	<b>56.5</b>	<b>33.1</b>	<b>64.7</b>	<b>38.5</b>

Note: The boards are ordered alphabetically by board, whereas the original tables were ordered by the percentage foot risk score.

A list of the affected tables ("Foot risk score recorded" percentage column in each):

- Scottish Diabetes Survey 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.

- Scottish Diabetes Survey 2020
  - Table 118, 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 2020.
  - Table 119, 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 2020