ARHAI Scotland

Antimicrobial Resistance and Healthcare Associated Infection

NHS National Services Scotland

Clostridioides difficile infection, *Escherichia coli* bacteraemia, *Staphylococcus aureus* bacteraemia and Surgical Site Infection in Scotland

July to September 2021

Publication date: 18 January 2022

This is an Official Statistics Publication

The Official Statistics (Scotland) Order 2008 authorises NHS National Services Scotland (the legal name being the Common Services Agency for the Scottish Health Service) to produce official statistics.

All official statistics should comply with the UK Statistics Authority's Code of Practice which promotes the production and dissemination of official statistics that inform decision making. They can be formally assessed by the UK Statistics Authority's regulatory arm for National Statistics status.

Find out more about the **Code of Practice**

Find out more about **official statistics**

Contents

Introduction

Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland provides a commentary on quarterly epidemiological data in Scotland for July to September (Q3) 2021 on the following:

- *Clostridioides difficile* infection
- *Escherichia coli* bacteraemia
- *Staphylococcus aureus* bacteraemia
- Surgical Site Infection

Data are provided for the 14 NHS boards and one NHS Special Health Board.

Main Points

Clostridioides difficile infection (CDI) during July to September 2021

- The total number of CDI cases in patients reported to ARHAI was 332.
- 243 CDI cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 16.7 cases per 100,000 total occupied bed days (TOBDs).
- 89 CDI cases were reported as community associated. This corresponds to an incidence rate of 6.5 cases per 100,000 population.
- NHS Ayrshire & Arran was above the 95% confidence interval upper limit for healthcare associated CDI in the funnel plot analysis.
- No NHS boards were above the 95% confidence interval upper limit for community associated CDI in the funnel plot analysis.
- No NHS boards were above normal variation for healthcare or community associated CDI when analysing trends over the past three years.

Escherichia coli bacteraemia (ECB) during July to September 2021

- The total number of ECB cases in patients reported to ARHAI was 1,169.
- 603 ECB cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 41.4 cases per 100,000 TOBDs.
- 566 ECB cases were reported as community associated. This corresponds to an incidence rate of 41.1 cases per 100,000 population.
- NHS Fife and NHS Forth Valley were above the 95% confidence interval upper limit for healthcare associated ECB in the funnel plot analysis.
- NHS Ayrshire and Arran were above the 95% confidence interval upper limit for community associated ECB in the funnel plot analysis.

- No NHS boards were above normal variation for healthcare or community associated ECB when analysing trends over the past three years.

Staphylococcus aureus bacteraemia (SAB) during July to September 2021

- The total number of SAB cases in patients reported to ARHAI was 399.
- 267 SAB cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 18.3 cases per 100,000 TOBDs.
- 132 SAB cases were reported as community associated. This corresponds to an incidence rate of 9.6 cases per 100,000 population.
- No NHS boards were above the 95% confidence interval upper limit for healthcare or community associated SAB in the funnel plot analysis.
- No NHS boards were above normal variation for community associated SAB when analysing trends over the past three years.

Surgical Site Infection (SSI) July to September 2021

Epidemiological data for SSI are not included for this quarter due to the pausing of surveillance to support the COVID-19 response.

Results and Commentary

Clostridioides difficile Infection (CDI)

Total Cases for Quarter

- During Q3 2021, 332 *Clostridioides difficile* infection (CDI) cases in patients were reported to ARHAI. In the previous quarter there were 277 cases.
- In the clinical surveillance typing scheme (covering severe cases and/or outbreaks) ribotype 002 (15.6%) was the most common ribotype isolated, followed by 020 (14.1%), 078 (9.4%), 014, 023, 026 (all 7.8%), 005, 056, 220 (all 4.7%), and 011, 015, 017 (all 3.1%) out of a total of 64 isolates. The remaining ribotypes comprise a mixture each with a prevalence of less than 3%. All clinical surveillance isolates tested were susceptible to metronidazole and vancomycin.
- In the snapshot surveillance (which reflects the general distribution of ribotypes among all CDI cases), ribotype 014 was the most common (12.7%) followed by 002, 005, 015, 078 (all 9.9%), 056 (7.0%), 020 (5.6%), and 026, 220 (both 4.2%) out of a total of 71 isolates. The remaining ribotypes comprise a mixture each with a prevalence of less than 3%. All snapshot surveillance isolates tested were susceptible to both metronidazole and vancomycin.

Healthcare associated infection cases by health board where specimen taken

- During Q3 2021, 243 CDI cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 16.7 cases per 100,000 total occupied bed days (TOBDs) (**Table 1**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was an increase in NHS Ayrshire & Arran (**Table 2**).
- NHS Ayrshire & Arran was above the 95% confidence interval upper limit in the funnel plot analysis (**Figure 1**).

- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data**).

Community associated infection cases by health board of residence

- During Q3 2021, 89 CDI cases were reported as community associated. This corresponds to an incidence rate of 6.5 cases per 100,000 population (**Table 3**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was no increase or decrease in NHS boards or Scotland overall. (**Table 4**).
- No NHS boards were above the 95% confidence interval upper limit in the funnel plot analysis (**Figure 2**).
- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data**).

Table 1: CDI cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2]

NHS Board	Q2 Cases	Q2 Bed Days	Q2 Rate	Q3 Cases	Q3 Bed Days	Q3 Rate
AA	21	102,178	20.6	29	108,269	26.8
BR	2	29,586	6.8	3	29,640	10.1
DG	6	40,199	14.9	10	42,178	23.7
FF	8	79,787	10.0	8	84,518	9.5
FV	7	68,278	10.3	8	69,862	11.5
GJ	0	12,350	0.0	0	12,063	0.0
GR	11	115,651	9.5	14	121,265	11.5
GGC	66	396,839	16.6	74	413,139	17.9
HG	16	65,070	24.6	13	70,337	18.5
LN	24	135,443	17.7	29	140,006	20.7
LO	30	232,475	12.9	43	241,844	17.8
OR	0	2,939	0.0	0	2,696	0.0
SH	2	2,025	98.8	1	2,456	40.7
TY	10	105,386	9.5	11	112,116	9.8
WI	0	6,022	0.0	0	5,975	0.0
Scotland	**203**	**1,394,228**	**14.6**	**243**	**1,456,364**	**16.7**

1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
2. Figures include any updates received following the last publication (see Appendix 2).

Table 2: CDI cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Bed Days	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Bed Days	YE Q3 21 Rate
AA	71	398,522	17.8	105	412,612	↑ 25.4
BR	12	104,201	11.5	8	114,555	7.0
DG	31	154,607	20.1	32	157,057	20.4
FF	31	318,170	9.7	33	320,523	10.3
FV	39	273,013	14.3	33	277,191	11.9
GJ	4	40,742	9.8	4	47,818	8.4
GR	61	471,190	12.9	59	456,334	12.9
GGC	261	1,525,223	17.1	264	1,584,676	16.7
HG	51	255,227	20.0	53	264,966	20.0
LN	93	510,747	18.2	108	529,690	20.4
LO	135	889,646	15.2	133	926,920	14.3
OR	0	10,901	0.0	0	11,864	0.0
SH	4	8,869	45.1	4	8,705	46.0
TY	28	410,694	6.8	42	425,219	9.9
WI	4	20,593	19.4	3	22,942	13.1
Scotland	**825**	**5,392,345**	**15.3**	**881**	**5,561,072**	**15.8**

1. An arrow denotes statistically significant change.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 3: CDI cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2,3,4]

NHS Board	Q2 Cases	Q2 Population	Q2 Rate	Q3 Cases	Q3 Population	Q3 Rate
AA	7	367,990	7.6	9	367,990	9.7
BR	1	115,240	3.5	1	115,240	3.4
DG	9	148,290	24.3	2	148,290	5.4
FF	4	374,130	4.3	4	374,130	4.2
FV	2	305,930	2.6	0	305,930	0.0
GR	3	585,550	2.1	8	585,550	5.4
GGC	17	1,185,240	5.8	21	1,185,240	7.0
HG	6	320,860	7.5	6	320,860	7.4
LN	7	661,960	4.2	9	661,960	5.4
LO	13	912,490	5.7	22	912,490	9.6
OR	1	22,400	17.9	1	22,400	17.7
SH	0	22,870	0.0	0	22,870	0.0
TY	4	416,550	3.9	5	416,550	4.8
WI	0	26,500	0.0	1	26,500	15.0
Scotland	**74**	**5,466,000**	**5.4**	**89**	**5,466,000**	**6.5**

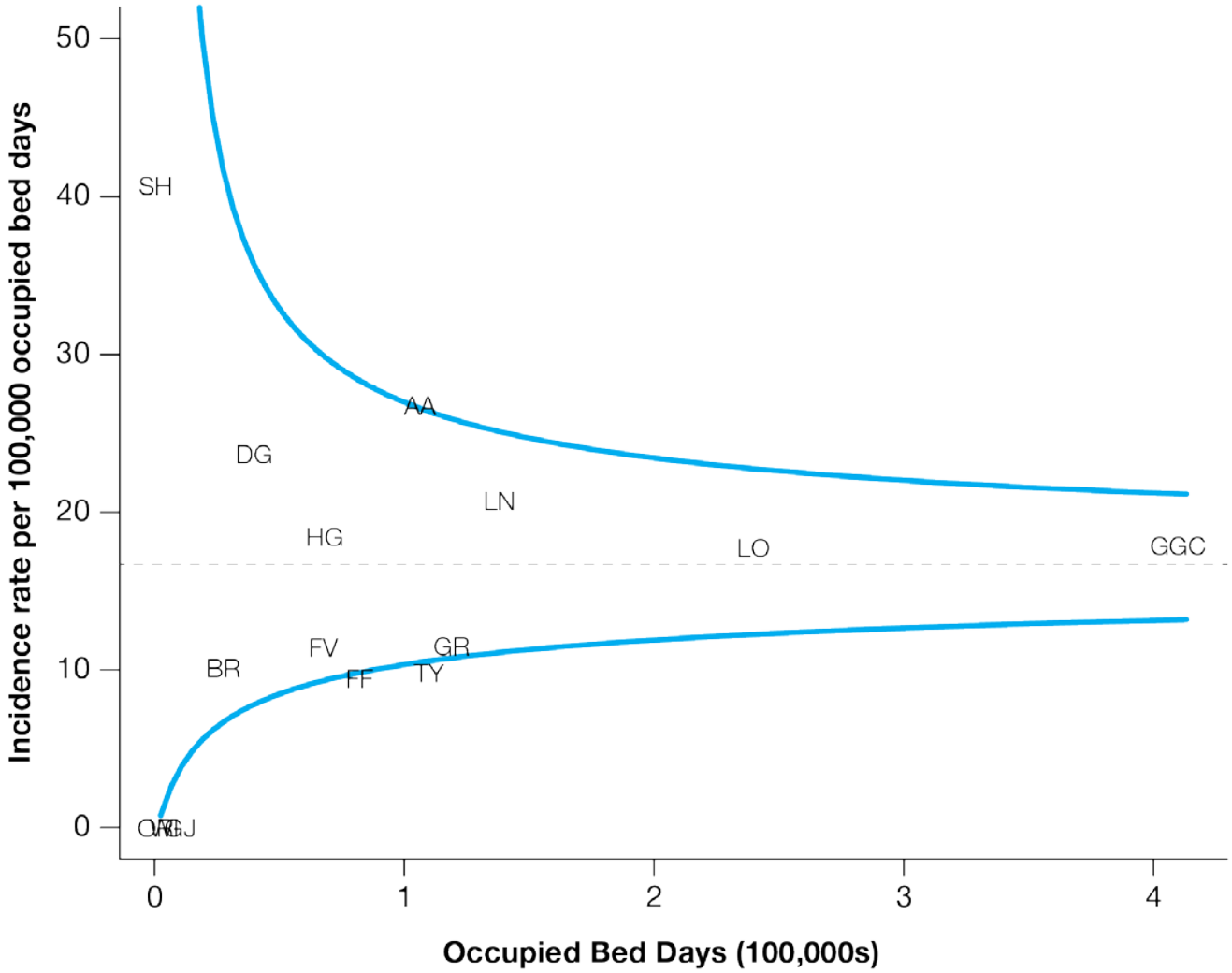
1. Quarterly population rates are based on an annualised population.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 4: CDI cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Population	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Population	YE Q3 21 Rate
AA	30	367,990	8.2	30	367,990	8.2
BR	9	115,240	7.8	2	115,240	1.7
DG	12	148,290	8.1	14	148,290	9.4
FF	12	374,130	3.2	15	374,130	4.0
FV	4	305,930	1.3	3	305,930	1.0
GR	38	585,550	6.5	28	585,550	4.8
GGC	40	1,185,240	3.4	55	1,185,240	4.6
HG	23	320,860	7.2	18	320,860	5.6
LN	36	661,960	5.4	30	661,960	4.5
LO	57	912,490	6.2	51	912,490	5.6
OR	2	22,400	8.9	3	22,400	13.4
SH	1	22,870	4.4	1	22,870	4.4
TY	12	416,550	2.9	16	416,550	3.8
WI	3	26,500	11.3	2	26,500	7.5
Scotland	**279**	**5,466,000**	**5.1**	**268**	**5,466,000**	**4.9**

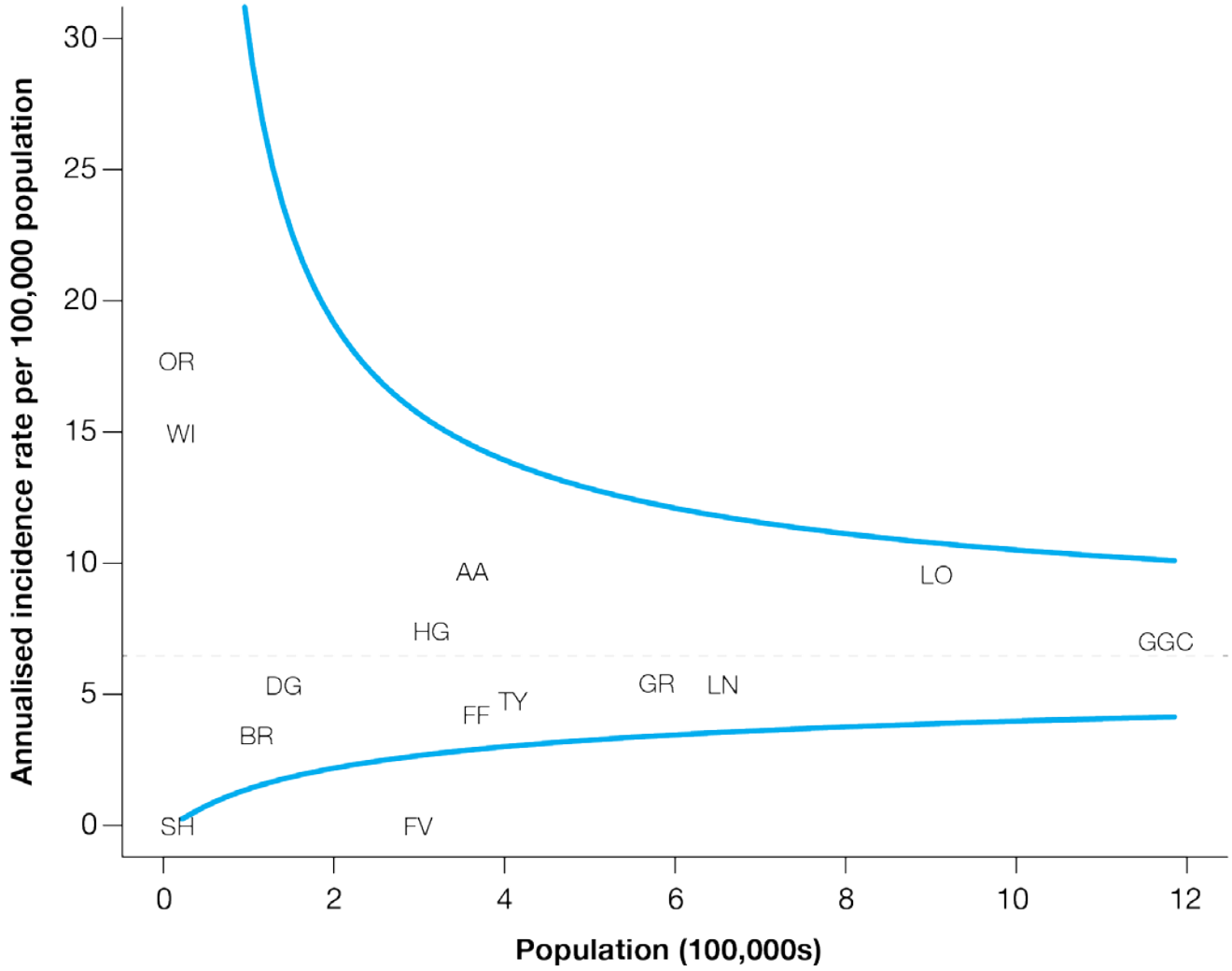
1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
2. Figures include any updates received following the last publication (see Appendix 2).

Figure 1: Funnel plot of CDI incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in Q3 2021.[1,2]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
2. NHS Golden Jubilee, NHS Orkney and NHS Western Isles overlap.

Figure 2: Funnel plot of CDI incidence rates (per 100,000 population) in community associated infection cases for all NHS boards in Scotland in Q3 2021.[1,2]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.

Escherichia coli bacteraemia (ECB)

Total Cases for Quarter

- During Q3 2021, 1,169 *Escherichia coli* bacteraemia (ECB) cases in patients were reported to ARHAI. In the previous quarter there were 1,103 cases.

Healthcare associated infection cases by health board where specimen taken

- During Q3 2021, 603 ECB cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 41.4 cases per 100,000 TOBDs (**Table 5**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was a decrease in NHS Lanarkshire (**Table 6**).
- NHS Fife and NHS Forth Valley were above the 95% confidence interval upper limit in the funnel plot analysis **(Figure 3**).
- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data**).

Community associated infection cases by health board of residence

- During Q3 2021, 566 ECB cases were reported as community associated. This corresponds to an incidence rate of 41.1 cases per 100,000 population (**Table 7**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was a decrease in NHS Forth Valley, and an increase in NHS Lothian. (**Table 8**).
- NHS Ayrshire & Arran was above the 95% confidence interval upper limit in the funnel plot analysis (**Figure 4**).
- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data**).

Table 5: ECB cases and incidence rates (per 100,000 TOBD) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2,3]

NHS Board	Q2 Cases	Q2 Bed Days	Q2 Rate	Q3 Cases	Q3 Bed Days	Q3 Rate
AA	50	102,178	48.9	53	108,269	49.0
BR	19	29,586	64.2	14	29,640	47.2
DG	15	40,199	37.3	22	42,178	52.2
FF	30	79,787	37.6	51	84,518	60.3
FV	32	68,278	46.9	47	69,862	67.3
GJ	1	12,350	8.1	2	12,063	16.6
GR	42	115,651	36.3	43	121,265	35.5
GGC	150	396,839	37.8	140	413,139	33.9
HG	20	65,070	30.7	17	70,337	24.2
LN	45	135,443	33.2	63	140,006	45.0
LO	80	232,475	34.4	82	241,844	33.9
OR	2	2,939	68.1	2	2,696	74.2
SH	2	2,025	98.8	1	2,456	40.7
TY	43	105,386	40.8	61	112,116	54.4
WI	1	6,022	16.6	5	5,975	83.7
Scotland	**532**	**1,394,228**	**38.2**	**603**	**1,456,364**	**41.4**

1. An arrow denotes statistically significant change.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 6: ECB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Bed days	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Bed days	YE Q3 21 Rate
AA	192	398,522	48.2	200	412,612	48.5
BR	51	104,201	48.9	54	114,555	47.1
DG	54	154,607	34.9	62	157,057	39.5
FF	154	318,170	48.4	137	320,523	42.7
FV	150	273,013	54.9	147	277,191	53.0
GJ	3	40,742	7.4	4	47,818	8.4
GR	189	471,190	40.1	172	456,334	37.7
GGC	541	1,525,223	35.5	571	1,584,676	36.0
HG	66	255,227	25.9	74	264,966	27.9
LN	250	510,747	48.9	215	529,690	↓ 40.6
LO	304	889,646	34.2	304	926,920	32.8
OR	3	10,901	27.5	7	11,864	59.0
SH	6	8,869	67.7	8	8,705	91.9
TY	168	410,694	40.9	192	425,219	45.2
WI	9	20,593	43.7	11	22,942	47.9
Scotland	**2,140**	**5,392,345**	**39.7**	**2,158**	**5,561,072**	**38.8**

1. An arrow denotes statistically significant change.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 7: ECB cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2,3,4]

NHS Board	Q2 Cases	Q2 Population	Q2 Rate	Q3 Cases	Q3 Population	Q3 Rate
AA	51	367,990	55.6	59	367,990	63.6
BR	10	115,240	34.8	18	115,240	62.0
DG	25	148,290	67.6	22	148,290	58.9
FF	30	374,130	32.2	40	374,130	42.4
FV	24	305,930	31.5	24	305,930	31.1
GR	61	585,550	41.8	42	585,550	28.5
GGC	125	1,185,240	42.3	126	1,185,240	42.2
HG	32	320,860	40.0	24	320,860	29.7
LN	77	661,960	46.7	83	661,960	49.7
LO	76	912,490	33.4	83	912,490	36.1
OR	4	22,400	71.6	2	22,400	35.4
SH	3	22,870	52.6	1	22,870	17.3
TY	45	416,550	43.3	39	416,550	37.1
WI	8	26,500	121.1	3	26,500	44.9
Scotland	**571**	**5,466,000**	**41.9**	**566**	**5,466,000**	**41.1**

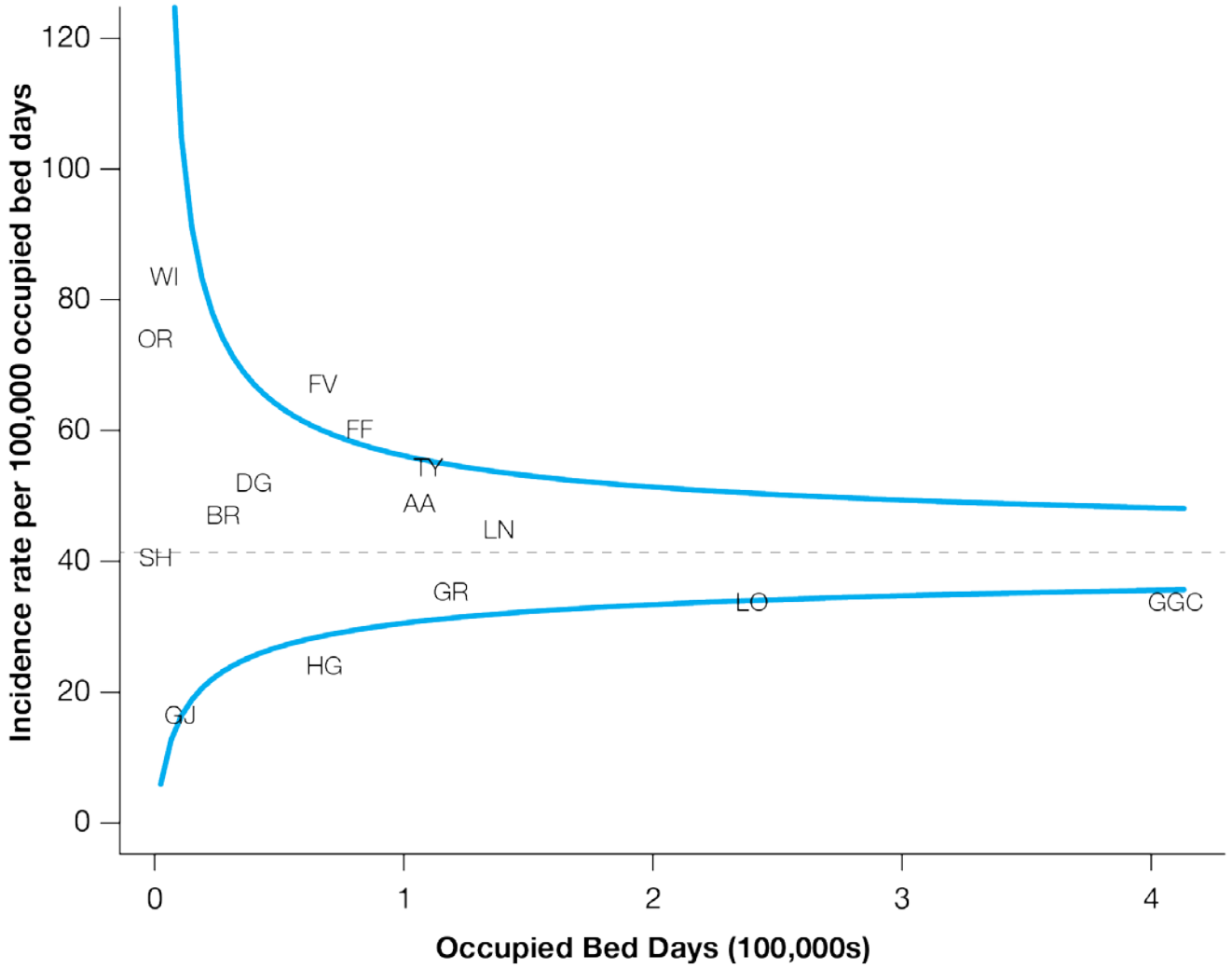
1. Quarterly population rates are based on an annualised population.
2. An arrow denotes statistically significant change.
3. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
4. Figures include any updates received following the last publication (see Appendix 2).

Table 8: ECB cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Population	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Population	YE Q3 21 Rate
AA	202	367,990	54.9	208	367,990	56.5
BR	40	115,240	34.7	46	115,240	39.9
DG	86	148,290	58.0	91	148,290	61.4
FF	145	374,130	38.8	128	374,130	34.2
FV	177	305,930	57.9	132	305,930	↓ 43.1
GR	170	585,550	29.0	186	585,550	31.8
GGC	437	1,185,240	36.9	425	1,185,240	35.9
HG	121	320,860	37.7	107	320,860	33.3
LN	331	661,960	50.0	299	661,960	45.2
LO	264	912,490	28.9	328	912,490	↑ 35.9
OR	7	22,400	31.3	11	22,400	49.1
SH	8	22,870	35.0	6	22,870	26.2
TY	175	416,550	42.0	168	416,550	40.3
WI	21	26,500	79.2	16	26,500	60.4
Scotland	**2,184**	**5,466,000**	**40.0**	**2,151**	**5,466,000**	**39.4**

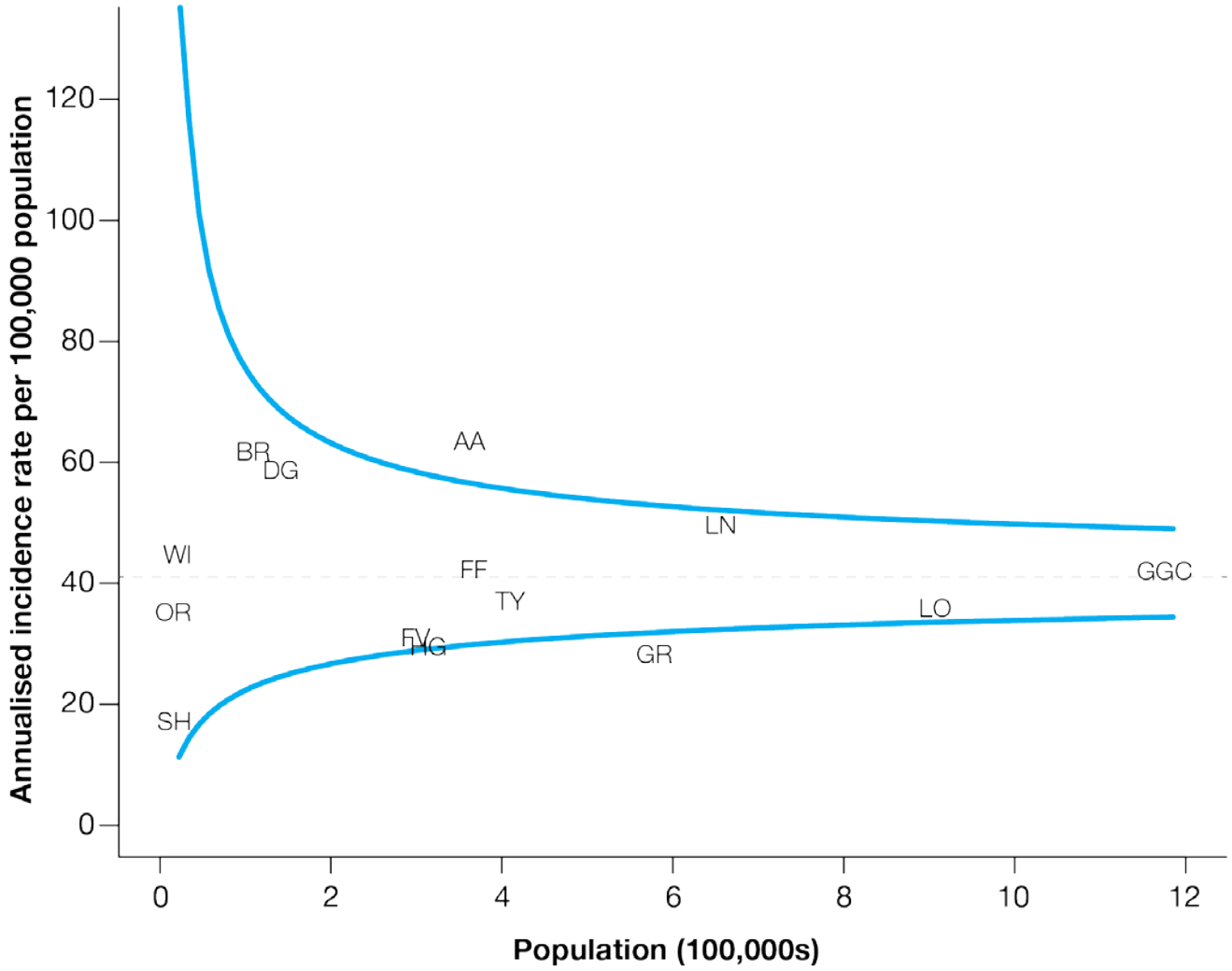
1. An arrow denotes statistically significant change.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
3. Figures include any updates received following the last publication (see Appendix 2).

Figure 3: Funnel plot of ECB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in Q3 2021.[1]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.

Figure 4: Funnel plot of ECB incidence rates (per 100,000 population) in community associated infection cases for all NHS boards in Scotland in Q3 2021.[1]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.

Staphylococcus aureus bacteraemia (SAB)

Total cases for quarter

- During Q3 2021, 399 *Staphylococcus aureus* bacteraemia (SAB) cases were reported to ARHAI. In the previous quarter there were 408 SAB cases.

Healthcare associated infection cases by health board where specimen taken

- During Q3 2021, 267 SAB cases were reported to ARHAI as healthcare associated. This corresponds to an incidence rate of 18.3 cases per 100,000 TOBDs (**Table 9**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was an increase in NHS Highland (**Table 10**).
- No NHS boards were above the 95% confidence interval upper limit in the funnel plot analysis (**Figure 5**).
- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data)**.

Community associated infection cases by health board of residence

- During Q3 2021, 132 SAB cases were reported as community associated. This corresponds to an incidence rate of 9.6 cases per 100,000 population (**Table 11**).
- Yearly trends (comparing year-ending September 2020 with year-ending September 2021) show that there was no increase or decrease in NHS boards or Scotland overall (**Table 12**).
- No NHS boards were above the 95% confidence interval upper limit in the funnel plot analysis (**Figure 6**).
- No NHS boards were above normal variation when analysing trends over the past three years (see **supplementary data**).

Table 9: SAB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2,3]

NHS Board	Q2 Cases	Q2 Bed Days	Q2 Rate	Q3 Cases	Q3 Bed Days	Q3 Rate
AA	18	102,178	17.6	17	108,269	15.7
BR	6	29,586	20.3	7	29,640	23.6
DG	10	40,199	24.9	6	42,178	14.2
FF	5	79,787	6.3	14	84,518	16.6
FV	11	68,278	16.1	16	69,862	22.9
GJ	5	12,350	40.5	3	12,063	24.9
GR	22	115,651	19.0	22	121,265	18.1
GGC	86	396,839	21.7	81	413,139	19.6
HG	10	65,070	15.4	8	70,337	11.4
LN	26	135,443	19.2	21	140,006	15.0
LO	36	232,475	15.5	44	241,844	18.2
OR	0	2,939	0.0	0	2,696	0.0
SH	0	2,025	0.0	2	2,456	81.4
TY	24	105,386	22.8	26	112,116	23.2
WI	1	6,022	16.6	0	5,975	0.0
Scotland	**260**	**1,394,228**	**18.6**	**267**	**1,456,364**	**18.3**

1. An arrow denotes statistically significant change.
2. Note: Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 10: SAB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Bed days	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Bed days	YE Q3 21 Rate
AA	74	398,522	18.6	72	412,612	17.4
BR	12	104,201	11.5	25	114,555	21.8
DG	20	154,607	12.9	25	157,057	15.9
FF	39	318,170	12.3	49	320,523	15.3
FV	43	273,013	15.8	57	277,191	20.6
GJ	7	40,742	17.2	13	47,818	27.2
GR	76	471,190	16.1	91	456,334	19.9
GGC	283	1,525,223	18.6	305	1,584,676	19.2
HG	22	255,227	8.6	45	264,966	↑ 17.0
LN	99	510,747	19.4	105	529,690	19.8
LO	132	889,646	14.8	142	926,920	15.3
OR	3	10,901	27.5	1	11,864	8.4
SH	4	8,869	45.1	3	8,705	34.5
TY	97	410,694	23.6	94	425,219	22.1
WI	6	20,593	29.1	4	22,942	17.4
Scotland	**917**	**5,392,345**	**17.0**	**1,031**	**5,561,072**	**18.5**

1. An arrow denotes statistically significant change.
2. Note: Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
3. Figures include any updates received following the last publication (see Appendix 2).

Table 11: SAB cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).[1,2,3,4]

NHS Board	Q2 Cases	Q2 Population	Q2 Rate	Q3 Cases	Q3 Population	Q3 Rate
AA	8	367,990	8.7	17	367,990	18.3
BR	3	115,240	10.4	6	115,240	20.7
DG	11	148,290	29.8	5	148,290	13.4
FF	8	374,130	8.6	9	374,130	9.5
FV	5	305,930	6.6	7	305,930	9.1
GR	19	585,550	13.0	11	585,550	7.5
GGC	20	1,185,240	6.8	18	1,185,240	6.0
HG	9	320,860	11.3	10	320,860	12.4
LN	20	661,960	12.1	18	661,960	10.8
LO	27	912,490	11.9	19	912,490	8.3
OR	0	22,400	0.0	0	22,400	0.0
SH	1	22,870	17.5	1	22,870	17.3
TY	17	416,550	16.4	10	416,550	9.5
WI	0	26,500	0.0	1	26,500	15.0
Scotland	**148**	**5,466,000**	**10.9**	**132**	**5,466,000**	**9.6**

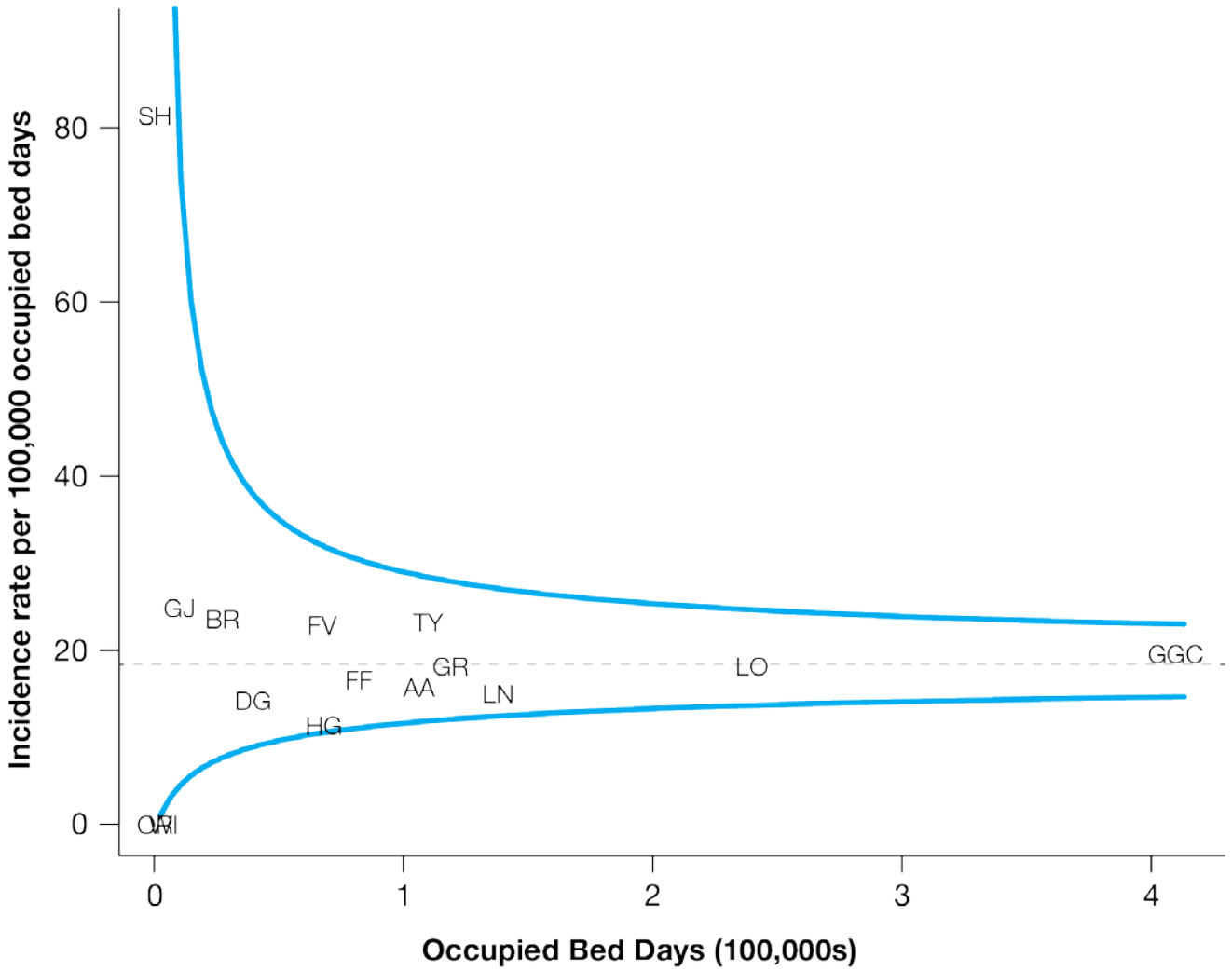
1. Quarterly population rates are based on an annualised population.
2. An arrow denotes statistically significant change.
3. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
4. Figures include any updates received following the last publication (see Appendix 2).

Table 12: SAB cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).[1,2,3]

NHS Board	YE Q3 20 Cases	YE Q3 20 Population	YE Q3 20 Rate	YE Q3 21 Cases	YE Q3 21 Population	YE Q3 21 Rate
AA	52	367,990	14.1	46	367,990	12.5
BR	11	115,240	9.5	17	115,240	14.8
DG	17	148,290	11.5	20	148,290	13.5
FF	33	374,130	8.8	42	374,130	11.2
FV	40	305,930	13.1	32	305,930	10.5
GR	60	585,550	10.2	60	585,550	10.2
GGC	86	1,185,240	7.3	76	1,185,240	6.4
HG	40	320,860	12.5	32	320,860	10.0
LN	67	661,960	10.1	78	661,960	11.8
LO	95	912,490	10.4	93	912,490	10.2
OR	5	22,400	22.3	0	22,400	0.0
SH	3	22,870	13.1	2	22,870	8.7
TY	50	416,550	12.0	50	416,550	12.0
WI	3	26,500	11.3	3	26,500	11.3
Scotland	**562**	**5,466,000**	**10.3**	**551**	**5,466,000**	**10.1**

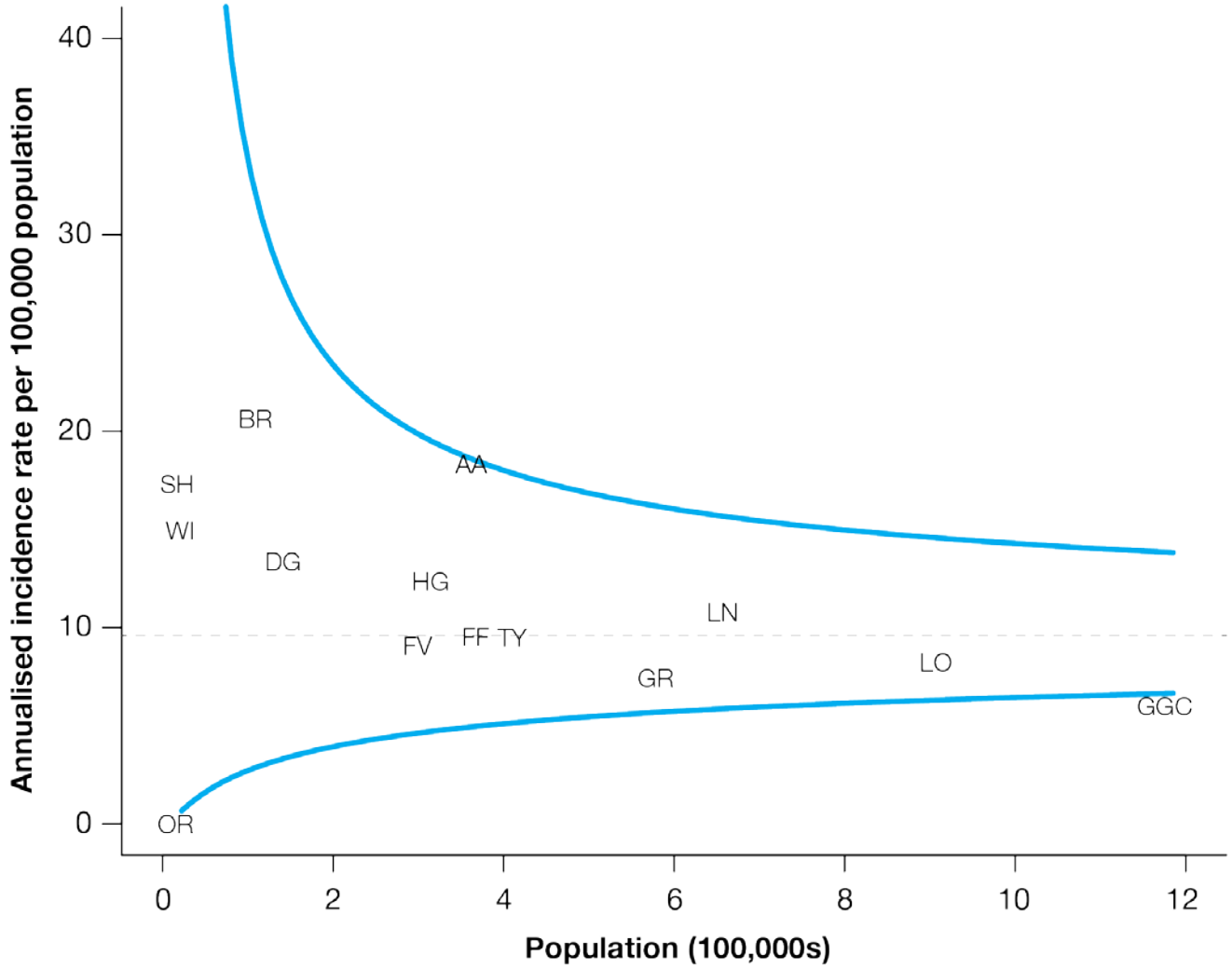
1. An arrow denotes statistically significant change.
2. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.
3. Figures include any updates received following the last publication (see Appendix 2).

Figure 5: Funnel plot of SAB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in Q3 2021.[1,2]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & Total occupied bed days: Information Services Division ISD(S)1.
2. NHS Orkney and NHS Western Isles overlap.

Figure 6: Funnel plot of SAB incidence rates (per 100,000 population) in community associated infection cases for all NHS boards in Scotland in Q3 2021.[1]



1. Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates.

Surgical Site Infection (SSI)

Epidemiological data for SSI are not included for this quarter due to the pausing of surveillance to support the COVID-19 response.

List of Tables

File name	File and size
Table 1: CDI cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 2: CDI cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)
Table 3: CDI cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 4: CDI cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)
Table 5: ECB cases and incidence rates (per 100,000 TOBD) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 6: ECB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)
Table 7: ECB cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 8: ECB cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)
Table 9: SAB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 10: SAB cases and incidence rates (per 100,000 TOBDs) for healthcare associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)

File name	File and size
Table 11: SAB cases and incidence rates (per 100,000 population) for community associated infection cases: Q2 2021 (April to June 2021) compared to Q3 2021 (July to September 2021).	supplementary data (457 Kb)
Table 12: SAB cases and incidence rates (per 100,000 population) for community associated infection cases: year-ending September 2020 (YE Q3 20) compared to year-ending September 2021 (YE Q3 21).	supplementary data (457 Kb)

Contact

Shona Cairns, Consultant Healthcare Scientist, ARHAI Scotland

Laura Imrie, Clinical Lead, ARHAI Scotland

Phone: 0141 300 1922

Email: **NSS.HPSHAIIC@nhs.scot**

Further Information

Further Information can be found on the **HPS website.**

For more information on types of infections included in this report, please see the **CDI, ECB, SAB** and **SSI** pages.

The next release of this publication will be April 2022.

Rate this publication

Please **provide feedback** on this publication to help us improve our services.

Appendices

Appendix 1 – Background information

Revisions to the surveillance

Description of Revision	First report revision applied	Report section(s) revision applies to	Rational for revision
Name change for Clostridium difficile to Clostridioides difficile.	October 2018	CDI	A novel genus *Clostridioides* has been proposed for *Clostridium difficile* which will now be known as ***Clostridioides difficile***. There are no implications with regards to the natural history of infection, infection prevention and control, or clinical treatment.
Addition of healthcare/ community case assignment	October 2017	CDI/SAB	An increasing awareness of those infections occurring in community settings has warranted measurement of incidence rates by healthcare setting (healthcare settings vs. community settings) to enable interventions to be targeted to the relevant settings.
Use of standardised denominator data for CDI/ECB/SAB	October 2017	CDI/SAB	The 'total occupied bed days' data will be extracted from the ISD(S)1 data collection which contains aggregated information on acute and non-acute bed days including geriatric medicine and long-term stays in real-time. The standardisation of denominator data across the three surveillance programmes could result in slightly less accurate denominators due to inclusion of persons in the denominator who are at slightly lower risk of infection. However, in surveillance programmes developed for the purpose of preventing

Description of Revision	First report revision applied	Report section(s) revision applies to	Rational for revision
			infection and driving quality improvement in care, consistency of the denominators over time tend to be more important than getting a very precise estimate of the population at risk, as the primary aim is to reduce infection to a lower incidence relative to what it was at the initial time of benchmarking.
Reporting of CDI cases aged 15 years and above only	October 2017	CDI	Current Scottish Government Local Delivery Plan Standards are based on the incidence rate in cases aged 15 years and above, therefore the report has been aligned to reflect this. ARHAI will continue to monitor CDI incidence rates in the separate age groups (15-64 years and 65 years and above) internally.
Reporting of total SAB cases only (i.e. Removal of MRSA sub-analysis)	October 2017	SAB	MRSA numbers are becoming too small to carry out statistical analysis. ARHAI will continue to monitor internally.
Addition of year end trends to ECB	October 2018	ECB	This analysis (already included for other reported organisms) is now possible for ECB due the amount of data that has now been collected.
Change in production of Quarterly SPC Charts	April 2020	All sections	Updated method used for calculating exceptions within the SPC charts. The mean, Trigger/warning lines (+2 standard deviations) and upper control limits (+3 standard deviations) presented, are now calculated using the 12 quarters prior to the most recent quarter, as to compare the new rate against an existing baseline.

Description of Revision	First report revision applied	Report section(s) revision applies to	Rational for revision
Changes to data collection in response to COVID-19	July 2020	All sections	A CNO letter sent 25th March 2020 asked NHS Boards to continue to report case numbers and origin of infection data but they would not be required to report risk factor data as would normally be expected under enhanced/extended surveillance for *Staphylococcus aureus* bacteraemia (SAB), *Escherichia coli* bacteraemia (ECB) and *Clostridioides difficile* infection (CDI). All mandatory and voluntary Surgical Site Infection (SSI) surveillance was paused until further notice.
Change from Health Protection Scotland to ARHAI Scotland	October 2020	All sections	In April 2020, as part of launch of Public Health Scotland, the ARHAI Group within Health Protection Scotland (HPS) became ARHAI Scotland. ARHAI Scotland will continue to support NHS boards in the prevention and control of healthcare associated infections. The report was updated to reflect this branding change.
Change from National Waiting Times Centre (NWTC) to NHS Golden Jubilee (GJ)	January 2021	All sections	Labelling updated.

Report methods and caveats

Full details of the report **methods and caveats** is available.

UK comparisons

Improved collaboration with the other UK nations has made comparisons and standardisation across the UK a high priority for all four nations' governments/health departments. The changes introduced in the Scottish HAI surveillance, described here facilitate benchmarking of the Scottish data against those of the rest of the UK.

Key to NHS boards

AA = NHS Ayrshire & Arran

BR = NHS Borders

DG = NHS Dumfries & Galloway

FV = NHS Forth Valley

FF = NHS Fife

GJ = NHS Golden Jubilee

GR = NHS Grampian

GGC = NHS Greater Glasgow & Clyde

HG = NHS Highland

LN = NHS Lanarkshire

LO = NHS Lothian

OR = NHS Orkney

SH = NHS Shetland

TY = NHS Tayside

WI = NHS Western Isles

Appendix 2 – Publication Metadata

Publication title

Quarterly epidemiological data on *Clostridioides difficile* infection, *Escherichia coli* bacteraemia, *Staphylococcus aureus* bacteraemia and Surgical Site Infection in Scotland

Description

This release provides information on *Clostridioides difficile* infection, *Escherichia coli* bacteraemia, *Staphylococcus aureus* bacteraemia and Surgical Site Infection in Scotland for the period July to September 2021.

Theme

Infections in Scotland

Topic

Clostridioides difficile infection, *Escherichia coli* bacteraemia, *Staphylococcus aureus* bacteraemia and Surgical Site Infection

Format

Excel workbooks

Data source(s)

***Clostridioides difficile* infection:**

Case data source: Electronic Communication of Surveillance in Scotland (ECOSS)

Data linkage source: General / Acute Inpatient and Day Case Scottish Morbidity Records (SMR01)

Healthcare associated denominator: Total occupied bed days: Information Services Division ISD(S)1

Community associated denominator: National Records of Scotland (NRS) mid-year population estimates

***Escherichia coli* bacteraemia:**

Case data source: Electronic Communication of Surveillance in Scotland (ECOSS) Enhanced Surveillance Web Tool

Healthcare associated denominator: Total occupied bed days: Information Services Division ISD(S)1

Community associated denominator: NRS mid-year population estimates

***Staphylococcus aureus* bacteraemia:**

Case data source: Electronic Communication of Surveillance in Scotland (ECOSS) Enhanced Surveillance Web Tool

Healthcare associated denominator: Total occupied bed days: Information Services Division ISD(S)1

Community associated denominator: NRS mid-year population estimates

Surgical Site Infection:

Case data source: Surgical Site Infection Reporting System (SSIRS)

Number of procedures denominator: SSIRS

Date that data are acquired

The date the data were extracted for analysis.

Clostridioides difficile: 21/10/2021

Escherichia coli Bacteraemia: 26/11/2021

Staphylococcus aureus Bacteraemia: 26/11/2021

Surgical Site Infection: Epidemiological data for SSI are not included for this quarter due to the pausing of surveillance to support the COVID-19 response.

Release date

18 January 2022

Frequency

Quarterly

Timeframe of data and timeliness

The latest iteration of data is 30 September 2021, therefore the data are three months in arrears.

Continuity of data

Quarterly as at March, June, September, December

Revisions statement

These data are not subject to planned major revisions. However, ARHAI aims to continually improve the interpretation of the data and therefore analysis methods are regularly reviewed and may be updated in the future.

Revisions relevant to this publication

Updates to previously published figures

Total Occupied Bed Days (TOBDs)

Amendments to total occupied bed days dataset provided by Information Services Division (ISD) have been included in historic dataset for analysis and reporting. Updated figures are available to view in the most recent **supplementary data**.

Quarter	NHS Board	Previous TOBDs	Updated TOBDs
2013 Q1	GR	166,336	166,770
2013 Q2	GR	168,184	168,618
2013 Q3	GR	170,033	170,471
2013 Q4	GR	170,033	170,471
2014 Q1	GR	166,336	166,765
2014 Q2	GR	168,184	168,617
2014 Q3	GR	154,519	155,552
2014 Q4	GR	158,181	159,496
2015 Q1	GR	160,859	162,238
2015 Q2	GR	154,379	155,593
2015 Q3	GR	147,944	148,857
2015 Q4	GR	149,344	151,027
2016 Q1	GR	153,525	155,101
2016 Q2	GR	146,297	147,762
2016 Q3	GR	143,428	145,070
2016 Q4	GR	144,162	145,837
2017 Q1	GR	145,904	147,658
2017 Q2	GR	138,958	140,460
2017 Q3	GR	136,682	138,173
2017 Q4	GR	137,146	139,048
2018 Q1	GR	142,190	144,477
2018 Q2	GR	136,123	138,240
2018 Q3	GR	134,241	136,514
2018 Q4	GR	131,734	133,702
2019 Q1	GR	132,257	134,033
2019 Q2	GR	131,370	133,401
2019 Q3	GR	131,950	133,865
2019 Q4	GR	133,259	135,055
2020 Q1	GR	131,518	132,936
2020 Q2	GR	94,592	95,717
2020 Q3	GR	106,471	107,482
2020 Q4	GR	107,564	108,028
2021 Q1	GR	108,735	111,390
2021 Q2	GR	114,082	115,651

Surgical Site Infection (SSI)

Epidemiological data for SSI are not included for this quarter due to the pausing of surveillance to support the COVID-19 response.

Concepts and definitions

Clostridioides difficile Infection (CDI)

Clostridioides difficile infection (CDI) is the most common cause of intestinal infections (and diarrhoea) associated with antimicrobial therapy. Clinical disease comprises a range of toxin mediated symptoms from mild diarrhoea, which can resolve without treatment, to severe cases such as pseudomembranous colitis (PMC), toxic megacolon and peritonitis that can lead to death.

For mild disease, diarrhoea is usually the only symptom. Other clinical features consistent with more severe forms of CDI include fever, leukocytosis, pseudomembranous colitis and ileus.

Symptoms of CDI, and associated immune reactions in children differ from those in adults, but the pathology is not well described. Routine testing in children aged less than 3 years old is not recommended.

Approximately 3% of healthy adults and 20% of hospital patients carry *C. difficile* in their gut. The elderly living in care homes or staying in long-term care facilities are more likely to carry *C. difficile* than other adults. In studies from the US, 20% of care home residents and 50% of patients in long-term care facilities, respectively, were colonised with *C. difficile*.

The Scottish CDI guidance ‘Guidance on Prevention and Control of CDI in Healthcare Settings in Scotland’ and *C. difficile* testing protocol ‘protocol for diagnosis of CDI’ are key documents for the control and reduction of CDI in Scotland.

There remains scope for a reduction of incidence rates through continued local monitoring, appropriate prescribing, and compliance with infection prevention and control measures.

Escherichia coli Bacteraemia (ECB)

Escherichia coli (*E. coli*) is a bacterium commonly found in the gut of animals and people where it forms part of the normal gut flora that helps human digestion. Although most types of *E. coli* live harmlessly in your gut, some types can make you unwell. Some types *E. coli* can cause urinary tract infections (UTI) and illnesses such as pneumonia.

E. coli continues to be the most frequent cause of Gram-negative bacteraemia in Scotland and is a frequent cause of infection worldwide. The number of patients with *E. coli* bacteraemia (ECB) reported to ARHAI has increased continuously since 2009.

New cases of ECB are identified by laboratory testing (via positive blood cultures) and submitted to the national system ECOSS. Only cases of ECB that have been reviewed and confirmed by the NHS boards in the enhanced surveillance system are included in the quarterly commentaries.

Staphylococcus aureus Bacteraemia (SAB)

Staphylococcus aureus (*S. aureus*) is a Gram positive bacterium which colonises the nasal cavity of about a quarter of the healthy population. This colonisation is usually harmless. However, infection can occur if *S. aureus* breaches the body's defence systems and can cause a range of illnesses from minor skin infections to serious systemic infections such as bacteraemia. Some strains of *S. aureus* produce toxins or show resistance to first line treatments therefore can be more complicated to treat.

Scotland has had a mandatory meticillin resistant *S. aureus* (MRSA) bacteraemia surveillance programme since 2001. The programme was extended to include meticillin sensitive *S. aureus* (MSSA) bacteraemias in 2006 and in 2014 to include enhanced *S. aureus* bacteraemia (SAB) surveillance. Full details of the surveillance methods may be found in the protocol.

Surgical Site Infection (SSI)

A surgical site infection (SSI) is an infection that occurs after surgery in the part of the body where the surgery took place. SSI may be superficial infections involving the skin only, while other SSI is more serious and can involve tissues under the skin, organs, or implanted material.

SSI is one of the most common types of healthcare associated infection in Scotland, estimated to account for 16.5% of inpatient healthcare associated infection within NHSScotland, according to Scottish Point Prevalence Survey 2016. Surgical Site Infection Surveillance (SSIS) is mandatory across NHSScotland and all NHS boards participate in SSI surveillance for all inpatient and post discharge surveillance (PDS) for 10 post-operative days for caesarean section procedures and prospective readmission surveillance for hip arthroplasty for 30 post-operative days. Additional new mandatory large bowel and vascular procedures commenced since April 2017. Reporting these procedures will not take place until it is assessed that robust data have been provided by boards.

Further information on the **methods and caveats** is available.

When a board is highlighted as an exception this will be looked at further as per the exception reporting process.

Further information on the **production of quarterly exception reports (SOP)** is available.

Relevance and key uses of the statistics

Clostridioides difficile Infection (CDI)

Surveillance data is essential for monitoring trends and assisting in outbreak investigations. Certain strains of *C. difficile* have been associated with more severe disease (e.g. PCR types 027 and 078) and antibiotic resistance has been suggested to be a factor in the emergence and spread of *C. difficile* epidemic types. In addition, the identification of ribotypes and whole genome sequencing can assist in the investigation of outbreaks.

The surveillance data should inform and support NHS boards in implementing antimicrobial prescribing policies, infection control and prevention interventions.

Escherichia coli Bacteraemia (ECB)

The outputs of the surveillance programme are intended to support the NHS boards in controlling and reducing the burden of ECB. Benchmarking against other NHS boards (and other countries) is an important function of the surveillance. In conjunction with other sources of intelligence (including enhanced surveillance data) the outputs of the quarterly surveillance can also help the NHS boards with planning and targeting activities to reduce risk to patient of

becoming infected and improve the care of patients (i.e. strategic planning, targeted intervention, care quality improvement).

As urinary tract infections are commonly associated with *E. coli* bacteraemia cases, we are collaborating with the Scottish Urinary Tract Infection Network (SUTIN). This will promote collaborative working with our partners within Health and Social Care around change ideas which may reduce the risk of *E. coli* bacteraemia. Work is also being done on improving antimicrobial treatment of people with infections – co-ordinated by the Scottish Antimicrobial Prescribing Group (SAPG) through a network of antimicrobial management teams.

***Staphylococcus aureus* Bacteraemia (SAB)**

ARHAI continues to offer support to NHS boards across Scotland to aid their local SAB reduction strategies. A programme of enhanced SAB surveillance commenced in all NHS boards in Scotland on 1 October 2014. This is providing further intelligence to focus future reduction interventions.

Surgical Site Infection (SSI)

SSIs are estimated to double the length of post-operative stay in hospital and significantly increase the cost of care. The national SSIS programme is intended to enhance the quality of patient care with use of data obtained from surveillance to compare incidence of SSI over time and against a benchmark rate and to use this information locally to review and guide clinical practice.

Accuracy

CDI, ECB and SAB data are the product of the Electronic Communication of Surveillance in Scotland (ECOSS). Participating laboratories routinely report all identifications of organisms, infection or microbiological intoxication, unless they are known to be of no clinical or public health importance. The collected data is used for: the identification of single cases of severe disease, outbreaks, and longer term trends in the incidence of laboratory reported infections, enhanced surveillance, health protection, analytical and statistical use.

Delays in SMR01 data availability at the time of report production means that some CDI cases may be reassigned at a later date. Therefore, healthcare-associated and community-

associated CDI cases in this report are provisional and may change as more data becomes available.

The enhanced ECB and SAB ECOSS web tool has built-in validation rules that have to be met before the data is submitted. Further checks of the data are made by ARHAI before the data are analysed. CDI validation of collected data entails sending a list of CDI cases extracted from ECOSS and asking for confirmation that the cases represent true CDI cases, i.e., meet the case definition which is defined in the surveillance protocol sent to all the NHS boards and available on the **website**. The final list of CDI cases is then agreed before publishing.

SSI data comes from the Surgical Site Infection Reporting System (SSIRS). Complying with a national minimum dataset and definitions for Surgical Site Infections, enables the data submitted to Health Protection Scotland to be mapped into the national dataset following a rigorous quality assurance process.

SSIRS has built-in validation rules and data cannot be submitted until rules are met. SSIRS primary validation checks for incomplete or ambiguous core data fields, for example, if presentation to the surgery is 'emergency' the OPCS code should correspond. Secondary validation includes data checks that can be accepted without completion and/or values that are outside the stated requirements.

Completeness

ECB/SAB:
Surveillance data are collected using an ECOSS Surveillance Web Tool that allows data collectors in NHS boards to validate ECOSS records as well as additional cases that may not be included in the ECOSS system. This therefore means that completeness is near to 100%. Only cases reviewed in the enhanced surveillance are included in the 'analysis' in the commentary publication.

CDI:
Diagnosis of CDI is confirmed in a patient who is both symptomatic with diarrhoea and whose stool has tested positive using a two-step diagnostic algorithm. Laboratory reports of positive samples are then sent to ECOSS for data extraction. In the community, patients with CDI may have a mild illness that does not require a GP visit, or the symptoms may not be recognised by a GP for a *C. difficile* test request. In hospitals, the chance of a diarrhoea sample not being

tested for *C. difficile* is much lower, and patients who have ileus (i.e., CDI but with no diarrhoea) might be missed; however, as a result of ARHAI published guidance on managing CDI patients, this is not likely. ARHAI carries out validation with the NHS boards to check that no CDI cases have been missed from ECOSS each quarter. As with most surveillance programmes, completeness will not be 100% but mandatory surveillance, supported by ARHAI through issued guidance on diagnosis of CDI and validation of cases, ensures this is as near to 100% as practically possible. When categorising by healthcare or community, not all cases may be successfully data linked in any one quarter. Therefore, the sum total of the healthcare and community CDI cases may not equal the total number of CDI cases reported to ARHAI.

SSI:
Surveillance coordinators are responsible for completeness and accuracy of data. At hospital level, processes are in placed to ensure all patients included in the standard surveillance have had forms completed (e.g. cross checking with admission or theatre list). ARHAI also compare SSIRS data with data from ISD to a make sure all procedures under surveillance have been included; however, this comparison is only done annually.

Comparability

CDI/ECB/SAB:

Public Health England report **rates per quarter for CDI, ECB and SAB** (methods and definitions may differ)

SSI:

SSI rates by health board are not published by the rest of UK. **Annual numbers** are reported by Public Health England

Accessibility

It is the policy of ARHAI to make its web sites and products accessible according to **published guidelines**.

Coherence and clarity

Tables and charts are accessible via the HPS website.

Value type and unit of measurement

Healthcare associated cases and incidence rates (per 100,000 Total occupied bed days (TOBDs)) for *Clostridioides difficile* infection, *Escherichia coli* bacteraemia & *Staphylococcus aureus* bacteraemia.

Community associated cases and incidence rates (per 100,000 population) for *Clostridioides difficile* infection, *Escherichia coli* bacteraemia & *Staphylococcus aureus* bacteraemia.

Number of procedures and Surgical Site Infections and incidence per categories (per 100 procedures) for inpatients and post discharge surveillance.

Disclosure

The **PHS protocol on Statistical Disclosure Protocol** is followed.

Official Statistics designation

Official Statistics

UK Statistics Authority Assessment

Not Assessed

Last published

5 October 2021

Next published

April 2022

Date of first publication

7 April 2015

Prior to this *Clostridioides difficile* infection (first publication - 2 Apr 2008) and *Staphylococcus aureus* bacteraemia (first publication - 3 Apr 2002) were separate reports.

Help email

NSS.HPSHAIIC@nhs.scot

Date form completed

18 January 2022

Appendix 3 – Early access details

Pre-Release Access

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ARHAI is obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access.

Standard Pre-Release Access:

- Scottish Government Health Department
- NHS Board Chief Executives
- NHS Board Communication leads

Appendix 4 – ARHAI Scotland and Official Statistics

About ARHAI Scotland

ARHAI Scotland works at the very heart of the health service across Scotland, delivering services critical to frontline patient care and supporting the efficient and effective operation of NHS Scotland.

Official Statistics

Our statistics comply with the **Code of Practice for Statistics** in terms of trustworthiness, high quality and public value. This also means that we keep data secure at all stages, through collection, processing, analysis and output production, and adhere to the **'five safes'**.