

NHS GRAMPIAN

Healthcare Associated Infection (HAI) Quarterly Report – May 2020

The following HAIRT report contains NHS Grampian's surveillance data and associated infection rates as reported in Health Protection Scotland's (HPS) Quarterly Epidemiological Data for Quarter 4 (October to December 2019) published on 7th April 2020.

HAI Summary - Quarter Ending December 2019

***Clostridioides difficile* infection (CDI)**

The total number of CDI cases in patients reported to HPS was 25 – 8.5% of the total across Scotland and an increase from 16 in the previous quarter.

17 CDI cases were reported to HPS as healthcare associated. This corresponded to an incidence rate of 12.8 cases per 100,000 total occupied bed days (TOBDs) which was below the Scotland wide rate of 14.9 per 100,000 TOBDs.

Eight CDI cases were reported as community associated. This corresponded to an incidence rate of 5.4 cases per 100,000 population, which was higher than the Scotland wide rate of 4.7 cases per 100,000 population.

Surgical Site Infection (SSI)

Six cases (1.3%) of SSI following caesarean section procedures were reported to HPS, detected either during inpatient stay or by PDS to day 10. This was above the Scotland wide proportion of 0.9%.

One case (0.4%) of SSI following hip arthroplasty procedure were reported to HPS, detected either during inpatient stay or on readmission to day 30. Across Scotland the proportion was 0.8%.

***Staphylococcus aureus* bacteraemia (SAB)**

The total number of SAB cases in patients reported to HPS was 33 – 9.0% of the total across Scotland and an increase of 11.1% from the previous quarter.

20 SAB cases were reported to HPS as healthcare associated. This corresponded to an incidence rate of 15.0 cases per 100,000 TOBDs. The Scotland wide rate was similar at 15.2 cases per 100,000 TOBDs.

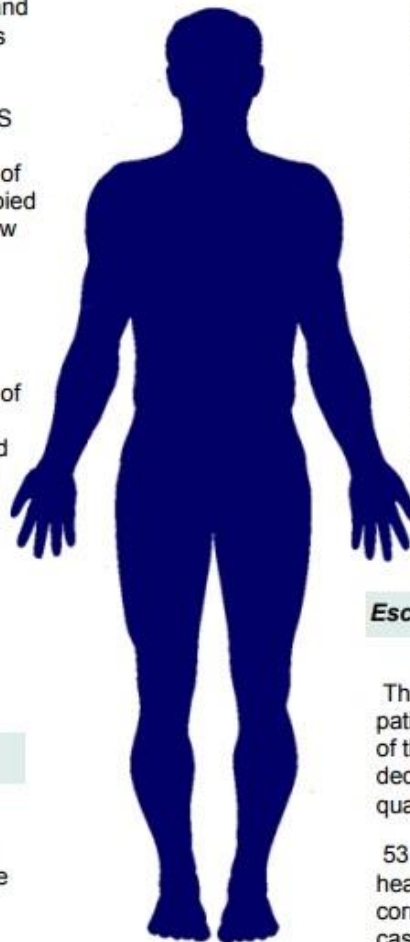
13 SAB cases were reported as community associated. This corresponded to an incidence rate of 8.8 cases per 100,000 population, below the Scotland wide rate of 9.6 cases per 100,000 population.

***Escherichia coli* bacteraemia (ECB)**

The total number of ECB cases in patients reported to HPS was 91 – 7.6% of the total across Scotland and a decrease of 26.6% from the previous quarter.

53 ECB cases were reported to HPS as healthcare associated. This corresponded to an incidence rate 39.8 cases per 100,000 TOBD compared to the Scotland wide rate of 40.8 cases per 100,000 TOBDs.

38 ECB cases were reported as community associated. This corresponded to an incidence rate of 25.8 cases per 100,000 population, which was well below the Scotland wide rate of 41.4 per 100,000 population.



Additional Surveillance not reported in Health Protection Scotland's Quarterly Epidemiological report:

Methicillin-Resistant *Staphylococcus Aureus* (MRSA) Screening

MRSA (CRA) screening compliance for Quarter 4 (January – March 2020) was 85%, which is below both the compliance target of 90% and the national average (87%).

Carbapenemase Producing Enterobacteriaceae (CPE) Screening

CPE (CRA) screening compliance for Quarter 4 (January – March 2020) was 93%, which is above both the compliance target (90%) and the national average (85%).

Norovirus

For the period January – March 2020 there was 1 ward closed in NHS Grampian due to enteric illness (suspected Norovirus).

Health Facilities Scotland (HFS)

The cleaning compliance for January – March 2020 was 93% and the estates monitoring compliance was 95%; both these scores are above the national targets of 90%.

1. Actions Recommended

The Board is requested to note the content of this summary quarterly HAI Report, as directed by the HAI Policy Unit, Scottish Government Health Directorates.

2. Strategic Context

- Updated Antibiotic Use Indicators for Scotland
- Local Delivery Plan Standards for CDIs & SABs awaited from Scottish Government
- National Key Performance Indicators for MRSA screening
- National Key Performance Indicators for CPE screening
- National Health Facilities Scotland (HFS) Environmental Cleaning Target
- National Health Facilities Scotland (HFS) Estates Monitoring Target
- National Hand Hygiene Compliance Target

3. Key matters relevant to recommendation

Issue	Group	Target	Period & source	NHS Scot	NHS G	RAG*
CDIs	Healthcare Associated Infection	To be confirmed by Scottish Government	Oct – Dec 2019, HPS	14.9	12.8	Green
	Community Associated Infection			4.7	5.4	Amber
<i>E coli</i> Bacteraemia	Healthcare Associated Infection	No target (rate per 100,000 bed days)	Oct – Dec 2019, HPS	40.8	39.8	Green
	Community Associated Infection	No target (annualised rate per 100,000 population)		41.4	25.8	Green
SABs	Healthcare Associated Infection	To be confirmed by Scottish Government	Oct – Dec 2019, HPS	15.2	15.0	Green
	Community Associated Infection			9.6	8.8	Green
Surgical Site Infections (SSIs)	Caesarean Section	-	Oct – Dec 2019, HPS	0.9	1.3	Amber
	Hip Arthroplasty	-	Oct – Dec 2019, HPS	0.8	0.4	Green
MRSA (CRA) screening	-	HPS 90%	Jan – Mar 2020, HPS	87	85	Amber
CPE (CRA) screening	-	HPS 90%	Jan – Mar 2020, HPS	85	93	Green
Cleaning	All clinical areas	HFS 90%	Jan – Mar 2020, NHSG	N/A	93	Green
Estates		HFS 90%	Jan – Mar 2020, NHSG	N/A	95	Green
Hand Hygiene	Nursing staff	SGHD 90%	Jan – Mar 2020, NHSG	N/A	99	Green
	Medical staff	SGHD 90%	Jan – Mar 2020, NHSG	N/A	96	Green
	Allied Health Professionals	SGHD 90%	Jan – Mar 2020, NHSG	N/A	99	Green
	Ancillary staff	SGHD 90%	Jan – Mar 2020, NHSG	N/A	94	Green

***RAG (Red / Amber / Green) Status**

Above upper control limit = **Red**
 Below National average = **Green**

Below upper control limit but above National average = **Amber**
 Below lower control limit = **Green**

4. Risk Mitigation

By noting the contents of this report, the Board will fulfil its requirement to seek assurance that appropriate surveillance of healthcare associated infection is taking place and that this surveillance is having a positive impact on reducing the risk of avoidable harm to the patients of NHS Grampian.

5. Responsible Executive Director and contact for further information

If you require any further information in advance of the Board meeting please contact:

Responsible Executive Director

Caroline Hiscox
Executive Nurse Director
carolinehiscox@nhs.net

Contact for further information

Grace Johnston
Interim Infection Prevention & Control Manager
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Antibiotic Use Indicators for Scotland

The national indicators, agreed by the Scottish Antimicrobial Prescribing Group (SAPG), and approved by the Scottish Government in October 2019 are detailed below.

1. A 10% reduction of antibiotic use in Primary Care (excluding dental) by 2022, using 2015/16 data as a baseline (items/1000/day).

Work is ongoing in primary care to reduce overall antibiotic use which continues to decrease.

2. Use of intravenous antibiotics in secondary care defined as DDD/1000population/day will be no higher in 2022 than it was in 2018.

Recent figures produced by SAPG show NHS Grampian saw a small increase in IV antibiotic use in the years up to 2018. Quality improvement work to improve IV antibiotic reviews will be required to ensure NHS Grampian can meet this target. The Hospital Antibiotic Review Programme (HARP) materials from SAPG were published on March 3rd. The Antimicrobial Management Team plan to use these materials to update the local IV to oral switch (IVOST) policy and relaunch.

3. Use of WHO Access antibiotics (NHSE list) ≥60% of total antibiotic use in acute hospitals by 2022.

NHS Grampian is currently meeting this target with 67.5% of total antibiotic use in acute hospitals from the WHO Access list.

Data on the above indicators became available via NSS Discovery in January 2020. The new Antibiotic Use Indicators will be discussed at the next Antimicrobial Management Team (AMT) meeting.

The Scottish Antimicrobial Prescribing Group (SAPG) issued a document entitled '*Interim advice to Antimicrobial Management Teams (AMTs) on antibiotic management / antimicrobial stewardship in the context of the COVID-19 pandemic*' on 13th March 2020 and this has been adapted for local use. The AMT plan to produce an SBAR giving more information on Antimicrobial Management Team (AMT) Activity and Antibiotic Consumption during the COVID-19 pandemic.

***Clostridioides (formerly Clostridium) difficile* Infection (CDI) Surveillance**

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, toxic megacolon and peritonitis that can lead to death¹.

In Scotland mandatory surveillance of CDI commenced in October 2006, with enhanced surveillance commenced in 2009. Historically HPS reported CDI cases based on age ranges 15-64yrs and 65yrs and above but since October 2017 the definitions have changed to healthcare associated infection or community associated infection for all patients over the age of 15 years.

Each new case of CDI is discussed at a weekly multidisciplinary team meeting involving Infection Prevention and Control Doctor(s), Infection Prevention and Control Nurses and Surveillance Nurses. By close investigation of each case and typing of the organisms – when indicated – the Infection Prevention and Control Team is assured that there have not been any outbreaks of CDI.

Further information on CDI surveillance can be found at:

<https://www.hps.scot.nhs.uk/web-resources-container/protocol-for-the-scottish-surveillance-programme-for-clostridium-difficile-infection-user-manual/>

Please see below for abbreviations used in the following tables:

AA	Ayrshire & Arran	HG	Highland
BR	Borders	LO	Lothian
DG	Dumfries & Galloway	LN	Lanarkshire
FF	Fife	NWTC	National Waiting Times Centre
FV	Forth Valley	OR	Orkney
GGC	Greater Glasgow & Clyde	SH	Shetland
GR	Grampian	TY	Tayside
		WI	Western Isles

CDI cases and incidence rates (per 100,000 total occupied bed days) for healthcare associated infection cases

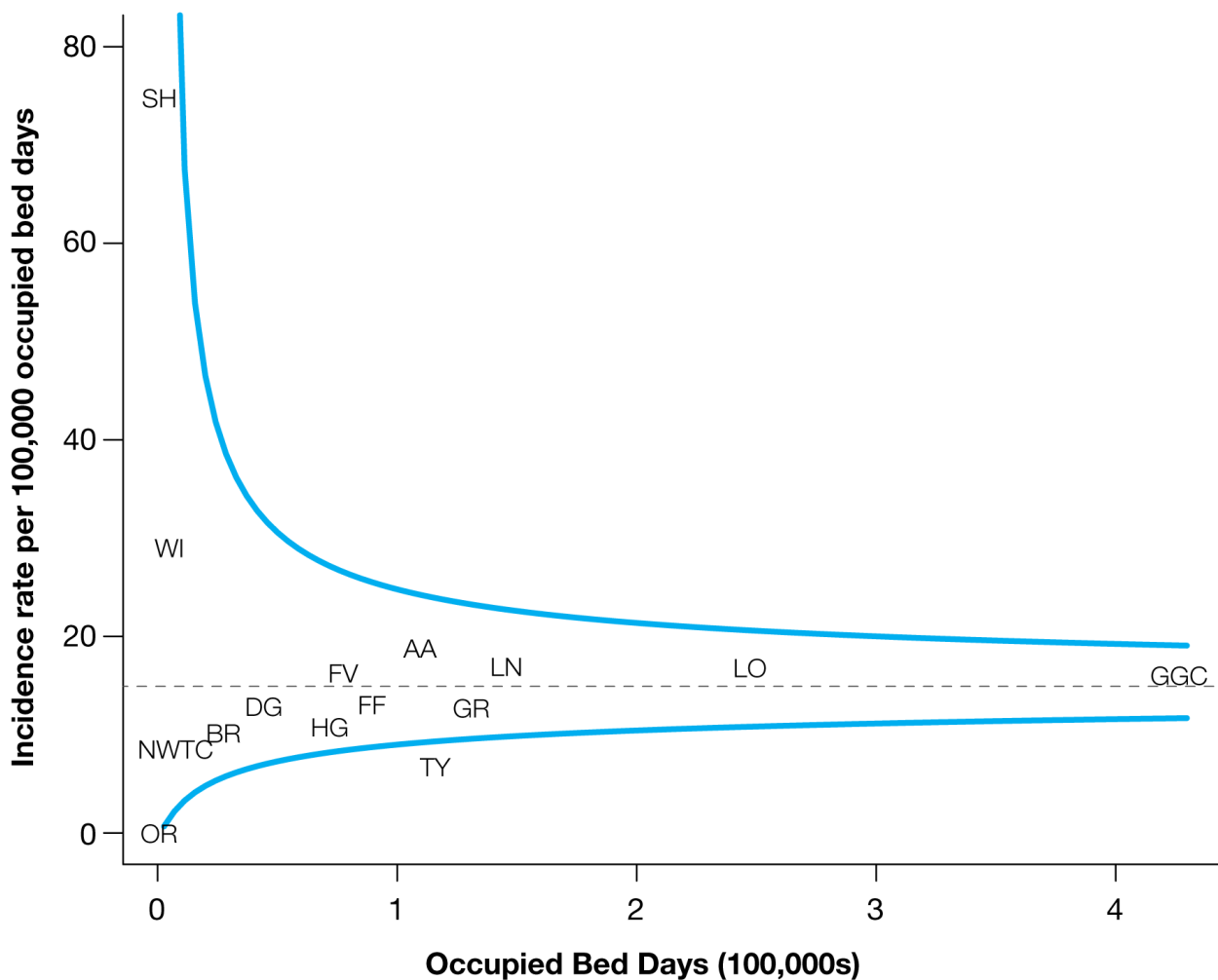
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Bed Days	Q3 Rate	Q4 Cases	Q4 Bed Days	Q4 Rate
AA	21	110,670	19.0	21	111,501	18.8
BR	4	28,962	13.8	3	29,415	10.2
DG	7	46,074	15.2	6	46,458	12.9
FF	8	90,276	8.9	12	91,708	13.1
FV	14	77,669	18.0	13	79,712	16.3
GR	11	131,950	8.3	17	133,259	12.8
GGC	62	416,741	14.9	69	429,650	16.1
HG	15	75,715	19.8	8	73,909	10.8
LN	24	146,465	16.4	25	147,326	17.0
LO	25	245,501	10.2	42	249,135	16.9
NWTC	1	12,067	8.3	1	11,659	8.6
OR	1	2,983	33.5	0	2,915	0.0
SH	2	2,694	74.2	2	2,673	74.8
TY	10	115,796	8.6	8	117,973	6.8
WI	2	6,702	29.8	2	6,884	29.1
Scotland	207	1,510,265	13.7	229	1,534,177	14.9

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

Funnel plot of CDI incidence rates (per 100,000 total occupied bed days) in healthcare associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



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

CDI cases and incidence rates (per 100,000 population) for community associated infection cases

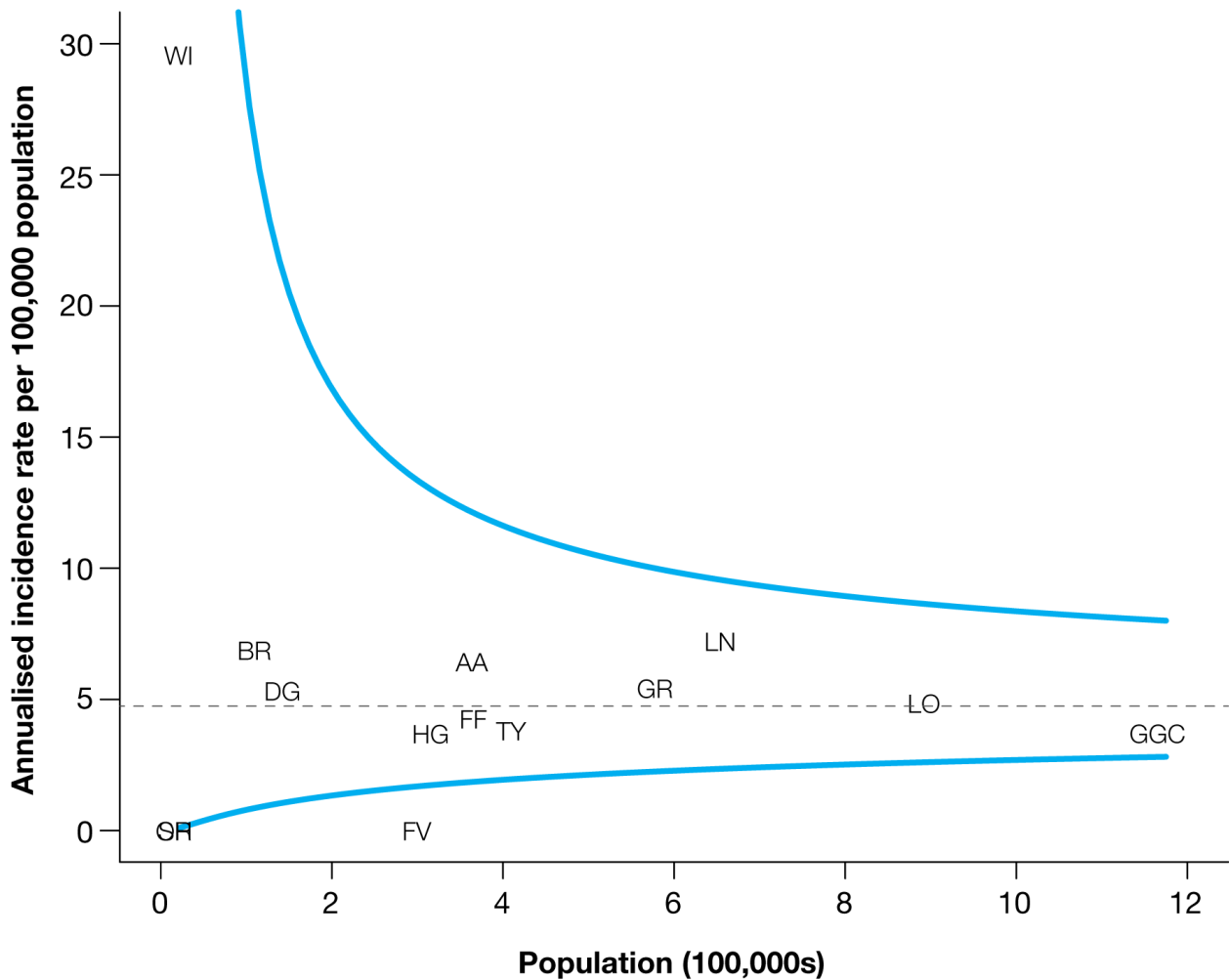
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Population	Q3 Rate	Q4 Cases	Q4 Population	Q4 Rate
AA	7	369,670	7.5	6	369,670	6.4
BR	0	115,270	0.0	2	115,270	6.9
DG	5	148,790	13.3	2	148,790	5.3
FF	3	371,910	3.2	4	371,910	4.3
FV	2	306,070	2.6	0	306,070	0.0
GR	5	584,550	3.4	8	584,550	5.4
GGC	15	1,174,980	5.1	11	1,174,980	3.7
HG	5	321,800	6.2	3	321,800	3.7
LN	8	659,200	4.8	12	659,200	7.2
LO	18	897,770	8.0	11	897,770	4.9
OR	0	22,190	0.0	0	22,190	0.0
SH	0	22,990	0.0	0	22,990	0.0
TY	4	416,080	3.8	4	416,080	3.8
WI	0	26,830	0.0	2	26,830	29.6
Scotland	72	5,438,100	5.3	65	5,438,100	4.7

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

Funnel plot of CDI incidence rates (per 100,000 population) in community associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



- Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates
- NHS Orkney and NHS Shetland overlap

National *Escherichia coli* Bacteraemia Surveillance Programme

Escherichia coli (*E.coli*) is the most frequent cause of Gram-negative bacteraemia in Scotland and is a frequent cause of infection worldwide. *E.coli* bacteraemia (ECB) usually develops as a complication of other infections including urinary tract infection, surgery, and use of medical devices e.g. catheters. The number of patients with ECBs reported to HPS has increased continually since 2009².

In Scotland, mandatory surveillance for this programme commenced in 2016.

The Healthcare Associated Infection (HAI) *E.coli* is measured as a rate per 100,000 total occupied bed days. However, community acquired infections are measured as a rate per 100,000 population.

Information on the national surveillance programme for *Escherichia coli* infection can be found at:

<https://www.hps.scot.nhs.uk/web-resources-container/quarterly-epidemiological-commentary-for-the-surveillance-of-healthcare-associated-infections-in-scotland-methods-caveats/>

ECB cases and incidence rates (per 100,000 total occupied bed days) for healthcare associated infection cases

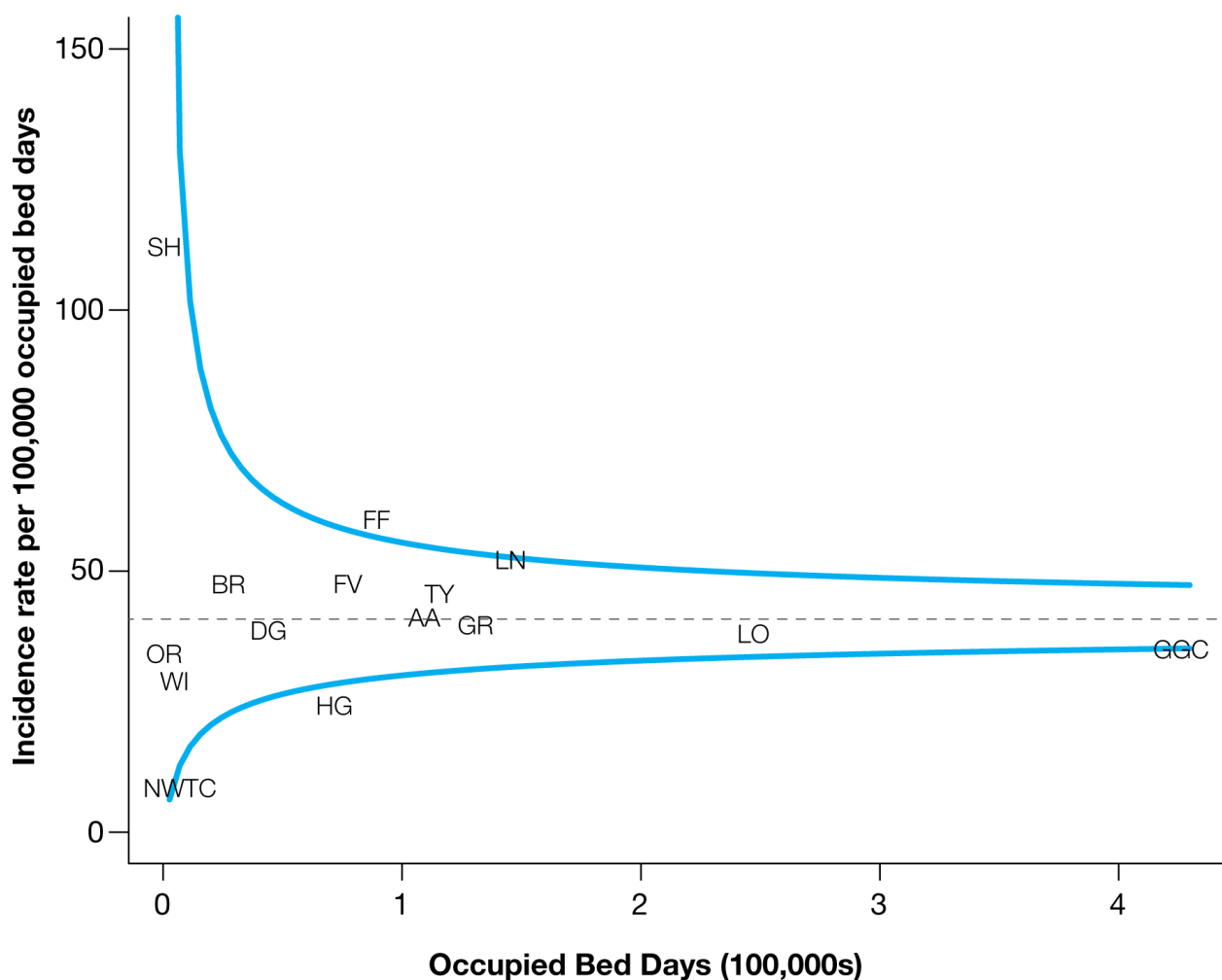
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Bed Days	Q3 Rate	Q4 Cases	Q4 Bed Days	Q4 Rate
AA	50	110,670	45.2	46	111,501	41.3
BR	8	28,962	27.6	14	29,415	47.6
DG	12	46,074	26.0	18	46,458	38.7
FF	28	90,276	31.0	55	91,708	60.0
FV	38	77,669	48.9	38	79,712	47.7
GR	74	131,950	56.1	53	133,259	39.8
GGC	172	416,741	41.3	151	429,650	35.1
HG	17	75,715	22.5	18	73,909	24.4
LN	65	146,465	44.4	77	147,326	52.3
LO	85	245,501	34.6	95	249,135	38.1
NWTC	3	12,067	24.9	1	11,659	8.6
OR	4	2,983	134.1	1	2,915	34.3
SH	2	2,694	74.2	3	2,673	112.2
TY	47	115,796	40.6	54	117,973	45.8
WI	3	6,702	44.8	2	6,884	29.1
Scotland	608	1,510,265	40.3	626	1,534,177	40.8

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

Funnel plot of ECB incidence rates (per 100,000 total occupied bed days) in healthcare associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



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

ECB cases and incidence rates (per 100,000 population) for community associated infection cases

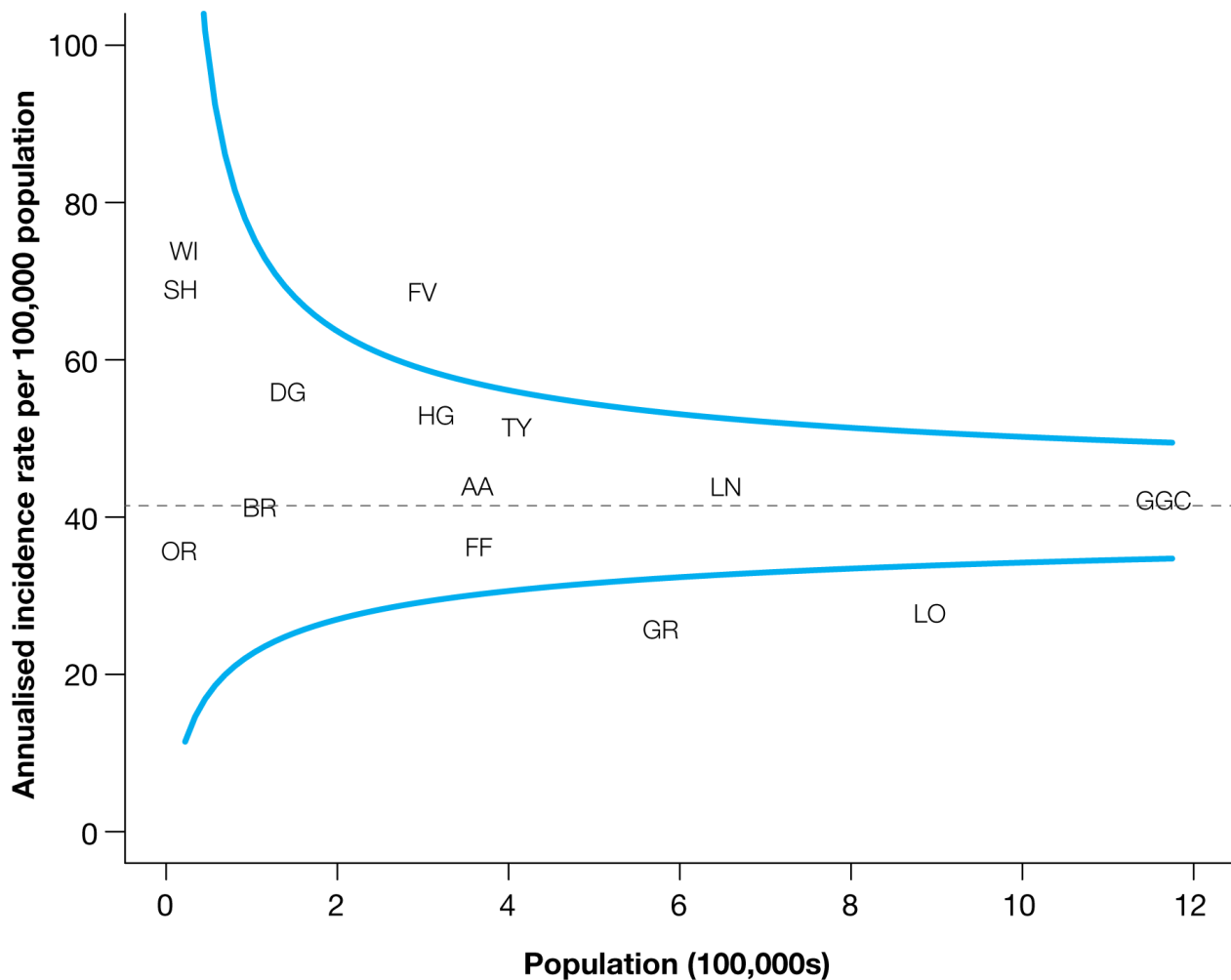
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Population	Q3 Rate	Q4 Cases	Q4 Population	Q4 Rate
AA	55	369,670	59.0	41	369,670	44.0
BR	24	115,270	82.6	12	115,270	41.3
DG	29	148,790	77.3	21	148,790	56.0
FF	40	371,910	42.7	34	371,910	36.3
FV	40	306,070	51.8	53	306,070	68.7
GR	50	584,550	33.9	38	584,550	25.8
GGC	132	1,174,980	44.6	125	1,174,980	42.2
HG	26	321,800	32.1	43	321,800	53.0
LN	88	659,200	53.0	73	659,200	43.9
LO	62	897,770	27.4	63	897,770	27.8
OR	2	22,190	35.8	2	22,190	35.8
SH	2	22,990	34.5	4	22,990	69.0
TY	51	416,080	48.6	54	416,080	51.5
WI	5	26,830	73.9	5	26,830	73.9
Scotland	606	5,438,100	44.2	568	5,438,100	41.4

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

Funnel plot of ECB incidence rates (per 100,000 population) in community associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



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

Enhanced *Staphylococcus aureus* Bacteraemia (SAB) Surveillance

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 leading to illnesses from minor skin infections to serious systemic infections such as bacteraemia³.

In Scotland mandatory enhanced surveillance for *Staphylococcus aureus* bacteraemias (SABs) commenced in 2014.

As with *Clostridioides* (formerly *Clostridium*) *difficile*, enhanced SAB surveillance is carried out in all Health Boards using standardised data definitions. Each new case continues to be discussed at a weekly multidisciplinary team meeting involving Infection Prevention and Control Doctors, Infection Prevention and Control Nurses, Surveillance Nurses and an Infection Unit Nurse. The offer of attendance at speciality case review meetings from the Infection Prevention and Control Team is extended should further discussion be required.

Cases are defined as:

- Healthcare Associated
- Community Associated

More information on the national surveillance programme for *Staphylococcus aureus* bacteraemias can be found at:

<https://www.hps.scot.nhs.uk/web-resources-container/protocol-for-enhanced-staphylococcus-aureus-bacteraemia-surveillance/>

SAB cases and incidence rates (per 100,000 total occupied bed days) for healthcare associated infection cases

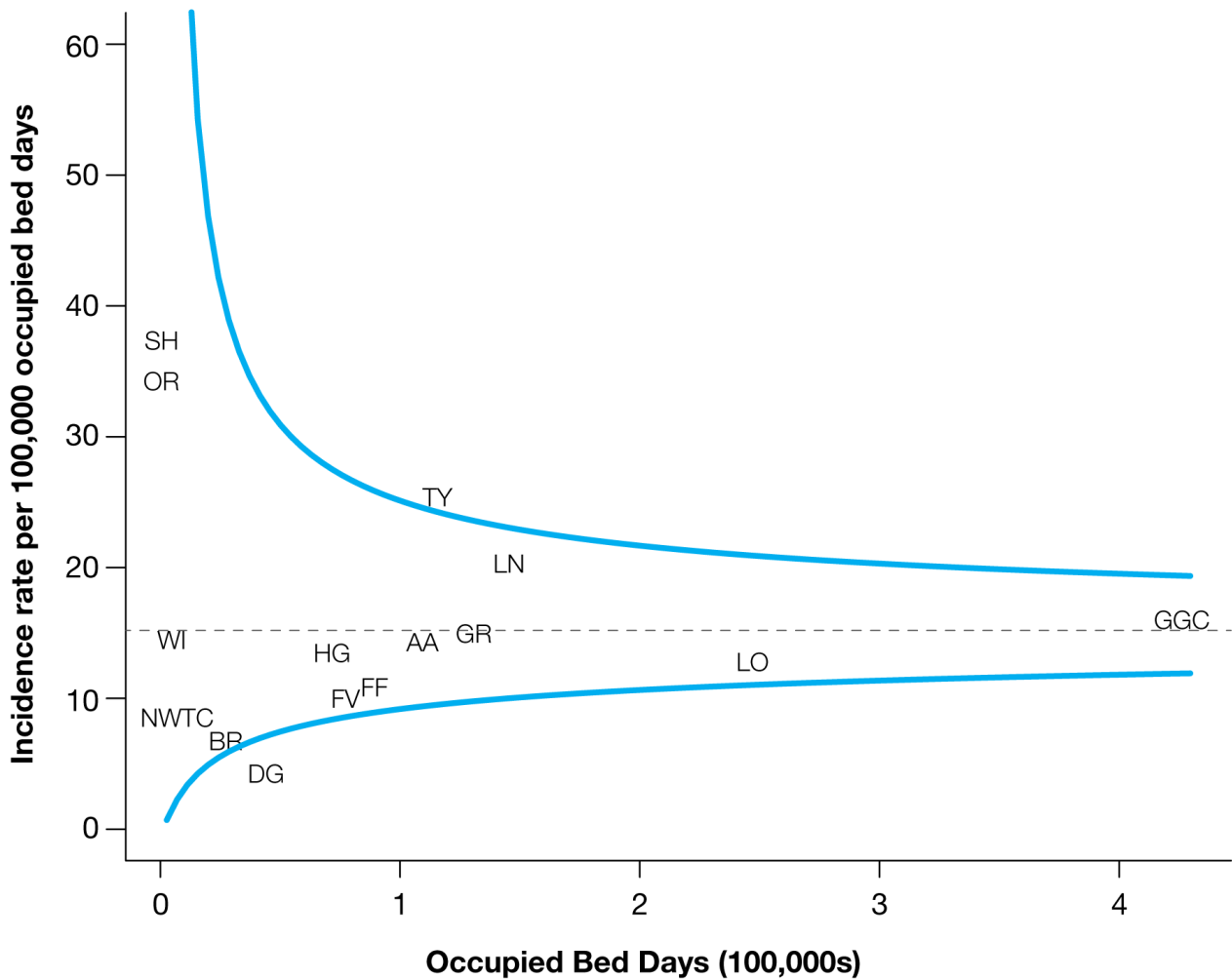
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Bed Days	Q3 Rate	Q4 Cases	Q4 Bed Days	Q4 Rate
AA	22	110,670	19.9	16	111,501	14.3
BR	0	28,962	0.0	2	29,415	6.8
DG	4	46,074	8.7	2	46,458	4.3
FF	14	90,276	15.5	10	91,708	10.9
FV	15	77,669	19.3	8	79,712	10.0
GR	21	131,950	15.9	20	133,259	15.0
GGC	93	416,741	22.3	69	429,650	16.1
HG	10	75,715	13.2	10	73,909	13.5
LN	31	146,465	21.2	30	147,326	20.4
LO	25	245,501	10.2	32	249,135	12.8
NWTC	1	12,067	8.3	1	11,659	8.6
OR	1	2,983	33.5	1	2,915	34.3
SH	0	2,694	0.0	1	2,673	37.4
TY	22	115,796	19.0	30	117,973	25.4
WI	5	6,702	74.6	1	6,884	14.5
Scotland	264	1,510,265	17.5	233	1,534,177	15.2

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

Funnel plot of SAB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



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

SAB cases and incidence rates (per 100,000 population) for community associated infection cases

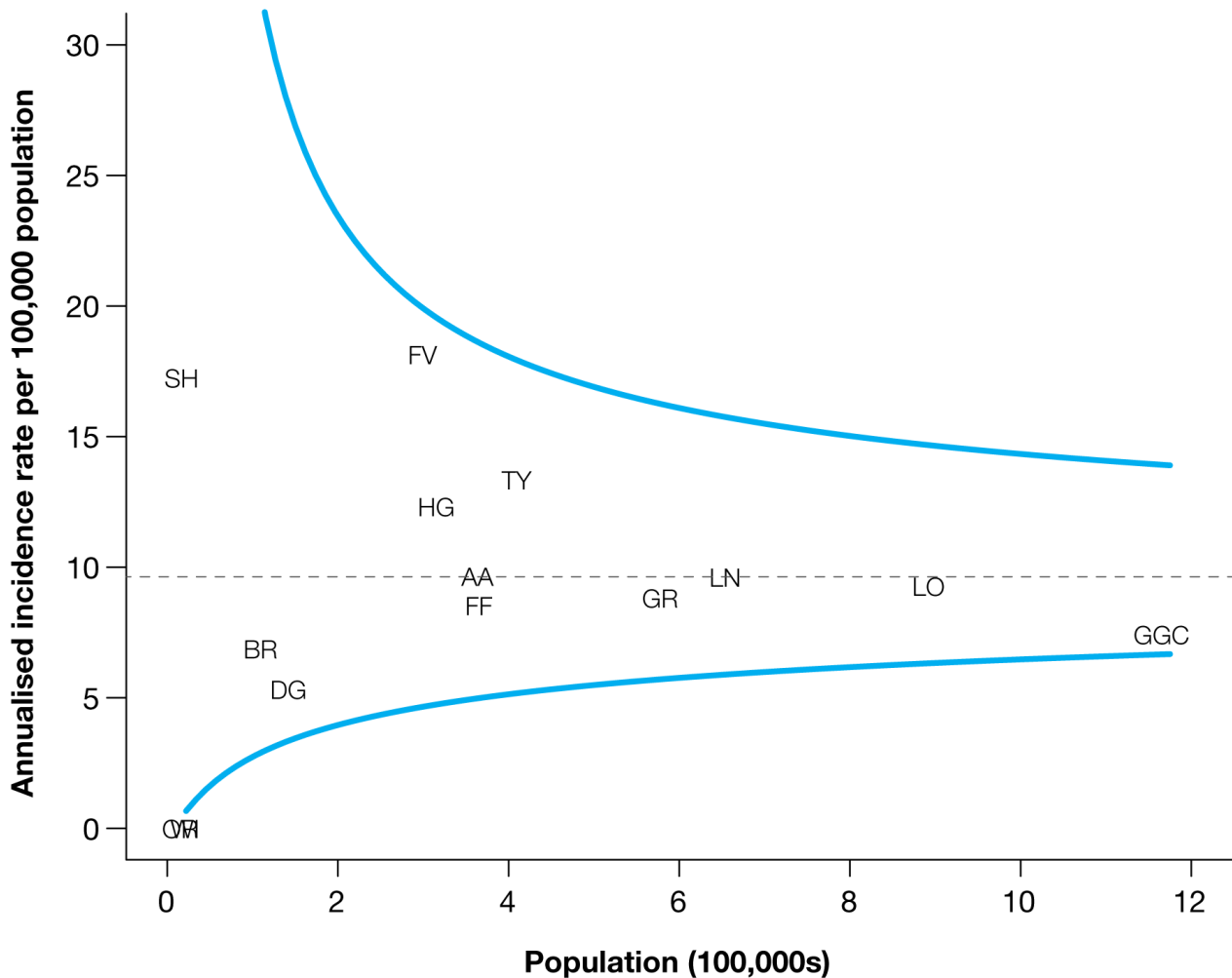
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 Cases	Q3 Population	Q3 Rate	Q4 Cases	Q4 Population	Q4 Rate
AA	8	369,670	8.6	9	369,670	9.7
BR	2	115,270	6.9	2	115,270	6.9
DG	3	148,790	8.0	2	148,790	5.3
FF	11	371,910	11.7	8	371,910	8.5
FV	10	306,070	13.0	14	306,070	18.1
GR	6	584,550	4.1	13	584,550	8.8
GGC	17	1,174,980	5.7	22	1,174,980	7.4
HG	10	321,800	12.3	10	321,800	12.3
LN	12	659,200	7.2	16	659,200	9.6
LO	15	897,770	6.6	21	897,770	9.3
OR	0	22,190	0.0	0	22,190	0.0
SH	0	22,990	0.0	1	22,990	17.3
TY	8	416,080	7.6	14	416,080	13.3
WI	0	26,830	0.0	0	26,830	0.0
Scotland	102	5,438,100	7.4	132	5,438,100	9.6

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

Funnel plot of SAB incidence rates (per 100,000 population) in community associated infection cases for all NHS Boards in Scotland

Q4 (October to December 2019)



- Source of data is Electronic Communication of Surveillance in Scotland (ECOSS) & NRS mid-year population estimates
- NHS Orkney and NHS Western Isles overlap

Healthcare Associated SABs October – December 2019	
Source	Number
Not known	10
Devices (PICC/Midline, PVC)	4
Skin & soft tissue (skin break, ulcer, eczema)	4
ENT	1
Post ERCP	1
Total Healthcare Associated SABs	20

Community Associated SABs October – December 2019	
Source	Number
Injection site related to illicit drug use	4
Not known	3
Skin & soft tissue (skin break, cellulitis)	4
Respiratory infection	2
Total Community Associated SABs	13

Surgical Site Infection (SSI) Surveillance

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 HAI in Scotland⁴.

In Scotland the mandatory Surgical Site Infection (SSI) surveillance programme commenced in 2002. All NHS boards are required to undertake surveillance for hip arthroplasty (includes hemiarthroplasty) and caesarean section procedures as per the mandatory requirements of HDL (2006) 38 and CEL (11) 2009.

Post-operative surveillance is carried out as follows:

- Caesarean section surveillance is carried out during admission, post discharge up to 10 days and readmission up to 30 days
- Hip arthroplasty (includes hemiarthroplasty) surveillance is carried out during admission, readmission up to 30 days and readmission up to 90 days if there is an implant

Information on the national surveillance programme for Surgical Site Infection can be found at:

<https://www.hps.scot.nhs.uk/web-resources-container/surgical-site-infection-surveillance-protocol-and-resource-pack-edition-71/>

Caesarean section procedures and SSI incidence (per 100 procedures) for inpatients and post discharge surveillance to day 10

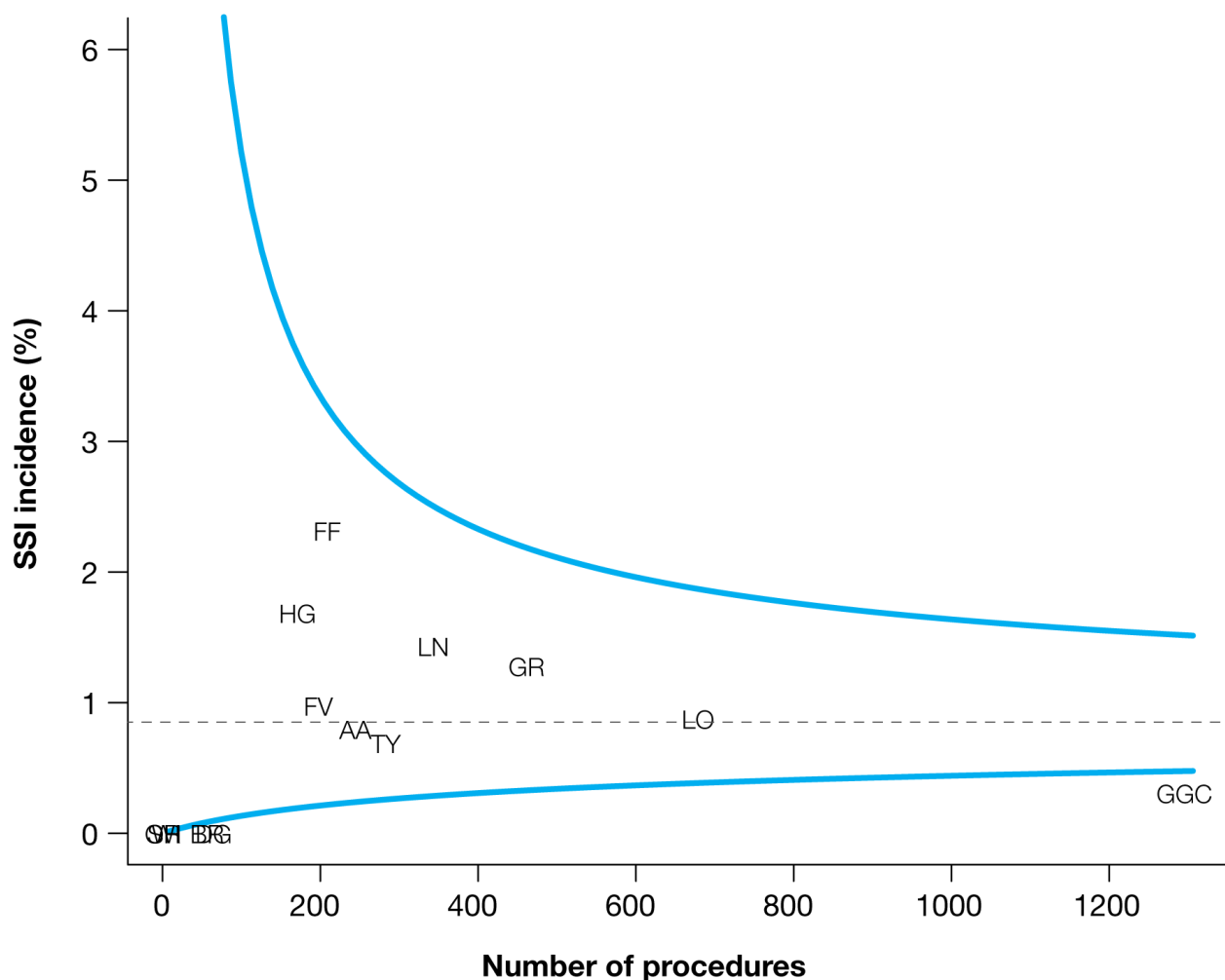
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 SSI	Q3 Procedures	Q3 Incidence	Q4 SSI	Q4 Procedures	Q4 Incidence
AA	5	303	1.7	2	251	0.8
BR	1	57	1.8	0	63	0.0
DG	1	86	1.2	0	72	0.0
FF	6	236	2.5	5	216	2.3
FV	2	219	0.9	2	205	1.0
GR	10	463	2.2	6	469	1.3
GGC	3	1,367	0.2	4	1,306	0.3
HG	4	216	1.9	3	178	1.7
LN	4	398	1.0	5	349	1.4
LO	12	718	1.7	6	685	0.9
OR	0	8	0.0	0	8	0.0
SH	0	10	0.0	0	9	0.0
TY	3	311	1.0	2	290	0.7
WI	0	16	0.0	0	11	0.0
Scotland	51	4,408	1.2	35	4,112	0.9

- Source of data is Surgical Site Infection Reporting System (SSIRS)
- Figures include any updates received following the last publication

Funnel plot of caesarean section SSI incidence (per 100 procedures) in inpatients and post discharge surveillance to day 10 for all NHS Boards in Scotland

Q4 (October to December 2019)



- Source of data is Surgical Site Infection Reporting System (SSIRS)
- NHS Orkney, NHS Shetland and NHS Western Isles, and NHS Borders and NHS Dumfries & Galloway overlap

**Hip arthroplasty procedures and SSI incidence (per 100 procedures) for inpatients
and on readmission to day 30**

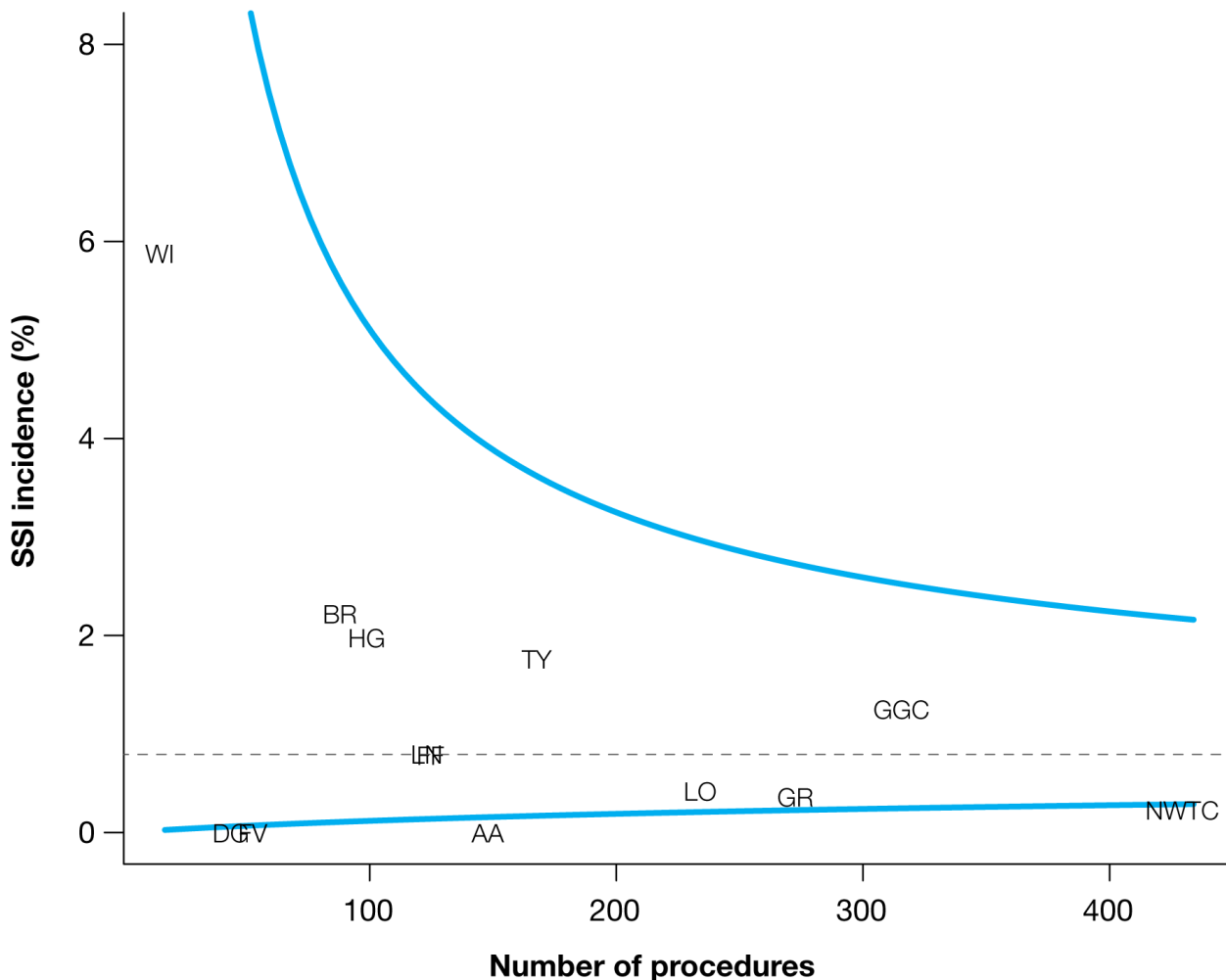
Q3 (July to September 2019) compared to Q4 (October to December 2019)

NHS Board	Q3 SSI	Q3 Procedures	Q3 Incidence	Q4 SSI	Q4 Procedures	Q4 Incidence
AA	0	129	0.0	0	150	0.0
BR	1	74	1.4	2	90	2.2
DG	0	49	0.0	0	46	0.0
FF	2	142	1.4	1	127	0.8
FV	0	67	0.0	0	55	0.0
GR	2	268	0.7	1	275	0.4
GGC	4	348	1.1	4	319	1.3
HG	2	105	1.9	2	101	2.0
LN	1	93	1.1	1	125	0.8
LO	1	241	0.4	1	236	0.4
NWTC	3	439	0.7	1	434	0.2
TY	1	145	0.7	3	170	1.8
WI	0	21	0.0	1	17	5.9
Scotland	17	2,121	0.8	17	2,145	0.8

- Source of data is Surgical Site Infection Reporting System (SSIRS)
- Figures include any updates received following the last publication

Funnel plot of hip arthroplasty SSI incidence (per 100 procedures) in inpatients and on readmission to day 30 for all NHS Boards in Scotland

Q4 (October to December 2019)



- Source of data is Surgical Site Infection Reporting System (SSIRS)
- NHS Fife and NHS Lanarkshire, and NHS Dumfries & Galloway and NHS Forth Valley overlap

Meticillin-Resistant *Staphylococcus Aureus* (MRSA) Screening

The majority of individuals affected by Meticillin-Resistant *Staphylococcus Aureus* (MRSA) are colonised. This is when an organism lives harmlessly on the body with no ill effects. Infection is when the organism gains entry or penetrates tissue or sterile sites and causes disease process. MRSA is a form of *Staphylococcus aureus* (*S. aureus*). It is transmitted in the same way and causes the same range of infection but is resistant to commonly used antibiotics. This makes MRSA infections more difficult and costly to treat, hence every effort must be made to prevent spread⁵.

In early 2011, the Scottish Government announced new national minimum MRSA screening recommendations. Targeted MRSA screening by specialty (implemented in January 2010) has now been replaced by a Clinical Risk Assessment (CRA) followed by a nose and perineal swab (if the patient answers yes to any of the CRA questions). National Key Performance Indicators (KPIs) have now been implemented with Boards being required to achieve 90% compliance with CRA completion.

MRSA CRA screening compliance for Quarter 4* (January – March 2020) within NHS Grampian was 85%.

**Please note that Quarter 4 for MRSA CRA screening is January – March 2020*

	2018-19 Q4	2019-20 Q1	2019-20 Q2	2019-20 Q3	2019-20 Q4
Grampian	87%	89%	86%	81%	85%
Scotland	83%	89%	88%	88%	87%

More information on the national surveillance programme for MRSA screening can be found at:

<https://www.hps.scot.nhs.uk/web-resources-container/protocol-for-cra-mrsa-screening-national-rollout-in-scotland/>

Carbapenemase Producing Enterobacteriaceae (CPE) Screening

Infections caused by CPE are associated with high rates of morbidity and mortality and can have severe clinical consequences. Treatment of these infections is increasingly difficult as these organisms are often resistant to many and sometimes all available antibiotics. The number of CPE cases in Scotland remains low however we have seen a 50% increase in cases between 2016 (73) and 2017 (108) across Scotland.

Screening and data collection for CPE commenced 1st April 2018 at the request of the Scottish Government. All NHS Boards are required to undertake screening compliance as per the mandatory requirements of DL (2017) 2.

CPE Clinical Risk Assessment (CRA) screening compliance for Quarter 4* (January – March 2020) within NHS Grampian was 93%.

**Please note that Quarter 4 for CPE CRA screening is January – March 2020*

	2018-19 Q4	2019-20 Q1	2019-20 Q2	2019-20 Q3	2019-20 Q4
Grampian	97%	98%	96%	88%	93%
Scotland	81%	86%	86%	85%	85%

More information on CPE screening can be found at:

<https://www.hps.scot.nhs.uk/resourcedocument.aspx?id=6990>

Enteric Incidents and Outbreaks

The following table provides information for complete and partial ward closures in NHS Grampian due to enteric outbreaks (including confirmed or suspected Norovirus).

	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Ward Closures	2	2	0	0	1	1	2	4	3	1	0	0
Bay Closures	0	0	0	0	1	1	5	0	0	0	0	0

Monday Point Prevalence Surveillance figures are reported to Health Protection Scotland. These capture the significant outbreaks of Norovirus in NHS Grampian and the prevalence of Norovirus activity in close to real time. They are not and should not be interpreted as data for benchmarking or comparison. The data can be used for the assessment of risk and Norovirus outbreak preparedness only.

Data on the numbers of wards closed across NHS Scotland due to confirmed or suspected Norovirus are available from HPS at:

<https://www.hps.scot.nhs.uk/a-to-z-of-topics/norovirus/#data>

(Do not use Internet Explorer to open this hyperlink; use Google Chrome instead)

Incident Management Team (IMT) and Preliminary* Assessment Group (PAG) Meetings

In NHS Grampian the Infection Prevention and Control Team are continually alert for an actual or potential healthcare incident, infection and outbreak or data exceedance. We apply Chapter 3 of the National Infection Prevention and Control Manual⁶. The Healthcare Infection Incident Assessment Tool (HIIAT)⁷ guides assessment, communication and escalation of risk within the Health Board, Health Protection Scotland and Scottish Government. Multi-disciplinary meetings to address the infection risk are called Preliminary* Assessment Groups (PAGs) and Incident Management Team meetings (IMTs).

A PAG may be convened to assess and determine if an IMT is required or whether there has been a greater than expected data exceedance such as non-compliant hand hygiene audits.

An IMT is defined as a multi-disciplinary, multi-agency group with responsibility for investigating and managing an incident⁸.

PAGs and IMTs can be supported by NHS Grampian's Health Protection Team and Health Protection Scotland.

In NHS Grampian, between January and March 2020, there were a total of 2 IMT meetings and 9 PAG meetings. These meetings establish and monitor risk control measures for patient and staff safety.

**Preliminary Assessment Group (PAG) meetings were previously referred to as Problem Assessment Group (PAG) meetings. In November 2019, following feedback from clinical staff, the NHS Grampian Infection Prevention & Control Team, on behalf of the NHS Grampian HAI Executive, changed the name from 'Problem' to 'Preliminary'. It is hoped that the change in name will make the PAG process less intimidating for clinical staff.*

IMT meetings January – March 2020			
Date	Area	Reason	HIIAT assessment*
03.02.20	Dental, Inverurie	Instrument Decontamination	Green
21.02.20	HDU, RACH	HAI-related Death (Para Influenza)	20.02.20 – Red
			22.02.20 - Green

PAG meetings January – March 2020			
Date	Area	Reason	HIIAT assessment*
06.01.20	Ward 207, ARI	Influenza A	Green
06.01.20	Inverurie Dialysis	Influenza A	Green
08.01.20	The Oaks, Elgin	Water Safety	Green
15.01.20	Ward 304, ARI	Influenza A	Green
17.01.20	Links Unit, WGH	Influenza	Red
21.01.20	Ward 217, ARI	Water Safety	Green
31.01.20	Ward 109, ARI	Influenza	Green
06.02.20	Ward 112, ARI	Pseudomonas	Green
19.03.20	ITU, ARI	Pseudomonas Aeruginosa	Green

***HIIAT assessment (dynamic assessment accurate at the time of reporting)**

All Minor = **Green**

3 Minor and 1 Moderate = **Green**

No Major and 2-4 Moderate = **Amber**

Any Major = **Red**

Cleaning and the Healthcare Environment

Between January and March 2020, NHS Grampian, as a whole, were compliant with the required cleanliness standards, as monitored by the Facilities Monitoring Tool.

Information on how hospitals carry out the cleaning and estates audits can be found at:

<http://www.hfs.scot.nhs.uk/publications-/guidance-publications/?keywords=monitoring+framework§ion=&category=&month=&year=&show=10>

	January 2020 Domestic	January 2020 Estates	February 2020 Domestic	February 2020 Estates	March 2020 Domestic	March 2020 Estates	Quarter 4 Domestic	Quarter 4 Estates
NHS Grampian Overall	93.30	94.80	93.15	94.50	93.30	94.25	93.25	94.52
Aberdeen Maternity Hospital, RACH & Outlying Areas	92.30	93.80	93.30	91.80	92.75	93.40	92.78	93.00
Aberdeen Royal Infirmary	92.40	94.55	91.50	95.00	92.10	93.55	92.00	94.37
Aberdeenshire North & Moray Community	96.00	92.60	95.70	93.35	94.40	91.35	95.37	92.43
Aberdeenshire South & Aberdeen City	97.60	99.80	96.40	97.05	95.05	97.95	96.35	98.27
Dr Gray's Hospital	93.95	94.75	93.40	94.60	94.10	94.55	93.82	94.63
Royal Cornhill Hospital	95.80	94.75	91.60	93.50	92.60	93.90	93.33	94.05
Woodend Hospital	93.20	95.40	93.90	95.95	93.85	96.45	93.65	95.93

Healthcare Associated Infection Reporting Template (HAIRT)

Section 2 – Healthcare Associated Infection Report Cards

The following section is a series of ‘Report Cards’ that provide information, for each acute hospital and key community hospitals in the Board, on the number of cases of *Staphylococcus aureus* blood stream infections (also broken down into MSSA and MRSA) and *Clostridioides* (formerly *Clostridium*) *difficile* infections, as well as cleaning compliance and hand hygiene. In addition, there is a single report card which covers all community hospitals [which do not have individual cards], and a report which covers infections identified as having been contracted from outwith hospital. The information in the report cards is provisional local data, and may differ from the national surveillance reports carried out by Health Protection Scotland and Health Facilities Scotland. The national reports are official statistics which undergo rigorous validation, which means final national figures may differ from those reported here. However, these reports aim to provide more detailed and up to date information on HAI activities at local level than is possible to provide through the national statistics.

Understanding the Report Cards – Infection Case Numbers

Clostridioides (formerly *Clostridium*) *difficile* infections (CDI) and *Staphylococcus aureus* bacteraemia (SAB) cases are presented for each hospital, broken down by month. *Staphylococcus aureus* bacteraemia (SAB) cases are further broken down into Meticillin Sensitive *Staphylococcus aureus* (MSSA) and Meticillin Resistant *Staphylococcus aureus* (MRSA).

For each hospital the total number of cases for each month are those which have been reported as positive from a laboratory report on samples taken more than 48 hours after admission. For the purposes of these reports, positive samples taken from patients within 48 hours of admission will be considered to be confirmation that the infection was contracted prior to hospital admission and will be shown in the “out of hospital” report card.

Targets

The national targets associated with reductions in CDIs and SABs are currently under review. More information on these can be found on the Scotland Performs website:

<http://www.gov.scot/About/Performance/scotPerforms/NHSScotlandperformance>

Understanding the Report Cards – Cleaning Compliance

Hospitals strive to keep the care environment as clean as possible. This is monitored through cleaning and estates compliance audits. More information on how hospitals carry out these audits can be found on the Health Facilities Scotland website:

<http://www.hfs.scot.nhs.uk/publications-/guidance-publications/?keywords=monitoring+framework§ion=&category=&month=&year=&show=10>

Understanding the Report Cards – Hand Hygiene Compliance

Hospitals carry out regular audits of how well their staff are complying with hand hygiene. Each hospital report card presents the combined percentage of hand hygiene compliance with both opportunity taken and technique used broken down by staff group.

Understanding the Report Cards – ‘Out of Hospital Infections’

Clostridioides (formerly *Clostridium*) *difficile* infections and *Staphylococcus aureus* (including MRSA) bacteraemia cases are all associated with being treated in hospitals. However, this is not the only place a patient may contract an infection. This total will also include infection from community sources such as GP surgeries and care homes. The final Report Card report in this section covers ‘Out of Hospital Infections’ and reports on SAB and CDI cases reported to a Health Board which are not attributable to a hospital.

NHS BOARD REPORT CARD – NHS Grampian

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	1	0	0	0	0	0	0	0	0	1	0
MSSA	15	13	9	10	7	9	12	10	11	11	14	6
Total SABS	15	14	9	10	7	9	12	10	11	11	15	6

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	2	7	6	5	4	7	11	5	9	10	8	9

Cleaning Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Board Total	94	93	93	92	93	93	94	93	93	93	93	93

Estates Monitoring Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Board Total	95	94	94	94	94	94	95	94	95	95	95	94

Hand Hygiene Monitoring Compliance (%)

	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
AHP	98	98	99	99	99	99	98	98	99	98	99	99
Ancillary	93	95	93	92	96	97	95	97	95	92	93	97
Medical	96	96	97	96	96	96	95	97	96	95	95	97
Nurse	99	98	99	98	98	98	98	98	99	98	99	99

NHS HOSPITAL A REPORT CARD – Aberdeen Royal Infirmary

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	5	1	4	3	4	2	3	5	1	1	0
Total SABS	0	5	1	4	3	4	2	3	5	1	1	0

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	1	3	0	2	0	2	4	2	3	2	1	3

Cleaning Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
ARI Total	93	92	92	91	91	90	92	91	93	92	92	92

Estates Monitoring Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
ARI Total	95	95	95	94	95	94	95	94	95	95	95	94

NHS HOSPITAL B REPORT CARD – Dr Gray’s Hospital

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	0	0	0	1	0	1	0	0	0	0	0
Total SABS	0	0	0	0	1	0	1	0	0	0	0	0

Clostridioides (formerly *Clostridium*) *difficile* infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	0	0	0	0	0	0	1	0	1	1	0	0

Cleaning Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
DGH Total	94	94	94	93	94	95	94	94	94	94	93	94

Estates Monitoring Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
DGH Total	90	88	89	93	94	92	94	95	95	95	95	95

NHS HOSPITAL C REPORT CARD – Woodend Hospital

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	1	0	0	0	0	0	0	0	0	1	1	0
Total SABS	1	0	0	0	0	0	0	0	0	1	1	0

Clostridioides (formerly *Clostridium*) *difficile* infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	0	0	0	0	0	0	0	0	1	0	0	0

Cleaning Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
WGH Total	95	95	95	95	94	94	94	94	92	93	94	94

Estates Monitoring Compliance (%)

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
WGH Total	96	96	96	96	95	97	96	96	95	95	96	96

OTHER NHS HOSPITALS REPORT CARD

The other hospitals covered in this report card include:

Aberdeen Maternity Hospital
 Royal Cornhill Hospital
 Royal Aberdeen Children's Hospital
 Roxburgh House
 All Community Hospitals

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	1	0	0	1	1	0	1	0	0	1	0	0
Total SABS	1	0	0	1	1	0	1	0	0	1	0	0

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	0	0	0	0	0	1	0	0	0	0	1	1

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
MRSA	0	1	0	0	0	0	0	0	0	0	1	0
MSSA	13	8	8	5	2	5	8	7	6	8	12	6
Total SABS	13	9	8	5	2	5	8	7	6	8	13	6

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
Total CDIs (Ages 15+)	1	4	6	3	4	4	6	3	4	7	6	5

References

- 1 – 4: Health Protection Scotland (2019) *Quarterly epidemiological data on Clostridioides Difficile infection, Escherichia coli bacteraemia, Staphylococcus aureus bacteraemia and Surgical Site Infection in Scotland*. Available at: https://hpspubsrepo.blob.core.windows.net/hps-website/nss/2744/documents/2_2019-04-02%20SAB-CDI-EColi-SSI-Infections-Q4-2018-Report%20v1.2.pdf
- 5: NHS Grampian Staff Protocol for the Screening and Management of Patients with Meticillin-Resistant Staphylococcus aureus (MRSA) within NHS Healthcare Settings (Excluding Care Homes). Available at: <http://nhsgintranet.grampian.scot.nhs.uk/depts/InfectionPreventionAndControlManual/Documents/NHSG%20Staff%20Protocol%20for%20the%20Treatment%20of%20Patients%20with%20MRSA%20in%20Healthcare%20Settings%20March%202017.pdf>
- 6: Health Protection Scotland (2019) National Infection prevention and Control Manual – Chapter 3. Available at: <http://www.nipcm.hps.scot.nhs.uk/chapter-3-healthcare-infection-incidents-outbreaks-and-data-exceedance/>
- 7: Health Protection Scotland (2019) Healthcare Infection Incident Assessment Tool. Available at: <http://www.nipcm.hps.scot.nhs.uk/appendices/appendix-14-mandatory-nipcm-healthcare-infection-incident-assessment-tool-hiat/>
- 8: Management of Public Health Incidents: Guidance on the Role and Responsibilities of NHS Led Incident Management Teams. Available at: https://hpspubsrepo.blob.core.windows.net/hps-website/nss/1673/documents/1_shpn-12-mphi-21062017.pdf