

**Healthcare Associated Infection (HAI)
Quarterly Report – February 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 3 (July to September 2019) published on 7th January 2020.

HAI Summary - Quarter Ending September 2019

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

The total number of CDI cases in patients reported to HPS was 16 – 5.7% of the total across Scotland and the same total as in the previous quarter.

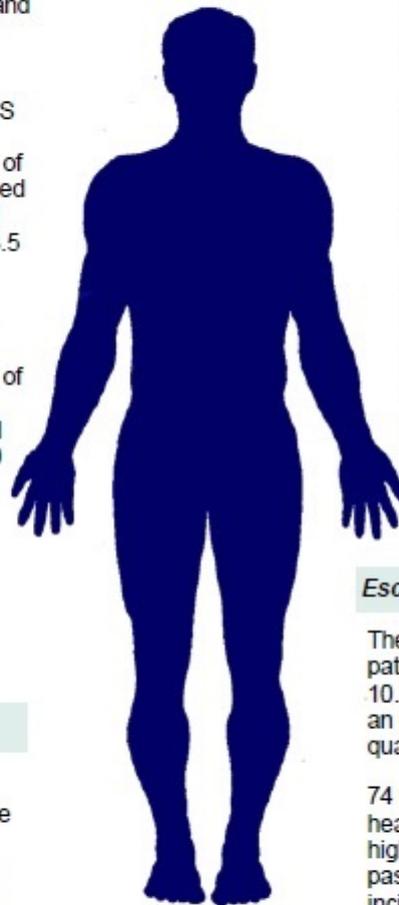
11 CDI cases were reported to HPS as healthcare associated. This corresponded to an incidence rate of 8.3 cases per 100,000 total occupied bed days (TOBDs) which was well below the Scotland wide rate of 13.5 per 100,000 TOBDs.

Five CDI cases were reported as community associated. This corresponded to an incidence rate of 3.4 cases per 100,000 population, which was lower than the Scotland wide rate of 5.5 cases per 100,000 population.

Surgical Site Infection (SSI)

10 cases (2.2%) of SSI following caesarean section procedures were reported to HPS, detected either during inpatient stay or by PDS to day 10. This was twice the proportion across Scotland (1.1%) and the most in any quarter since December 2014.

Two cases (0.7%) 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 27 – 7.4% of the total across Scotland and a decrease of 28.9% from the previous quarter.

21 SAB cases were reported to HPS as healthcare associated. This corresponded to an incidence rate of 15.9 cases per 100,000 TOBDs. The Scotland wide rate was higher at 17.5 cases per 100,000 TOBDs.

Six SAB cases were reported as community associated – the lowest in any quarter during the past five years. This corresponds to an incidence rate of 4.1 cases per 100,000 population, well below the Scotland wide rate of 7.4 cases per 100,000 population.

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

The total number of ECB cases in patients reported to HPS was 124 – 10.2% of the total across Scotland and an increase of 22.8% from the previous quarter.

74 ECB cases were reported to HPS as healthcare associated. This was the highest number during any quarter of the past three years and corresponded to an incidence rate 56.1 cases per 100,000 TOBDs. This was well above the Scotland wide rate of 40.3 cases per 100,000 TOBDs.

50 ECB cases were reported as community associated. This corresponded to an incidence rate of 33.9 cases per 100,000 population, which was below the Scotland wide rate of 44.2 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 3 (October – December 2019) was 81%, which is below both the compliance target of 90% and the national average (88%).

Carbapenemase Producing Enterobacteriaceae (CPE) Screening

CPE (CRA) screening compliance for Quarter 3 (October – December 2019) was 88%, which is below the compliance target (90%), but above the national average (85%).

Norovirus

For the period October – December 2019 there were 14 wards closed (either completely or partially) in NHS Grampian due to enteric illness. Norovirus was confirmed in 9 of these wards.

Health Facilities Scotland (HFS)

The cleaning compliance for October – December 2019 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	Jul – Sep 2019, HPS	13.5	8.3	Green
	Community Associated Infection			5.5	3.4	Green
<i>E coli</i> Bacteraemia	Healthcare Associated Infection	No target (rate per 100,000 bed days)	Jul – Sep 2019, HPS	40.3	56.1	Red
	Community Associated Infection	No target (annualised rate per 100,000 population)		44.2	33.9	Green
SABs	Healthcare Associated Infection	To be confirmed by Scottish Government	Jul – Sep 2019, HPS	17.5	15.9	Green
	Community Associated Infection			7.4	4.1	Green
Surgical Site Infections (SSIs)	Caesarean Section	-	Jul – Sep 2019, HPS	1.1	2.2	Amber
	Hip Arthroplasty	-	Jul – Sep 2019, HPS	0.8	0.7	Green
MRSA (CRA) screening	-	HPS 90%	Oct – Dec 2019, HPS	88	81	Amber
CPE (CRA) screening	-	HPS 90%	Oct – Dec 2019, HPS	85	88	Amber
Cleaning	All clinical areas	HFS 90%	Oct – Dec 2019, NHSG	N/A	93	Green
Estates		HFS 90%	Oct – Dec 2019, NHSG	N/A	95	Green
Hand Hygiene	Nursing staff	SGHD 90%	Oct – Dec 2019, NHSG	N/A	98	Green
	Medical staff	SGHD 90%	Oct – Dec 2019, NHSG	N/A	96	Green
	Allied Health Professionals	SGHD 90%	Oct – Dec 2019, NHSG	N/A	98	Green
	Ancillary staff	SGHD 90%	Oct – Dec 2019, NHSG	N/A	96	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
grace.johnston@nhs.net

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 are expected from SAPG in early 2020 and at this time the local IV to oral switch (IVOST) policy will be updated and relaunched.

3. Use of WHO Access antibiotics (NHSE list) \geq 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 February Antimicrobial Management Team meeting.

***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

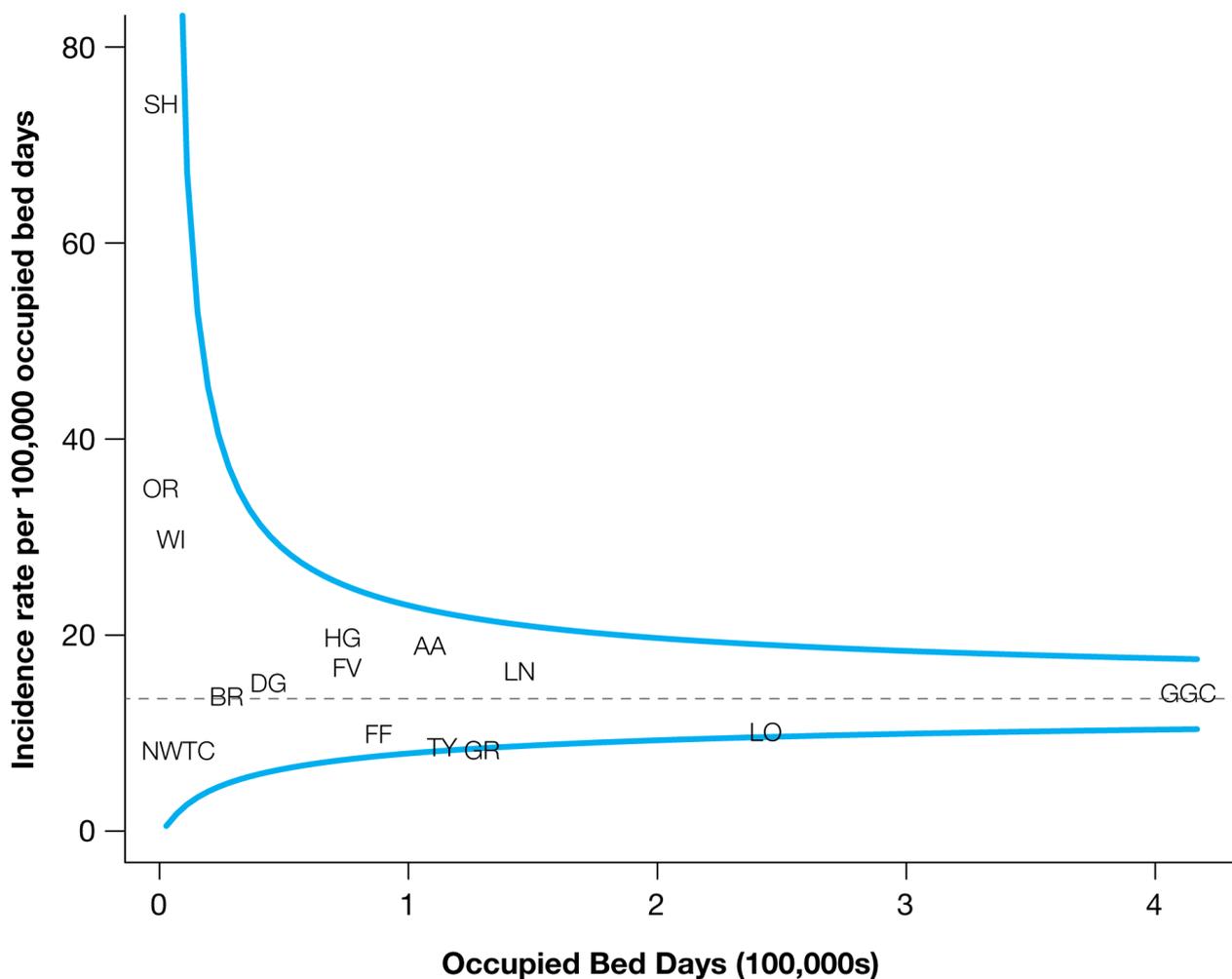
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 Cases	Q2 Bed Days	Q2 Rate	Q3 Cases	Q3 Bed Days	Q3 Rate
AA	15	109,780	13.7	21	110,670	19.0
BR	4	29,746	13.4	4	28,962	13.8
DG	6	45,667	13.1	7	46,074	15.2
FF	6	87,857	6.8	9	90,276	10.0
FV	11	73,737	14.9	13	77,669	16.7
GR	10	131,370	7.6	11	131,950	8.3
GGC	71	419,871	16.9	59	416,741	14.2
HG	6	74,804	8.0	15	75,715	19.8
LN	17	145,187	11.7	24	146,465	16.4
LO	30	244,255	12.3	25	245,501	10.2
NWTC	0	11,897	0.0	1	12,067	8.3
OR	0	3,445	0.0	1	2,854	35.0
SH	1	2,542	39.3	2	2,694	74.2
TY	6	113,495	5.3	10	115,796	8.6
WI	1	7,013	14.3	2	6,702	29.8
Scotland	184	1,500,666	12.3	204	1,510,136	13.5

- 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

Q3 (July to September 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

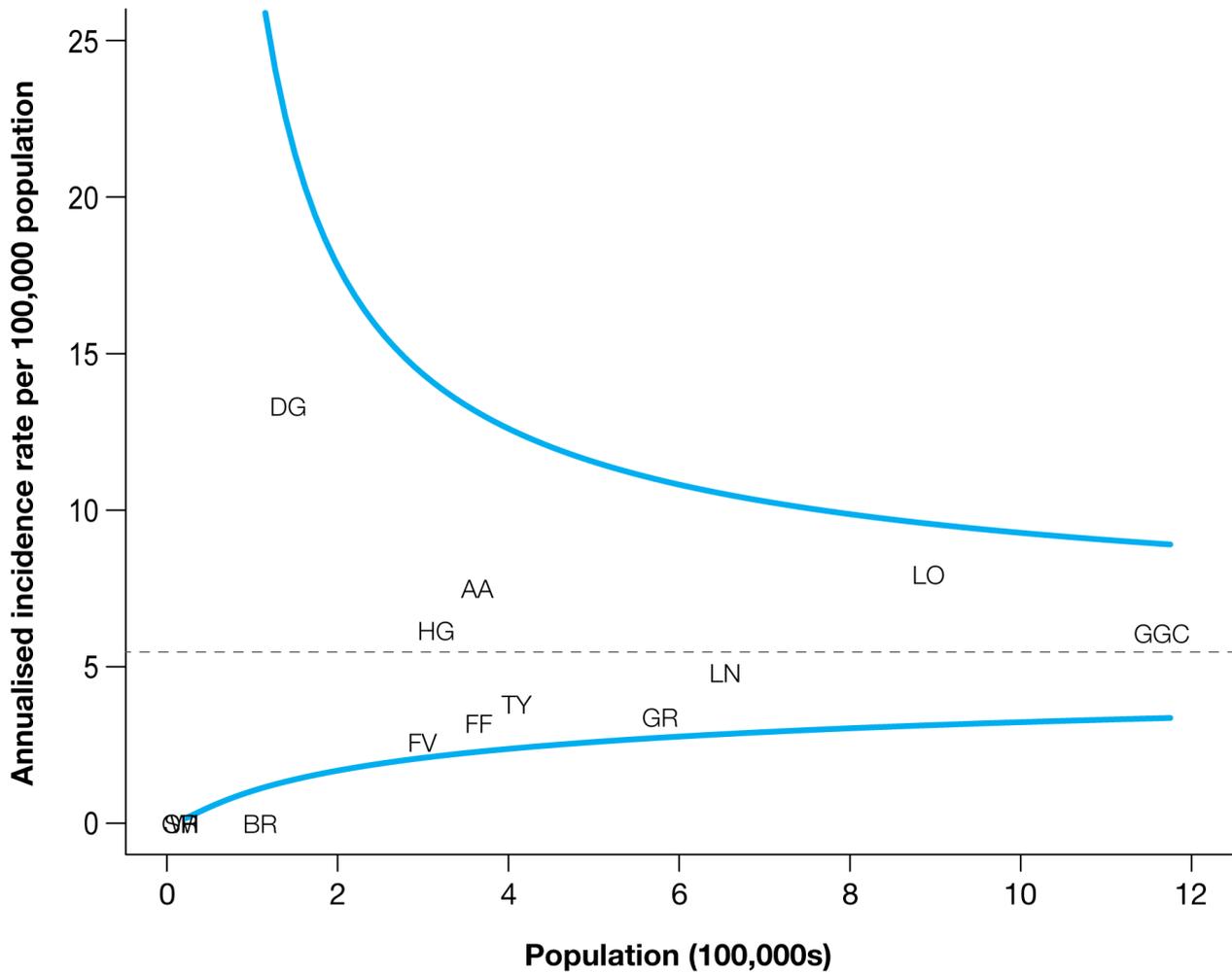
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 Cases	Q2 Population	Q2 Rate	Q3 Cases	Q3 Population	Q3 Rate
AA	8	369,670	8.7	7	369,670	7.5
BR	0	115,270	0.0	0	115,270	0.0
DG	4	148,790	10.8	5	148,790	13.3
FF	3	371,910	3.2	3	371,910	3.2
FV	0	306,070	0.0	2	306,070	2.6
GR	6	584,550	4.1	5	584,550	3.4
GGC	12	1,174,980	4.1	18	1,174,980	6.1
HG	5	321,800	6.2	5	321,800	6.2
LN	13	659,200	7.9	8	659,200	4.8
LO	11	897,770	4.9	18	897,770	8.0
OR	0	22,190	0.0	0	22,190	0.0
SH	0	22,990	0.0	0	22,990	0.0
TY	3	416,080	2.9	4	416,080	3.8
WI	1	26,830	14.9	0	26,830	0.0
Scotland	66	5,438,100	4.9	75	5,438,100	5.5

- 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

Q3 (July to September 2019)



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

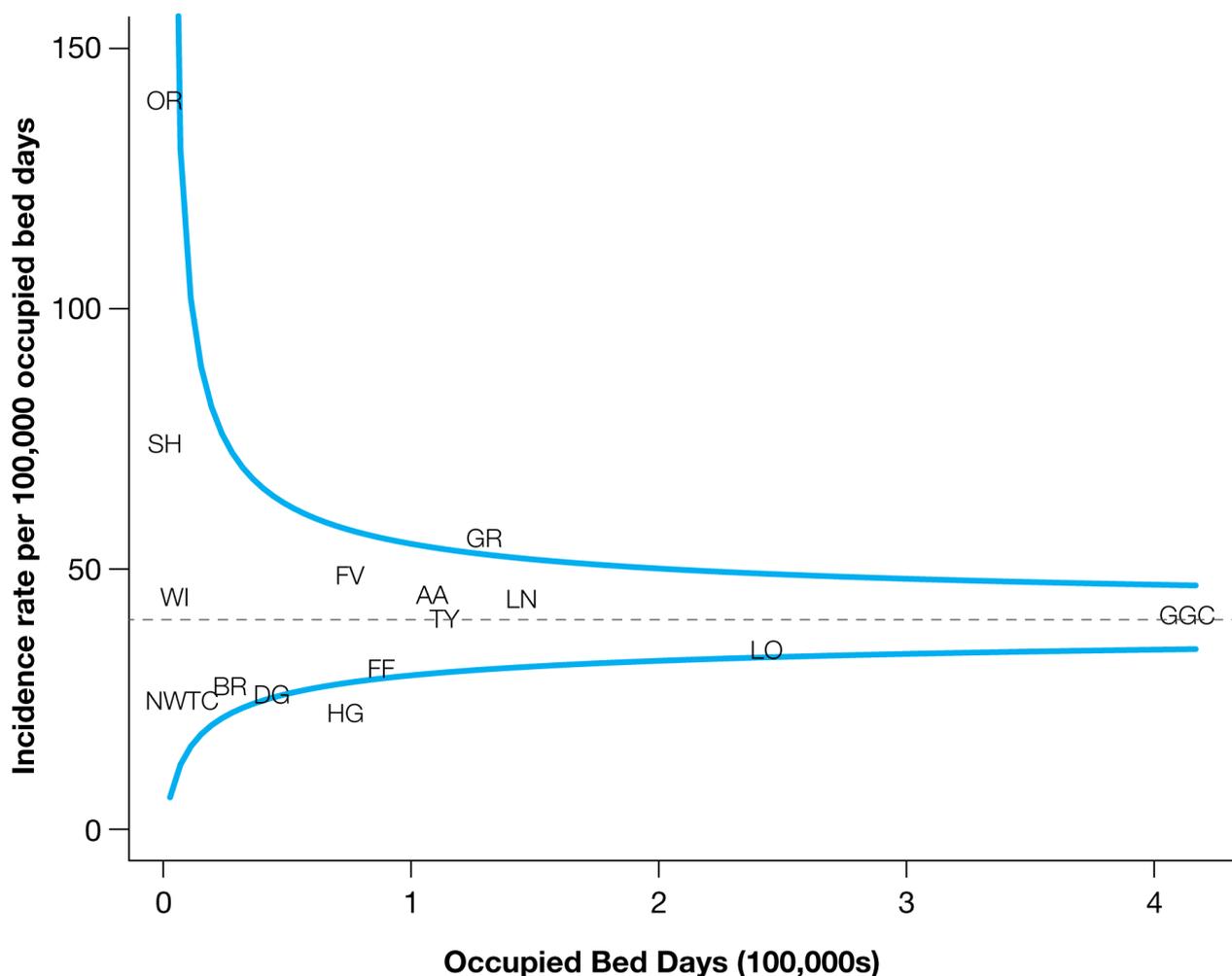
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 Cases	Q2 Bed Days	Q2 Rate	Q3 Cases	Q3 Bed Days	Q3 Rate
AA	46	109,780	41.9	50	110,670	45.2
BR	15	29,746	50.4	8	28,962	27.6
DG	15	45,667	32.8	12	46,074	26.0
FF	37	87,857	42.1	28	90,276	31.0
FV	39	73,737	52.9	38	77,669	48.9
GR	52	131,370	39.6	74	131,950	56.1
GGC	164	419,871	39.1	172	416,741	41.3
HG	19	74,804	25.4	17	75,715	22.5
LN	64	145,187	44.1	65	146,465	44.4
LO	82	244,255	33.6	85	245,501	34.6
NWTC	3	11,897	25.2	3	12,067	24.9
OR	2	3,445	58.1	4	2,854	140.2
SH	3	2,542	118.0	2	2,694	74.2
TY	41	113,495	36.1	47	115,796	40.6
WI	2	7,013	28.5	3	6,702	44.8
Scotland	584	1,500,666	38.9	608	1,510,136	40.3

- 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

Q3 (July to September 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

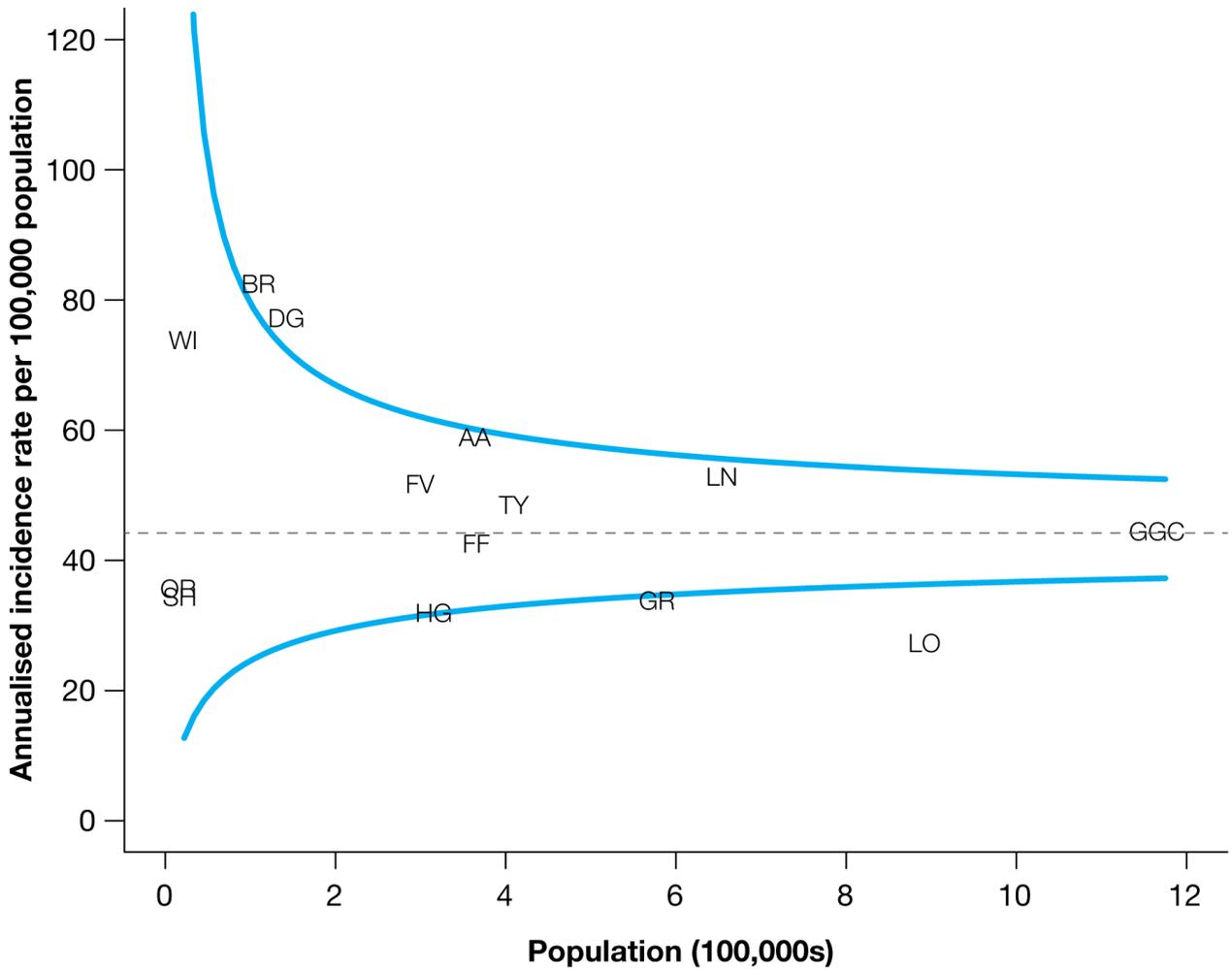
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 Cases	Q2 Population	Q2 Rate	Q3 Cases	Q3 Population	Q3 Rate
AA	57	369,670	61.8	55	369,670	59.0
BR	19	115,270	66.1	24	115,270	82.6
DG	20	148,790	53.9	29	148,790	77.3
FF	33	371,910	35.6	40	371,910	42.7
FV	41	306,070	53.7	40	306,070	51.8
GR	49	584,550	33.6	50	584,550	33.9
GGC	134	1,174,980	45.7	132	1,174,980	44.6
HG	41	321,800	51.1	26	321,800	32.1
LN	80	659,200	48.7	88	659,200	53.0
LO	69	897,770	30.8	62	897,770	27.4
OR	5	22,190	90.4	2	22,190	35.8
SH	3	22,990	52.3	2	22,990	34.5
TY	47	416,080	45.3	51	416,080	48.6
WI	6	26,830	89.7	5	26,830	73.9
Scotland	604	5,438,100	44.5	606	5,438,100	44.2

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

Q3 (July to September 2019)



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

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

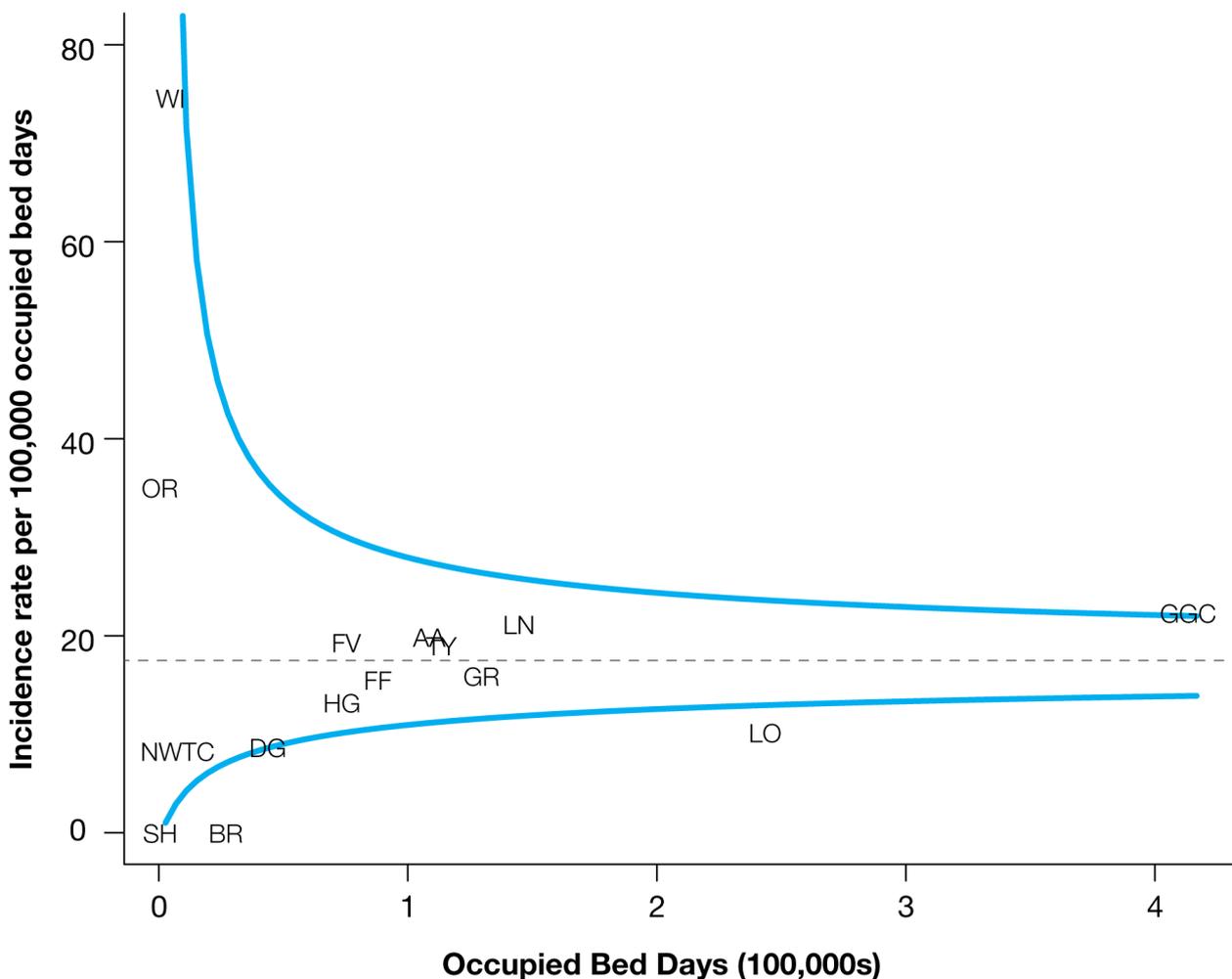
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GGC	84	419,871	20.0	93	416,741	22.3
HG	10	74,804	13.4	10	75,715	13.2
LN	27	145,187	18.6	31	146,465	21.2
LO	25	244,255	10.2	25	245,501	10.2
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OR	2	3,445	58.1	1	2,854	35.0
SH	1	2,542	39.3	0	2,694	0.0
TY	22	113,495	19.4	22	115,796	19.0
WI	2	7,013	28.5	5	6,702	74.6
Scotland	251	1,500,666	16.7	264	1,510,136	17.5

- 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

Q3 (July to September 2019)



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

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

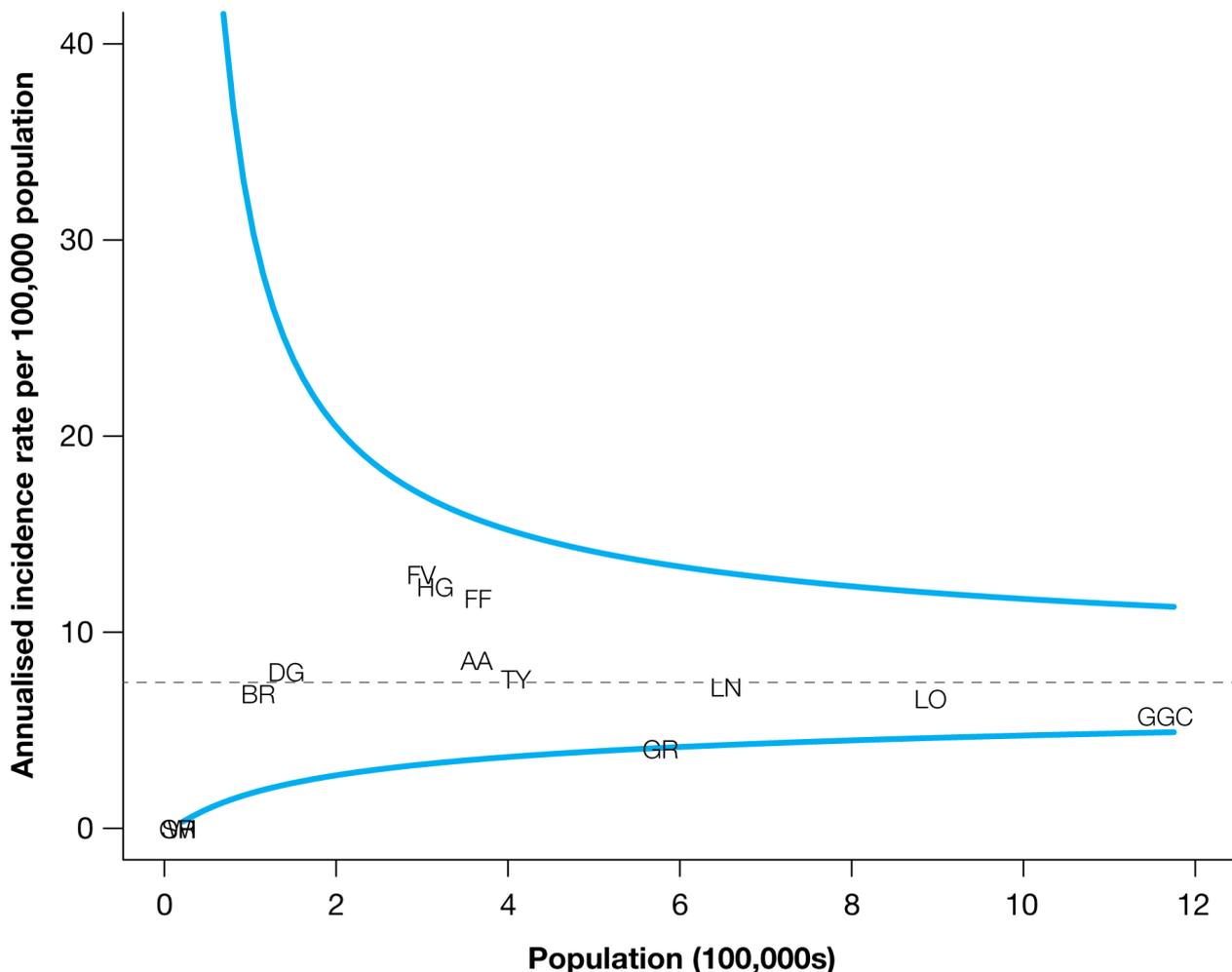
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FF	9	371,910	9.7	11	371,910	11.7
FV	9	306,070	11.8	10	306,070	13.0
GR	12	584,550	8.2	6	584,550	4.1
GGC	18	1,174,980	6.1	17	1,174,980	5.7
HG	6	321,800	7.5	10	321,800	12.3
LN	11	659,200	6.7	12	659,200	7.2
LO	31	897,770	13.8	15	897,770	6.6
OR	1	22,190	18.1	0	22,190	0.0
SH	2	22,990	34.9	0	22,990	0.0
TY	10	416,080	9.6	8	416,080	7.6
WI	0	26,830	0.0	0	26,830	0.0
Scotland	133	5,438,100	9.8	102	5,438,100	7.4

- 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

Q3 (July to September 2019)



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

Healthcare Associated SABs July – September 2019	
Source	Number
Devices (PICC/Midline, PVC, CVC tunnelled, CVC non-tunnelled, PEG)	8
Skin & soft tissue (ulcer, skin break)	4
Respiratory infection	1
Contaminant	1
Not known	2
Total Healthcare Associated SABs	16

Community Associated SABs July – September 2019	
Source	Number
Skin & soft tissue (eczema, cellulitis, ulcer)	3
Respiratory infection	1
Dental	1
Not known	1
Total Community Associated SABs	6

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

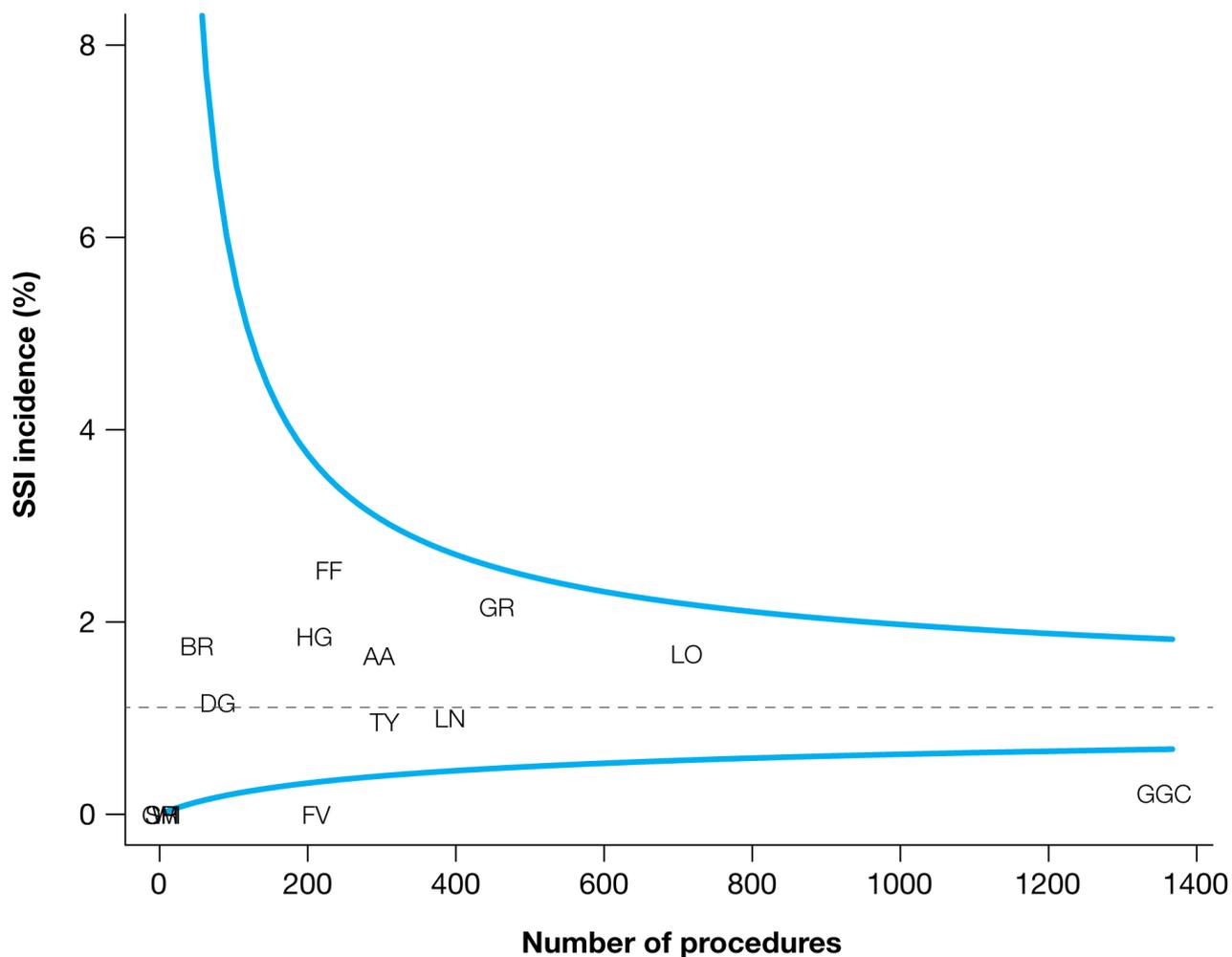
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 SSI	Q2 Procedures	Q2 Incidence	Q3 SSI	Q3 Procedures	Q3 Incidence
AA	2	279	0.7	5	303	1.7
BR	0	74	0.0	1	57	1.8
DG	0	81	0.0	1	86	1.2
FF	4	204	2.0	6	236	2.5
FV	2	222	0.9	0	219	0.0
GR	4	472	1.7	10	463	2.2
GGC	8	1,219	0.3	3	1,367	0.7
HG	1	182	0.5	4	216	1.9
LN	6	376	1.6	4	398	1.0
LO	13	693	1.9	12	718	1.7
OR	1	8	12.5	0	8	0.0
SH	0	8	0.0	0	10	0.0
TY	2	284	0.7	3	311	1.0
WI	0	15	0.0	0	16	0.0
Scotland	43	4,118	1.0	49	4,408	1.1

- 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

Q3 (July to September 2019)



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

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

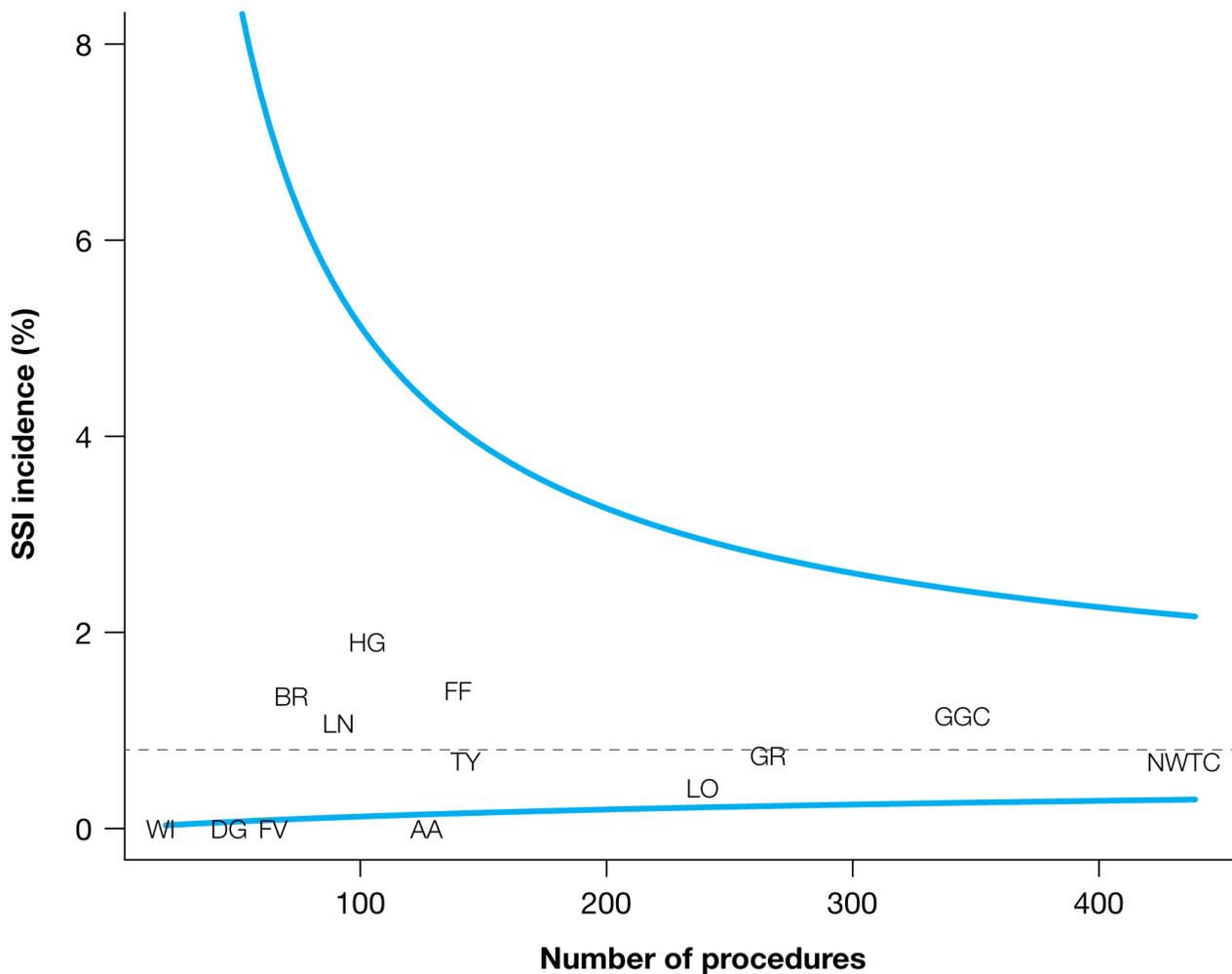
Q2 (April to June 2019) compared to Q3 (July to September 2019)

NHS Board	Q2 SSI	Q2 Procedures	Q2 Incidence	Q3 SSI	Q3 Procedures	Q3 Incidence
AA	0	158	0.0	0	129	0.0
BR	2	97	2.1	1	74	1.4
DG	0	45	0.0	0	49	0.0
FF	1	130	0.8	2	142	1.4
FV	0	71	0.0	0	67	0.0
GR	1	308	0.3	2	268	0.7
GGC	0	397	0.0	4	348	1.1
HG	0	120	0.0	2	105	1.9
LN	1	107	0.9	1	93	1.1
LO	0	231	0.0	1	241	0.4
NWTC	4	424	0.9	3	439	0.7
TY	1	161	0.6	1	145	0.7
WI	0	8	0.0	0	21	0.0
Scotland	10	2,257	0.4	17	2,121	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

Q3 (July to September 2019)



- Source of data is Surgical Site Infection Reporting System (SSIRS)

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 3* (October – December 2019) within NHS Grampian was 81%.

**Please note that Quarter 3 for MRSA CRA screening is October – December 2019*

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

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 3* (October – December 2019) within NHS Grampian was 88%.

**Please note that Quarter 3 for CPE CRA screening is October – December 2019*

	2018-19 Q3	2018-19 Q4	2019-20 Q1	2019-20 Q2	2019-20 Q3
Grampian	100%	97%	98%	96%	88%
Scotland	78%	81%	86%	86%	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).

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Ward Closures	0	0	0	2	2	0	0	1	1	2	4	3
Bay Closures	0	0	0	0	0	0	0	1	1	5	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 October and December 2019, there were a total of 4 IMT meetings and 14 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 October – December 2019			
Date	Area	Reason	HIIAT assessment*
05.12.19	Medical Ward, RACH	Pseudomonas bacteraemia	Red
06.12.19	Banff Health Centre	Water Safety	Green
11.12.19	Medical Ward, RACH	Pseudomonas bacteraemia	Green
16.12.19	Inverurie Dental	Equipment Decontamination	Green

PAG meetings October – December 2019			
Date	Area	Reason	HIIAT assessment*
04.10.19	Ward 108, ARI	Hand Hygiene Audit	N / A
04.10.19	ICU, ARI	Hand Hygiene Audit	N / A
17.10.19	Ward 5, DGH	Hand Hygiene Audit	N / A
24.10.19	Neonatal Unit, AMH	Hand Hygiene Audit	N / A
30.10.19	Links at Woodend	Hand Hygiene Audit	N / A
30.10.19		Possible MRSA cross-transmission	Green
07.11.19	Ward 7, DGH	Hand Hygiene Audit	N / A
08.11.19	Ward 105, ARI	Hand Hygiene Audit	N / A
14.11.19	Roxburghe House	Possible ESBL cross-transmission	Green
15.11.19	Seafield Hospital	Hand Hygiene Audit	N / A
27.11.19	Ward 303, ARI	Hand Hygiene Audit	N / A
02.12.19	Cardiac Cath Lab, ARI	Ventilation	Green
12.12.19	Ward 217, ARI	Water Safety	Green
17.12.19	Ward 7, DGH	Hand Hygiene Audit	N / A

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

All Minor = **Green**

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

3 Minor and 1 Moderate = **Green**

Any Major = **Red**

Cleaning and the Healthcare Environment

Between October and December 2019, 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>

	October 2019 Domestic	October 2019 Estates	November 2019 Domestic	November 2019 Estates	December 2019 Domestic	December 2019 Estates	Quarter 3 Domestic	Quarter 3 Estates
NHS Grampian Overall	93.60	94.65	92.50	94.10	93.98	94.86	93.36	94.53
Aberdeen Maternity Hospital, RACH & Outlying Areas	93.85	93.50	92.00	90.55	93.12	93.24	92.99	92.43
Aberdeen Royal Infirmary	92.40	95.10	91.30	93.55	92.96	95.49	92.22	94.71
Aberdeenshire North & Moray Community	96.10	91.50	95.90	95.25	95.29	94.51	95.76	93.75
Aberdeenshire South & Aberdeen City	97.30	99.50	95.05	97.90	97.11	99.71	96.48	99.03
Dr Gray's Hospital	93.85	93.65	93.80	94.75	93.95	94.82	93.86	94.40
Royal Cornhill Hospital	94.15	89.40	92.15	95.10	93.22	94.19	93.17	92.89
Woodend Hospital	94.45	96.25	94.10	96.00	92.45	94.73	93.66	95.66

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

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
MRSA	0	0	0	0	1	0	0	0	0	0	0	0
MSSA	12	9	8	15	13	9	10	7	9	12	10	11
Total SABS	12	9	8	15	14	9	10	7	9	12	10	11

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Total CDIs (Ages 15+)	8	3	12	2	7	6	5	4	7	11	5	9

Cleaning Compliance (%)

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

Estates Monitoring Compliance (%)

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

Hand Hygiene Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
AHP	99	99	99	98	98	99	99	99	99	98	98	99
Ancillary	97	96	97	93	95	93	92	96	97	95	97	95
Medical	97	96	94	96	96	97	96	96	96	95	97	96
Nurse	98	98	97	99	98	99	98	98	98	98	98	99

NHS HOSPITAL A REPORT CARD – Aberdeen Royal Infirmary

Staphylococcus aureus bacteraemia - monthly case numbers

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

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Total CDIs (Ages 15+)	2	0	5	1	3	0	2	0	2	4	2	3

Cleaning Compliance (%)

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

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
ARI Total	95	96	96	95	95	95	94	95	94	95	94	95

NHS HOSPITAL B REPORT CARD – Dr Gray’s Hospital

Staphylococcus aureus bacteraemia - monthly case numbers

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

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

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

Cleaning Compliance (%)

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

Estates Monitoring Compliance (%)

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

NHS HOSPITAL C REPORT CARD – Woodend Hospital

Staphylococcus aureus bacteraemia - monthly case numbers

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

Clostridioides (formerly Clostridium) difficile infections - monthly case numbers

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

Cleaning Compliance (%)

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

Estates Monitoring Compliance (%)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
WGH Total	96	90	96	96	96	96	96	95	97	96	96	95

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

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

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

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

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia - monthly case numbers

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

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

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Total CDIs (Ages 15+)	6	2	6	1	4	6	3	4	4	6	3	4

References

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