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Surveillance: *Clostridium difficile* (*C. difficile*) and *Staphylococcus aureus* bacteraemia (MRSA and MSSA)

Report: Bi-annual Report

Time period: 1st April to 30th September 2015

Health Board: Aneurin Bevan University Health Board

Content: Pg 2 – *C. difficile*
Pg 12 – MRSA bacteraemia
Pg 23 – MSSA bacteraemia

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1. *Clostridium difficile* (*C. difficile*)

C. difficile surveillance notes for interpretation

- This report presents data on numbers of *C. difficile* in Wales from April to September 2015, with trend data from April 2010.
- Data is mainly collected via Datastore, a data warehouse system used by all microbiology laboratories in Wales. This data is supplemented manually with *C. difficile* specimens from patients in Powys Teaching Health Board where the laboratory used for processing the specimen is in England.
- Data is extracted for the surveillance scheme using the following criteria:
 - The patient is at least 2 years old
 - The sample was not taken from a patient in a private hospital, a privately run dialysis unit or post-mortem
 - The sample had a positive *C. difficile* toxin test, if a single test (either a toxin A and B enzyme immunoassay or a neutralised cell toxicity assay) protocol was in use in the laboratory at the time the investigation was carried out, or a positive glutamate dehydrogenase (GDH) assay combined with a positive *C. difficile* toxin enzyme immunoassay, if a two-stage testing protocol was in use in the laboratory at the time the investigation was carried out.
 - Multiple positive samples from the same patient within a 28 day period are excluded as duplicates
- Hospital admission data has been supplied by NHS Wales Informatics Service (NWIS) from the Patient Episode Database for Wales (PEDW).
- Population data has been extracted from <https://statswales.wales.gov.uk/Catalogue/Population-and-Migration/Population/Estimates>.
- All ages are included in the hospital admission and population numbers used to calculate rates.
- Mid 2014 population estimates have been used to calculate the April – September 2015 population rates. These rates will be updated when the mid 2015 population estimates become available.

Wales *C. difficile*, Apr – Sep 15

- 694 cases of *C. difficile* have been reported for the 6 month period. This is a 1% increase in numbers compared to the equivalent period last year. The rate of *C. difficile* per 1,000 hospital admissions has increased by 3%, from 3.07 to 3.17. (Table 1.1.)
- Compared to the equivalent period last year, 4 of the 8 health boards/trust in Wales have achieved a reduction in numbers of *C. difficile*. (Table 1.1.)
- Compared to Apr – Sep 10, there has been a 56% decrease in the number of *C. difficile* and a 55% decrease in the rate of *C. difficile* per 1,000 hospital admissions in Wales. (Table 1.2.)
- Compared to the Apr – Sep 10, 7 of the 8 health boards/trust in Wales have achieved a reduction in numbers of *C. difficile*. (Table 1.3.) Powys Teaching Health Board had some changes in data collection methods over this time period.
- 71% (491) of cases were diagnosed in the 18 acute hospitals, 5% (38) diagnosed in non-acute hospitals and 24% (165) in non-hospital locations.
- 61% (422) of cases were diagnosed in hospital inpatient locations. The inpatient rate for Wales is 1.93 per 1,000 hospital admissions for this period.
- 58% (405) of *C. difficile* were in female patients and 80% (553) were in patients aged 66+ for the 6 month period.
- The rate of *C. difficile* per 100,000 population has increased by 1% compared to the equivalent period last year, from 44.25 to 44.77. (Table 1.2.)
- Compared to Apr – Sep 10, the rate of *C. difficile* per 100,000 population has decreased by 56%. (Table 1.2.)

Table 1.1. Wales numbers of *C. difficile*, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by health board, Apr – Sep 15

	Number of <i>C. difficile</i>	% change in number of <i>C. difficile</i> from Apr – Sep 14	% change in number of <i>C. difficile</i> from Apr – Sep 10	<i>C. difficile</i> / 1,000 hospital admissions	<i>C. difficile</i> /100,000 population
ABM	152	+6% (143)	-32% (224)	3.64	57.97
Aneurin Bevan	103	-10% (115)	-72% (370)	2.35	35.40
Betsi Cadwaladr	202	+14% (177)	-50% (401)	4.26	58.05
Cardiff and Vale	82	-20% (103)	-77% (352)	2.59	33.93
Cwm Taf	38	-37% (60)	-60% (96)	1.48	25.61
Hywel Dda	101	+36% (74)	-2% (103)	3.77	52.46
Powys Teaching	12	+33% (9)	+71% (7)	15.15	18.04
Velindre	4	-20% (5)	-60% (10)	4.42	N/A
Wales	694	+1% (686)	-56% (1563)	3.17	44.77
Wales average	87	0% (86)	-35% (195)	4.71	40.21
Wales median	92	-2% (89)	-55% (164)	3.70	35.40

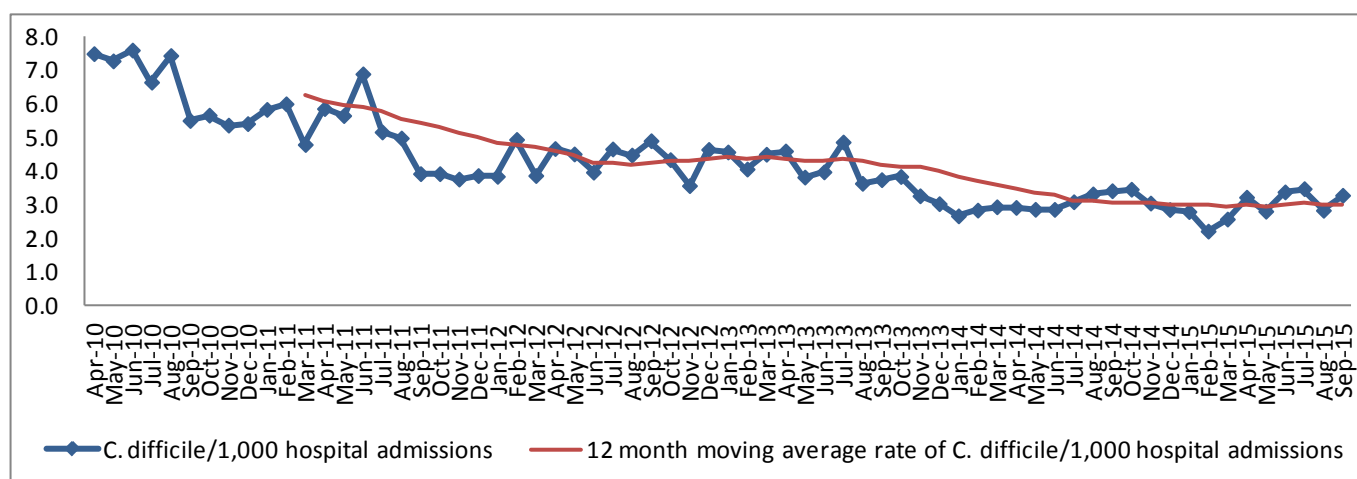
Wales

Table 1.2. Wales numbers and rates of *C. difficile* per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of <i>C. difficile</i>	Number of hospital admissions	<i>C. difficile</i> / 1,000 hospital admissions	Population*	<i>C. difficile</i> / 100,000 population
Apr – Sep 15	694	219069	3.17	1550254	44.77
Sep 15	121	36947	3.27	254140	47.61
Aug 15	99	34989	2.83	262611	37.70
Jul 15	132	38022	3.47	262611	50.26
Jun 15	126	37330	3.38	254140	49.58
May 15	101	36047	2.80	262611	38.46
Apr 15	115	35734	3.22	254140	45.25
2014/15 FY	1318	446598	2.95	3092036	42.63
Apr – Sep 14	686	223490	3.07	1550254	44.25
2013/14 FY	1577	437247	3.61	3082412	51.16
Apr – Sep 13	901	219353	4.11	1545428	58.30
2012/13 FY	1934	439792	4.40	3074067	62.91
Apr – Sep 12	998	220574	4.52	1541245	64.75
2011/12 FY	2142	455772	4.70	3063758	69.91
Apr – Sep 11	1214	224821	5.40	1536076	79.03
Apr – Dec 10	2795	448561	6.23	3049971	91.64
Apr – Sep 10	1563	223855	6.98	1529164	102.21

*Monthly population = (Total population/Number of days in year) x Number of days in month

Figure 1.1. Wales monthly and 12 month moving average rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

***Clostridium difficile* Surveillance**
April to September 2015 Bi-annual Report
Aneurin Bevan University Health Board

Aneurin Bevan University Health Board *C. difficile*, Apr – Sep 15

- 103 cases of *C. difficile* have been reported for the 6 month period. This is a 10% decrease in numbers compared to the equivalent period last year. The rate of *C. difficile* per 1,000 hospital admissions has decreased by 10%, from 2.62 to 2.35. (Table 1.3.) The rate of *C. difficile* per 1,000 hospital admissions in Wales has increased by 3% for the same period.
- Compared to Apr – Sep 10, there has been a 72% decrease in the number of *C. difficile* and a 73% decrease in the rate of *C. difficile* per 1,000 hospital admissions in this health board. (Table 1.4.) The rate of *C. difficile* per 1,000 hospital admissions in Wales has decreased by 55%.
- 52% (54) of cases were diagnosed in the 2 acute hospitals in this health board, 13% (13) diagnosed in non-acute hospitals and 35% (36) in non-hospital locations. (Table 1.7.)
- 46% (47) of cases in this health board were diagnosed in hospital inpatient locations. The inpatient rate is 1.07 per 1,000 hospital admissions for this period.
- 60% (62) of *C. difficile* in this health board were in female patients and 80% (82) were in patients aged 66+ for the 6 month period.
- The rate of *C. difficile* per 100,000 population has decreased by 10% compared to the equivalent period last year, from 39.52 to 35.40. (Table 1.3.) The rate of *C. difficile* per 100,000 population in Wales has increased by 1% for the same period.
- Compared to the Apr – Sep 10, the rate of *C. difficile* per 100,000 population has decreased by 72% in this health board. (Table 1.4.) The rate of *C. difficile* per 100,000 population in Wales has decreased by 56%.

Table 1.3. Aneurin Bevan University Health Board numbers of *C. difficile*, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by acute hospital, Apr – Sep 15

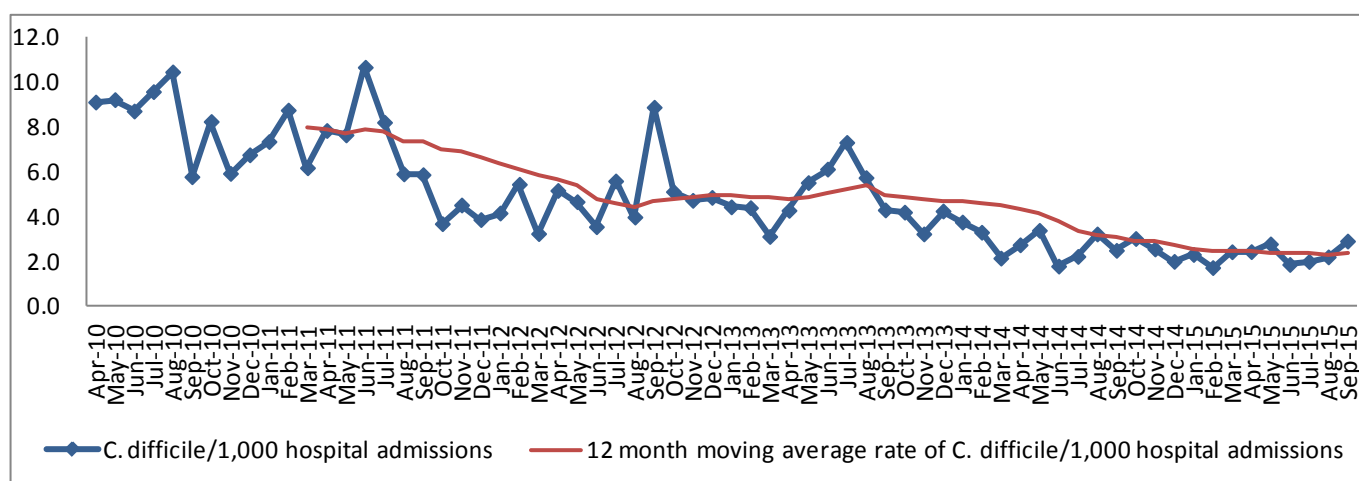
Health board/ hospital	Number of <i>C. difficile</i>	% change in number of <i>C. difficile</i> from Apr – Sep 14	% change in number of <i>C. difficile</i> from Apr – Sep 10	<i>C. difficile</i> / 1,000 hospital admissions	<i>C. difficile</i> /100,000 population
Nevill Hall	17	-35% (26)	-67% (51)	1.34	N/A
Royal Gwent	37	+3% (36)	-79% (175)	1.48	N/A
AB	103	-10% (115)	-72% (370)	2.35	35.40
Wales	694	+1% (686)	-56% (1563)	3.17	44.77

Table 1.4. Aneurin Bevan University Health Board numbers and rates of *C. difficile* per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of <i>C. difficile</i>	Number of hospital admissions	<i>C. difficile</i> / 1,000 hospital admissions	Population*	<i>C. difficile</i> / 100,000 population
Apr – Sep 15	103	43886	2.35	290996	35.40
Sep 15	21	7257	2.89	47704	44.02
Aug 15	15	6853	2.19	49294	30.43
Jul 15	15	7563	1.98	49294	30.43
Jun 15	14	7556	1.85	47704	29.35
May 15	20	7230	2.77	49294	40.57
Apr 15	18	7427	2.42	47704	37.73
2014/15 FY	222	89729	2.47	580401	38.25
Apr – Sep 14	115	43864	2.62	290996	39.52
2013/14 FY	383	84068	4.72	579101	40.06
Apr – Sep 13	232	41888	5.54	290344	79.91
2012/13 FY	405	85120	4.93	577981	38.06
Apr – Sep 12	220	41680	5.28	289782	75.92
2011/12 FY	560	84445	6.69	577077	54.24
Apr – Sep 11	313	40889	7.65	289329	108.18
2010/11 FY	519	63593	8.17	574778	64.37
Apr – Sep 10	370	42132	8.78	288176	128.39

*Monthly population = (Total population/Number of days in year) x Number of days in month

Figure 1.2. Aneurin Bevan University Health Board monthly and 12 month moving average rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

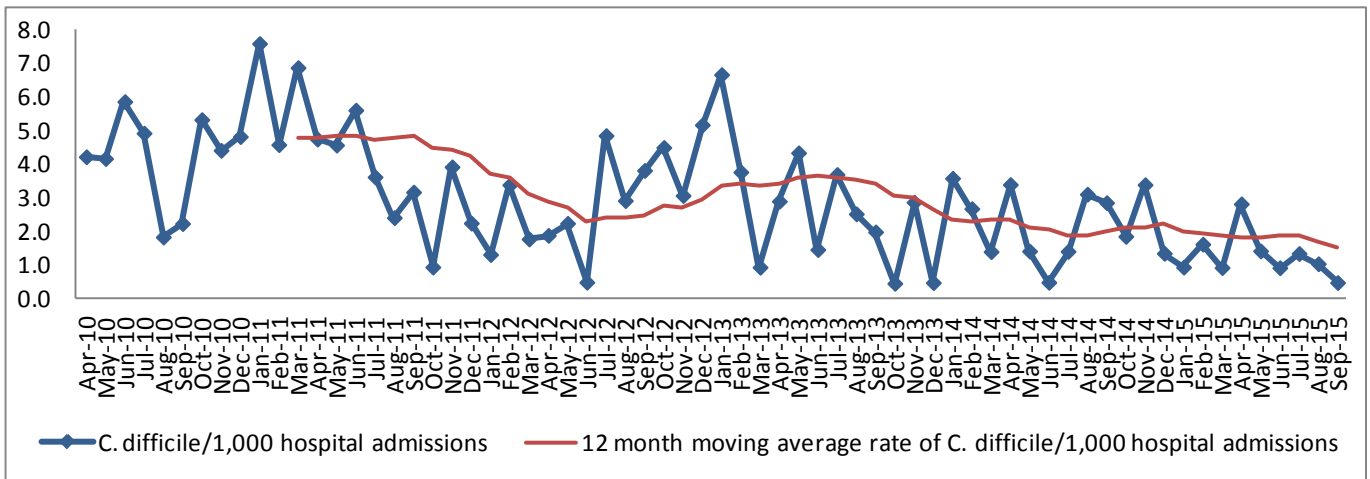
Nevill Hall Hospital *C. difficile*, Apr – Sep 15

- 17 cases of *C. difficile* have been reported for the 6 month period. This is a 35% decrease in numbers compared to the equivalent period last year. (Table 1.3.) The rate of *C. difficile* per 1,000 hospital admissions has decreased by 36%, from 2.09 to 1.34. (Table 1.5.)
- Compared to the Apr – Sep 10, there has been a 67% decrease in the number of *C. difficile* and a 65% decrease in the rate of *C. difficile* per 1,000 hospital admissions in this hospital. (Table 1.5.)
- The rate of *C. difficile* in this hospital is not significantly different than the rates for the acute hospitals in Wales for this 6 month period. (Figure 1.5.)
- 65% (11) of the cases were diagnosed in hospital inpatient locations. The inpatient rate is 0.86 per 1,000 hospital admissions for this period.

Table 1.5. Nevill Hall Hospital numbers and rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15

	Number of <i>C. difficile</i>	Number of hospital admissions	<i>C. difficile</i> /1,000 hospital admissions
Apr – Sep 15	17	12729	1.34
Sep 15	1	2108	0.47
Aug 15	2	1936	1.03
Jul 15	3	2243	1.34
Jun 15	2	2186	0.91
May 15	3	2121	1.41
Apr 15	6	2135	2.81
2014/15 FY	47	25109	1.87
Apr – Sep 14	26	12459	2.09
2013/14 FY	58	24679	2.35
Apr – Sep 13	35	12401	2.82
2012/13 FY	85	25494	3.33
Apr – Sep 12	35	12875	2.72
2011/12 FY	82	26267	3.12
Apr – Sep 11	52	12964	4.01
2010/11 FY	129	27078	4.76
Apr – Sep 10	51	13202	3.86

Figure 1.3. Nevill Hall Hospital monthly and 12 month moving average rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

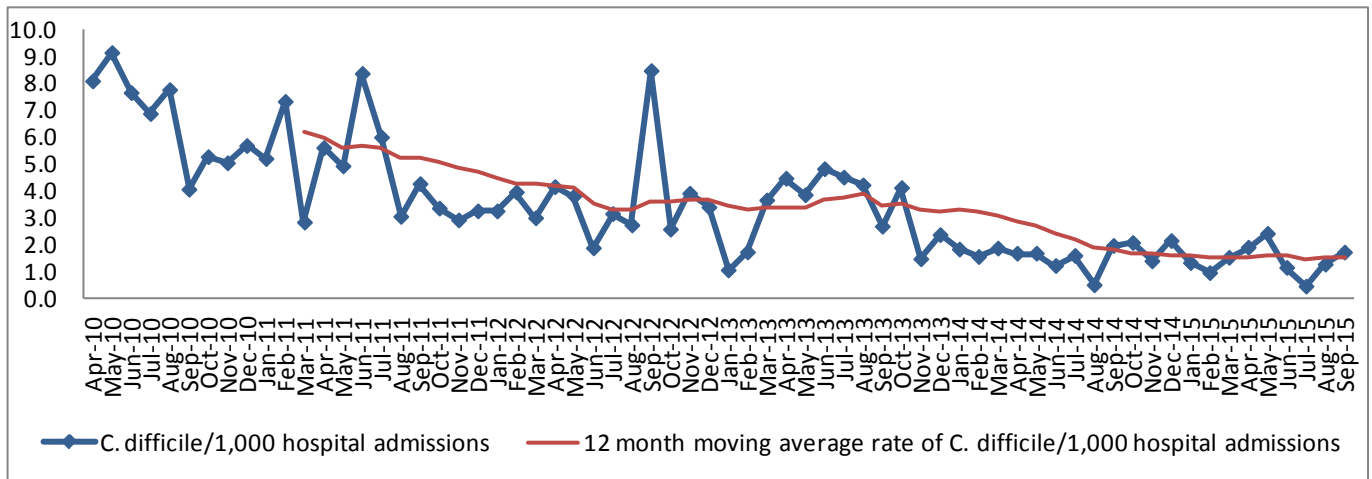
Royal Gwent Hospital *C. difficile*, Apr – Sep 15

- 37 cases of *C. difficile* have been reported for the 6 month period. This is a 3% increase in numbers compared to the equivalent period last year. (Table 1.3.) The rate of *C. difficile* per 1,000 hospital admissions has increased by 2%, from 1.45 to 1.48. (Table 1.6.)
- Compared to the Apr – Sep 10, there has been a 79% decrease in the number of *C. difficile* and an 80% decrease in the rate of *C. difficile* per 1,000 hospital admissions in this hospital. (Table 1.6.)
- The rate of *C. difficile* in this hospital is significantly lower than the rates for the acute hospitals in Wales for this 6 month period. (Figure 1.5.)
- 68% (25) of the cases were diagnosed in hospital inpatient locations. The inpatient rate is 1.00 per 1,000 hospital admissions for this period.

Table 1.6. Royal Gwent Hospital numbers and rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15

	Number of <i>C. difficile</i>	Number of hospital admissions	<i>C. difficile</i> /1,000 hospital admissions
Apr – Sep 15	37	24961	1.48
Sep 15	7	4059	1.72
Aug 15	5	3914	1.28
Jul 15	2	4328	0.46
Jun 15	5	4323	1.16
May 15	10	4137	2.42
Apr 15	8	4200	1.90
2014/15 FY	78	51239	1.52
Apr – Sep 14	36	24750	1.45
2013/14 FY	149	47639	3.13
Apr – Sep 13	94	22949	4.10
2012/13 FY	152	45002	3.38
Apr – Sep 12	90	22396	4.02
2011/12 FY	203	47266	4.29
Apr – Sep 11	124	23198	5.35
2010/11 FY	301	48565	6.20
Apr – Sep 10	175	24046	7.28

Figure 1.4. Royal Gwent Hospital monthly and 12 month moving average rates of *C. difficile* per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

Figure 1.5. Rates of *C. difficile* per 1,000 hospital admissions by acute hospital, Apr – Sep 15

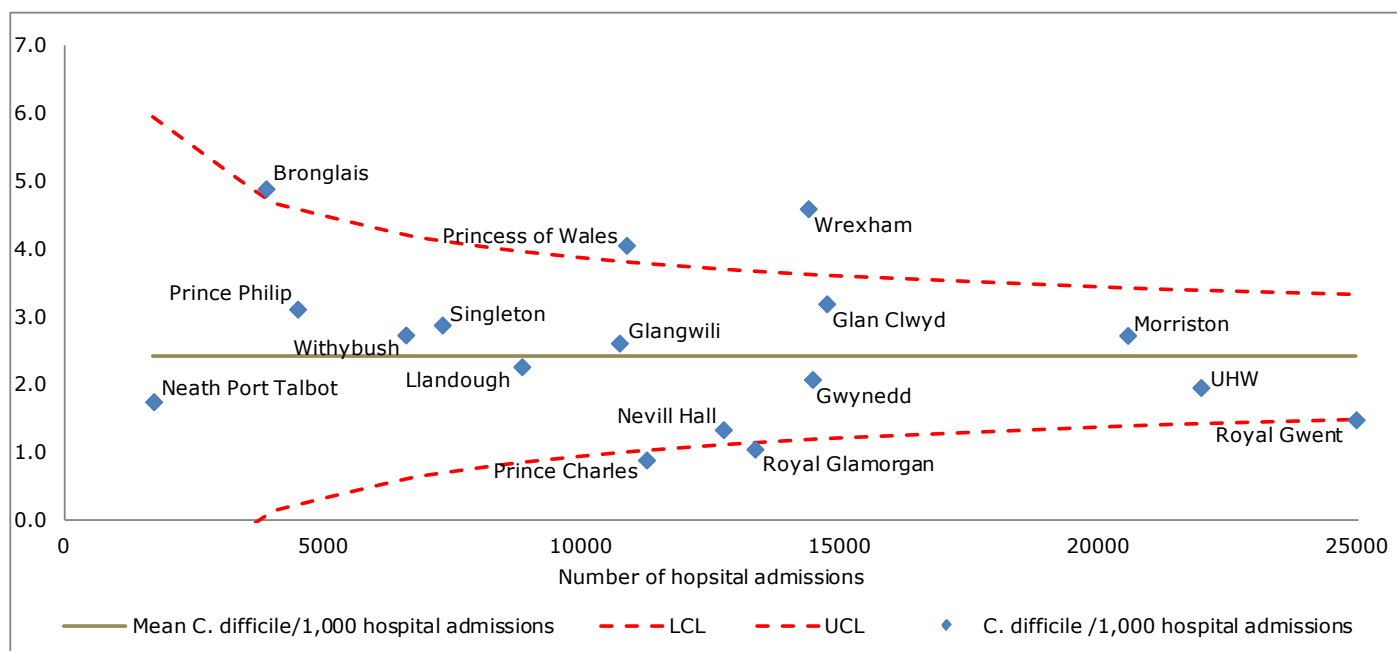


Table 1.7. Aneurin Bevan University Health Board, numbers of *C. difficile* in non-acute hospital locations, Apr – Sep 15

Location	Number of <i>C. difficile</i>
Ysbyty Ystrad Fawr	4
Ysbyty Aneurin Bevan	3
Chepstow Community Hospital	2
St Woolos Hospital	2
Monnow Vale Integrated H&SC Facility	1
County Hospital	1
Non-hospital location	36

2. MRSA (meticillin-resistant *Staphylococcus aureus*) bacteraemia

MRSA bacteraemia surveillance notes for interpretation

- This report presents data on numbers of MRSA from blood cultures (bacteraemia) in Wales from April to September 2015, with trend data from April 2010 (other than for Powys Health Board where data collection started in April 2011).
- Data is mainly collected via Datastore, a data warehouse system used by all microbiology laboratories in Wales. This data is supplemented manually with MRSA bacteraemia specimens from patients in Powys Health Board where the laboratory used for processing the specimen is in England.
- Data is extracted for the surveillance scheme using the following criteria:
 - *Staphylococcus aureus* (*S. aureus*) was identified from a blood culture sample
 - The sample was not taken from a patient in a private hospital, a privately run dialysis unit or post-mortem
 - Multiple positive samples from the same patient within a 14 day period are excluded as duplicates
- *S. aureus* positive blood cultures are assigned as MRSA (meticillin-resistant *S. aureus*) or MSSA (meticillin-sensitive *S. aureus*) on the basis of sensitivity to the antibiotic flucloxacillin
- Hospital admission data has been supplied by NHS Wales Informatics Service (NWIS) from the Patient Episode Database for Wales (PEDW).
- Population data has been extracted from <https://statswales.wales.gov.uk/Catalogue/Population-and-Migration/Population/Estimates>
- Mid 2014 population estimates have been used to calculate the April – September 2015 population rates. These rates will be updated when the mid 2015 population estimates become available.

Wales MRSA bacteraemia, Apr – Sep 15

- 51 cases of MRSA bacteraemia have been reported for the 6 month period. This is a 38% decrease in numbers compared to the equivalent period last year. The rate of MRSA bacteraemia per 1,000 hospital admissions has decreased by 38%, from 0.37 to 0.23. (Table 2.1.)
- Compared to the equivalent period last year, 5 of the 8 health boards/trust in Wales have achieved a reduction in numbers of MRSA bacteraemia. 3 health boards had the same number of MRSA bacteraemia for both time periods. (Table 2.1.)
- Compared to Apr – Sep 10, there has been a 57% decrease in the number of MRSA bacteraemia and a 56% decrease in the rate of MRSA bacteraemia per 1,000 hospital admissions in Wales. (Table 2.2.)
- Compared to the Apr – Sep 10, all of the health boards/trust in Wales have achieved a reduction in numbers of MRSA bacteraemia. (Table 2.3.) Powys Teaching Health Board had some changes in data collection methods over this time period.
- All cases were diagnosed in the 18 acute hospitals.
- 61% (31) of cases were diagnosed in hospital inpatient locations. The inpatient rate for Wales is 0.14 per 1,000 hospital admissions for this period.
- 18% (9) of MRSA bacteraemia were in female patients and 73% (37) were in patients aged 66+ for the 6 month period.
- The rate of MRSA bacteraemia per 100,000 population has decreased by 38% compared to the equivalent period last year, from 5.29 to 3.29. (Table 2.2.)
- Compared to Apr – Sep 10, the rate of MRSA bacteraemia per 100,000 population has decreased by 58%. (Table 2.2.)

Table 2.1. Wales numbers of MRSA bacteraemia, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by health board, Apr – Sep 15

	Number of MRSA bacteraemia	% change in number of MRSA bacteraemia from Apr – Sep 14	% change in number of MRSA bacteraemia from Apr – Sep 10	MRSA bacteraemia /1,000 hospital admissions	MRSA bacteraemia /100,000 population
ABM	8	-38% (13)	-72% (29)	0.19	3.05
Aneurin Bevan	10	=0% (10)	-9% (11)	0.23	3.44
Betsi Cadwaladr	16	-11% (18)	-43% (28)	0.34	4.60
Cardiff and Vale	9	-57% (21)	-59% (22)	0.28	3.72
Cwm Taf	2	-67% (6)	-82% (11)	0.08	1.35
Hywel Dda	6	-57% (14)	-63% (16)	0.22	3.12
Powys Teaching	0	=0% (0)	N/A	0.00	0.00
Velindre	0	=0% (0)	-100% (2)	0.00	N/A
Wales	51	-38% (82)	-57% (119)	0.23	3.29
Wales average	6	-29% (10)	-61% (17)	0.17	2.75
Wales median	7	-25% (12)	-63% (16)	0.21	3.12

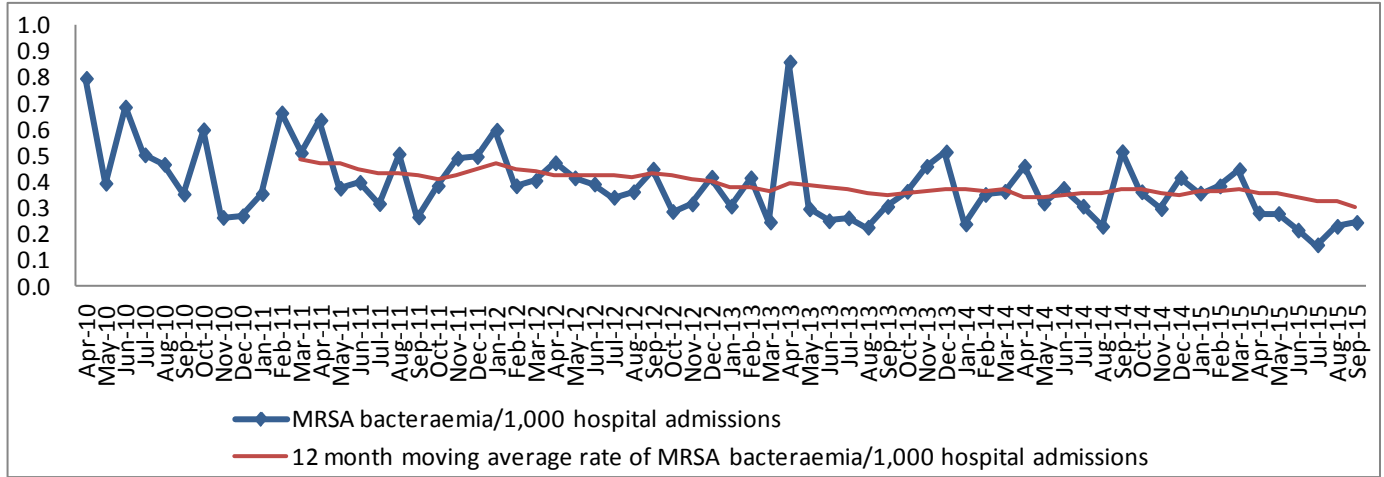
Table 2.2. Wales numbers and rates of MRSA bacteraemia per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of MRSA bacteraemia	Number of hospital admissions	MRSA bacteraemia/ 1,000 hospital admissions	Population*	MRSA bacteraemia/ 100,000 population
Apr – Sep 15	51	219069	0.23	1550254	3.29
Sep 15	9	36947	0.24	254140	3.54
Aug 15	8	34989	0.23	262611	3.05
Jul 15	6	38022	0.16	262611	2.28
Jun 15	8	37330	0.21	254140	3.15
May 15	10	36047	0.28	262611	3.81
Apr 15	10	35734	0.28	254140	3.93
2014/15 FY	166	446598	0.37	3092036	5.37
Apr – Sep 14	82	223490	0.37	1550254	5.29
2013/14 FY	165	437247	0.38	3082412	5.35
Apr – Sep 13	80	219353	0.36	1545428	5.18
2012/13 FY	161	439792	0.37	3074067	5.24
Apr – Sep 12	89	220574	0.40	1541245	5.77
2011/12 FY	199	455772	0.44	3063758	6.50
Apr – Sep 11	93	224821	0.41	1536076	6.05
Apr – Dec 10	218	448561	0.49	3049971	7.15
Apr – Sep 10	119	223855	0.53	1529164	7.78

*Monthly population = (Total population/Number of days in year) x Number of days in month

Wales

Figure 2.1. Wales monthly and 12 month moving average rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

Aneurin Bevan University Health Board MRSA bacteraemia, Apr – Sep 15

- 10 cases of MRSA bacteraemia have been reported for the 6 month period. This is the same number of cases compared to the equivalent period last year. The rate of MRSA bacteraemia per 1,000 hospital admissions has remained the same at 0.23. (Table 2.3.) The rate of MRSA bacteraemia per 1,000 hospital admissions in Wales has decreased by 37% for the same period.
- Compared to Apr – Sep 10, there has been a 9% decrease in the number of MRSA bacteraemia and a 13% decrease in the rate of MRSA bacteraemia per 1,000 hospital admissions in this health board. (Table 2.4.) The rate of MRSA bacteraemia per 1,000 hospital admissions in Wales has decreased by 56%.
- 100% (10) of cases were diagnosed in the 2 acute hospitals in this health board. (Table 2.7.)
- 40% (4) of cases in this health board were diagnosed in hospital inpatient locations. The inpatient rate is 0.09 per 1,000 hospital admissions for this period.
- 20% (2) of MRSA bacteraemia in this health board were in female patients and 80% (8) were in patients aged 66+ for the 6 month period.
- The rate of MRSA bacteraemia per 100,000 population is the same compared to the equivalent period last year, 3.44. (Table 2.3.) The rate of MRSA bacteraemia per 100,000 population in Wales has decreased by 38% for the same period.
- Compared to the Apr – Sep 10, the rate of MRSA bacteraemia per 100,000 population has decreased by 10% in this health board. (Table 2.4.) The rate of MRSA bacteraemia per 100,000 population in Wales has decreased by 58%.

Table 2.3. Aneurin Bevan University Health Board numbers of MRSA bacteraemia, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by acute hospital, Apr – Sep 15

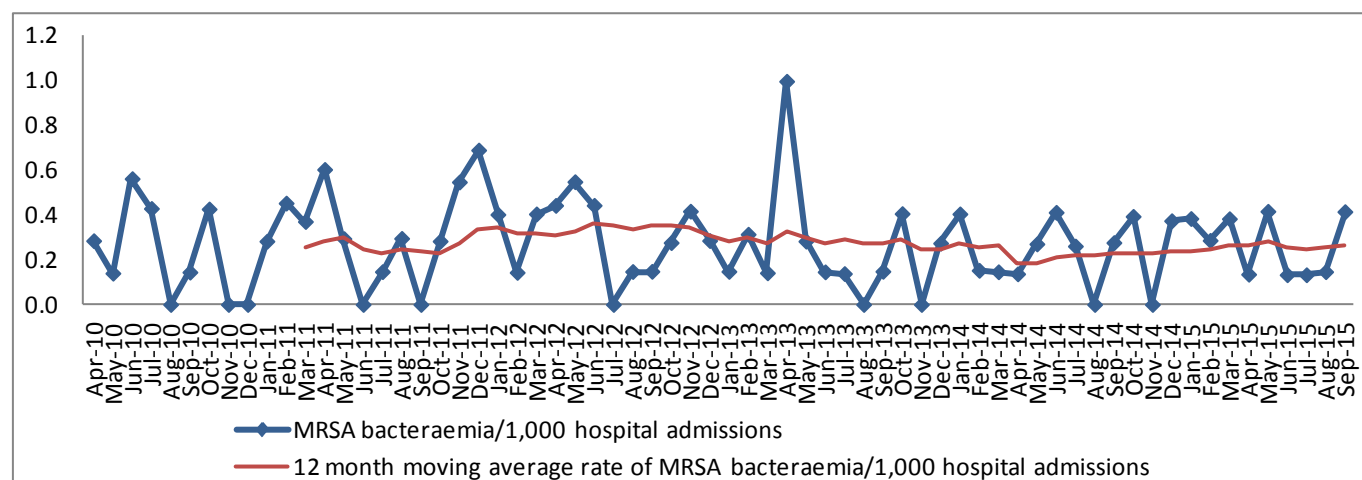
Health board/ hospital	Number of MRSA bacteraemia	% change in number of MRSA bacteraemia from Apr – Sep 14	% change in number of MRSA bacteraemia from Apr – Sep 10	MRSA bacteraemia/ 1,000 hospital admissions	MRSA bacteraemia /100,000 population
Nevill Hall	2	-33% (3)	-33% (3)	0.16	N/A
Royal Gwent	8	+60% (5)	=0% (8)	0.32	N/A
AB	10	0% (10)	-9% (11)	0.23	3.44
Wales	51	-38% (82)	-57% (119)	0.23	3.29

Table 2.4. Aneurin Bevan University Health Board numbers and rates of MRSA bacteraemia per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of MRSA bacteraemia	Number of hospital admissions	MRSA bacteraemia/ 1,000 hospital admissions	Population*	MRSA bacteraemia/ 100,000 population
Apr – Sep 15	10	43886	0.23	290996	3.44
Sep 15	3	7257	0.41	47704	6.29
Aug 15	1	6853	0.15	49294	2.03
Jul 15	1	7563	0.13	49294	2.03
Jun 15	1	7556	0.13	47704	2.10
May 15	3	7230	0.41	49294	6.09
Apr 15	1	7427	0.13	47704	2.10
2014/15 FY	24	89729	0.27	580401	4.14
Apr – Sep 14	10	43864	0.23	290996	3.44
2013/14 FY	22	84673	0.26	579101	3.80
Apr – Sep 13	12	41888	0.29	290344	4.13
2012/13 FY	23	83473	0.28	577981	3.98
Apr – Sep 12	12	41680	0.29	289782	4.14
2011/12 FY	27	84512	0.32	577077	4.68
Apr – Sep 11	9	40889	0.22	289329	3.11
2010/11 FY	22	85456	0.26	574778	3.83
Apr – Sep 10	11	42132	0.26	288176	3.82

*Monthly population = (Total population/Number of days in year) x Number of days in month

Figure 2.2. Aneurin Bevan University Health Board monthly and 12 month moving average rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

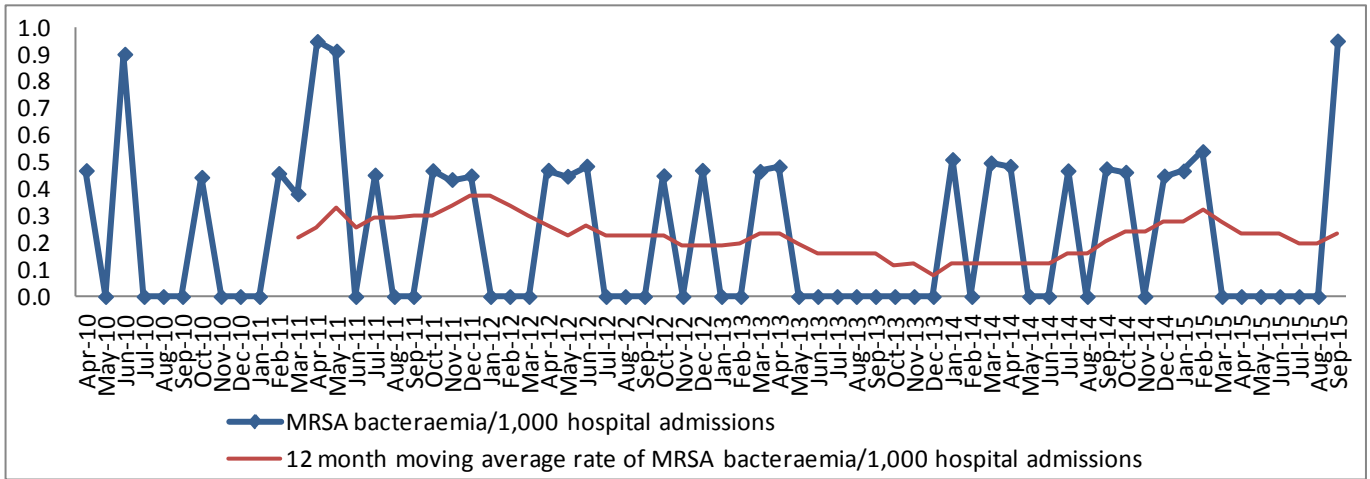
Nevill Hall Hospital MRSA bacteraemia, Apr – Sep 15

- 2 cases of MRSA bacteraemia have been reported for the 6 month period. This is a decrease of 1 in numbers compared to the equivalent period last year. (Table 2.3.) The rate of MRSA bacteraemia per 1,000 hospital admissions has decreased by 35%, from 0.24 to 0.16. (Table 2.5.)
- Compared to the Apr – Sep 10, there has been a decrease of 1 in the number of MRSA bacteraemia and 31% decrease in the rate of MSSA bacteraemia per 1,000 hospital admissions in this hospital. (Table 3.5.)
- The rate of MRSA bacteraemia in this hospital is not significantly different than the rates for the acute hospitals in Wales for this 6 month period. (Figure 2.5.)
- None of the cases were diagnosed in hospital inpatient locations.

Table 2.5. Nevill Hall Hospital numbers and rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15

	Number of MRSA bacteraemia	Number of hospital admissions	MRSA bacteraemia/ 1,000 hospital admissions
Apr – Sep 15	2	12729	0.16
Sep 15	2	2108	0.95
Aug 15	0	1936	0.00
Jul 15	0	2243	0.00
Jun 15	0	2186	0.00
May 15	0	2121	0.00
Apr 15	0	2135	0.00
2014/15 FY	7	25109	0.28
Apr – Sep 14	3	12459	0.24
2013/14 FY	3	24679	0.12
Apr – Sep 13	1	12401	0.08
2012/13 FY	6	25494	0.24
Apr – Sep 12	3	12875	0.23
2011/12 FY	8	26267	0.30
Apr – Sep 11	5	12964	0.39
2010/11 FY	6	27078	0.22
Apr – Sep 10	3	13202	0.23

Figure 2.3. Nevill Hall Hospital monthly and 12 month moving average rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

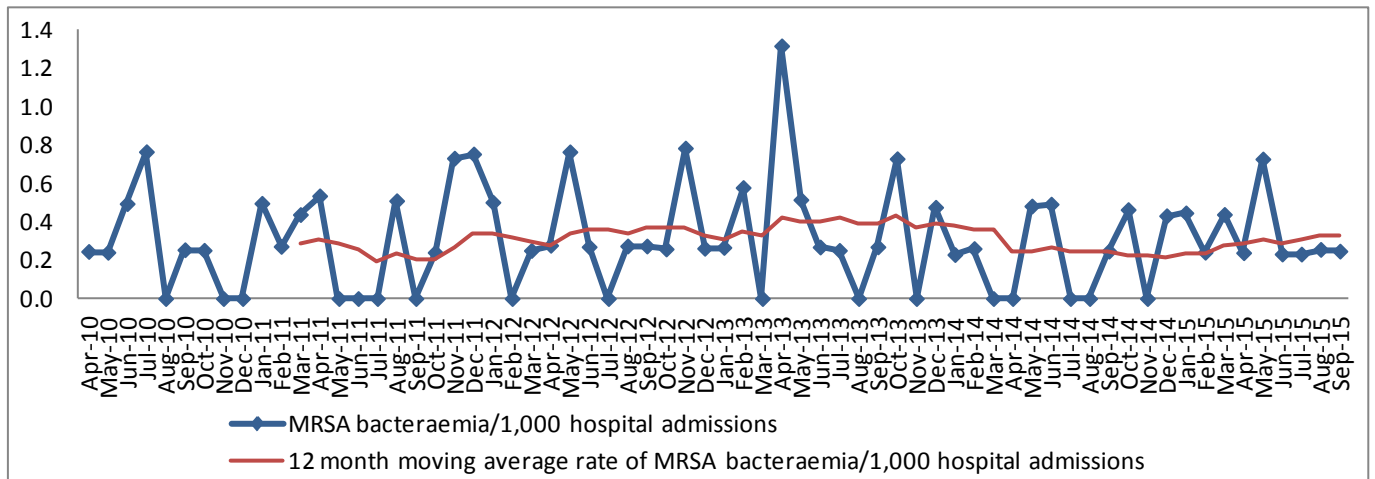
Royal Gwent Hospital MRSA bacteraemia, Apr – Sep 15

- 8 cases of MRSA bacteraemia have been reported for the 6 month period. This is an increase of 3 in numbers compared to the equivalent period last year. (Table 2.3.) The rate of MRSA bacteraemia per 1,000 hospital admissions has increased by 59%, from 0.20 to 0.32. (Table 2.6.)
- Compared to the Apr – Sep 10, the number of MRSA bacteraemia has remained the same and there has been a 4% decrease in the rate of MRSA bacteraemia per 1,000 hospital admissions in this hospital. (Table 2.6.)
- The rate of MRSA bacteraemia in this hospital is not significantly different than the rates for the acute hospitals in Wales for this 6 month period. (Figure 2.5.)
- 50% (4) of the cases were diagnosed in hospital inpatient locations. The inpatient rate is 0.16 per 1,000 hospital admissions for this period.

Table 2.6. Royal Gwent Hospital numbers and rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15

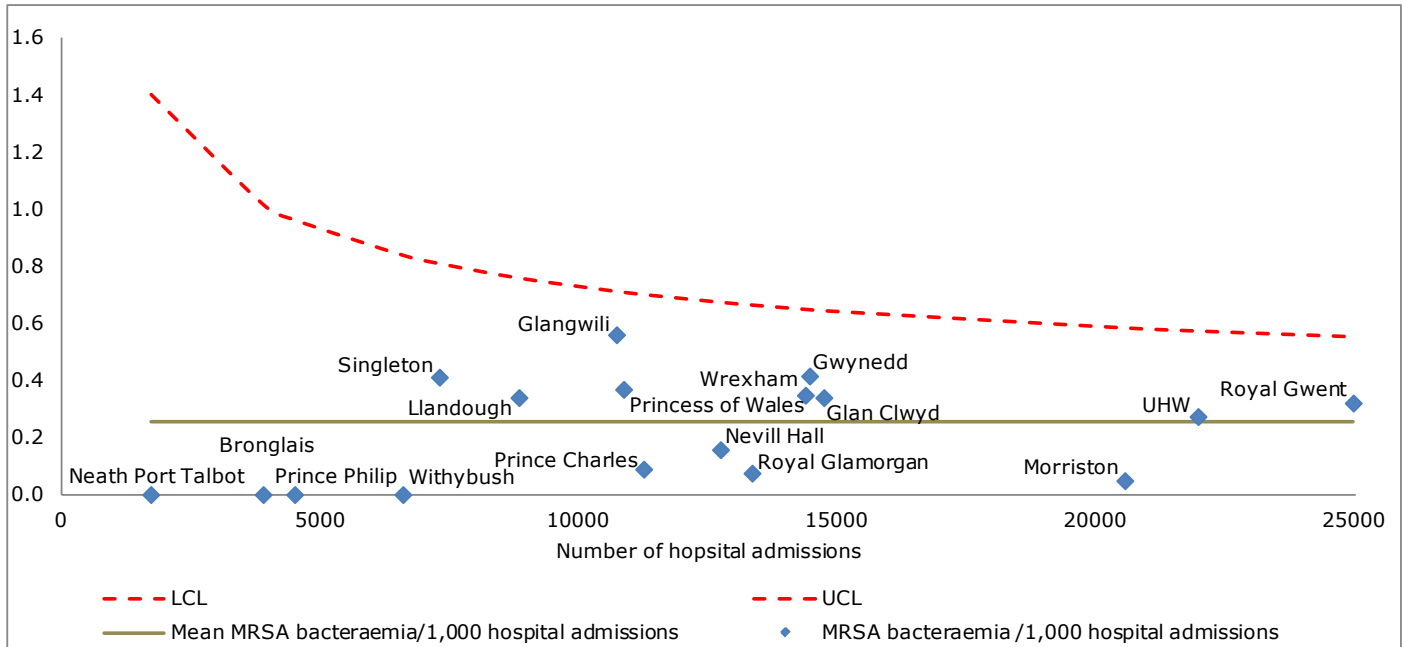
	Number of MRSA bacteraemia	Number of hospital admissions	MRSA bacteraemia/ 1,000 hospital admissions
Apr – Sep 15	8	24961	0.32
Sep 15	1	4059	0.25
Aug 15	1	3914	0.26
Jul 15	1	4328	0.23
Jun 15	1	4323	0.23
May 15	3	4137	0.73
Apr 15	1	4200	0.24
2014/15 FY	14	51239	0.27
Apr – Sep 14	5	24750	0.20
2013/14 FY	17	47639	0.36
Apr – Sep 13	10	22949	0.44
2012/13 FY	15	45002	0.33
Apr – Sep 12	7	22396	0.31
2011/12 FY	14	47266	0.30
Apr – Sep 11	4	23198	0.17
2010/11 FY	14	48565	0.29
Apr – Sep 10	8	24046	0.33

Figure 2.4. Royal Gwent Hospital monthly and 12 month moving average rates of MRSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

Figure 2.5. Rates of MRSA bacteraemia per 1,000 hospital admissions by acute hospital, Apr – Sep 15



3. MSSA (meticillin-sensitive *Staphylococcus aureus*) bacteraemia

MSSA bacteraemia surveillance notes for interpretation

- This report presents data on numbers of MSSA from blood cultures (bacteraemia) in Wales from April to September 2015, with trend data from April 2010 (other than for Powys Health Board where data collection started in April 2011).
- Data is mainly collected via Datastore, a data warehouse system used by all microbiology laboratories in Wales. This data is supplemented manually with MSSA bacteraemia specimens from patients in Powys Health Board where the laboratory used for processing the specimen is in England.
- Data is extracted for the surveillance scheme using the following criteria:
 - *Staphylococcus aureus* (*S. aureus*) was identified from a blood culture sample
 - The sample was not taken from a patient in a private hospital, a privately run dialysis unit or post-mortem
 - Multiple positive samples from the same patient within a 14 day period are excluded as duplicates
- *S. aureus* positive blood cultures are assigned as MRSA (meticillin-resistant *S. aureus*) or MSSA (meticillin-sensitive *S. aureus*) on the basis of sensitivity to the antibiotic flucloxacillin
- Hospital admission data has been supplied by NHS Wales Informatics Service (NWIS) from the Patient Episode Database for Wales (PEDW).
- Population data has been extracted from <https://statswales.wales.gov.uk/Catalogue/Population-and-Migration/Population/Estimates>
- Mid 2014 population estimates have been used to calculate the April – September 2015 population rates. These rates will be updated when the mid 2015 population estimates become available.

Wales MSSA bacteraemia, Apr – Sep 15

- 409 cases of MSSA bacteraemia have been reported for the 6 month period. This is a 5% increase in numbers compared to the equivalent period last year. The rate of MSSA bacteraemia per 1,000 hospital admissions has increased by 8%, from 1.74 to 1.87. (Table 3.1.)
- Compared to the equivalent period last year, 2 of the 8 health boards/trust in Wales have achieved a reduction in numbers of MSSA bacteraemia. (Table 3.1.)
- Compared to Apr – Sep 10, there has been a 26% increase in the number of MSSA bacteraemia and a 29% increase in the rate of MSSA bacteraemia per 1,000 hospital admissions in Wales. (Table 3.2.)
- Compared to the Apr – Sep 10, 1 of the 8 health boards/trust in Wales have achieved a reduction in numbers of MSSA bacteraemia. (Table 3.3.) Powys Teaching Health Board had some changes in data collection methods over this time period.
- 99% (403) of cases were diagnosed in the 18 acute hospitals, 1% (5) diagnosed in non-acute hospitals and <1% (1) in non-hospital locations.
- 53% (217) of cases were diagnosed in hospital inpatient locations. The inpatient rate for Wales is 0.99 per 1,000 hospital admissions for this period.
- 40% (164) of MSSA bacteraemia were in female patients and 50% (204) were in patients aged 66+ for the 6 month period.
- The rate of MSSA bacteraemia per 100,000 population has increased by 5% compared to the equivalent period last year, from 25.03 to 26.38. (Table 3.2.)
- Compared to Apr – Sep 10, the rate of MSSA bacteraemia per 100,000 population has increased by 24%. (Table 3.2.)

Table 3.1. Wales numbers of MSSA bacteraemia, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by health board, Apr – Sep 15

	Number of MSSA bacteraemia	% change in number of MSSA bacteraemia from Apr – Sep 14	% change in number of MSSA bacteraemia from Apr – Sep 10	MSSA bacteraemia /1,000 hospital admissions	MSSA bacteraemia /100,000 population
ABM	86	+8% (80)	+54% (56)	2.06	32.80
Aneurin Bevan	46	-23% (60)	-26% (62)	1.05	15.81
Betsi Cadwaladr	70	-3% (72)	+4% (67)	1.48	20.12
Cardiff and Vale	76	+3% (74)	+25% (61)	2.40	31.45
Cwm Taf	63	+34% (47)	+125% (28)	2.45	42.46
Hywel Dda	65	+23% (53)	+35% (48)	2.42	33.76
Powys Teaching	0	0% (0)	N/A	0.00	0.00
Velindre	3	+50% (2)	=0% (3)	3.31	N/A
Wales	409	+5% (388)	+26% (325)	1.87	26.38
Wales average	51	+11% (49)	+31% (46)	1.90	25.20
Wales median	64	+5% (57)	+25% (56)	2.23	31.45

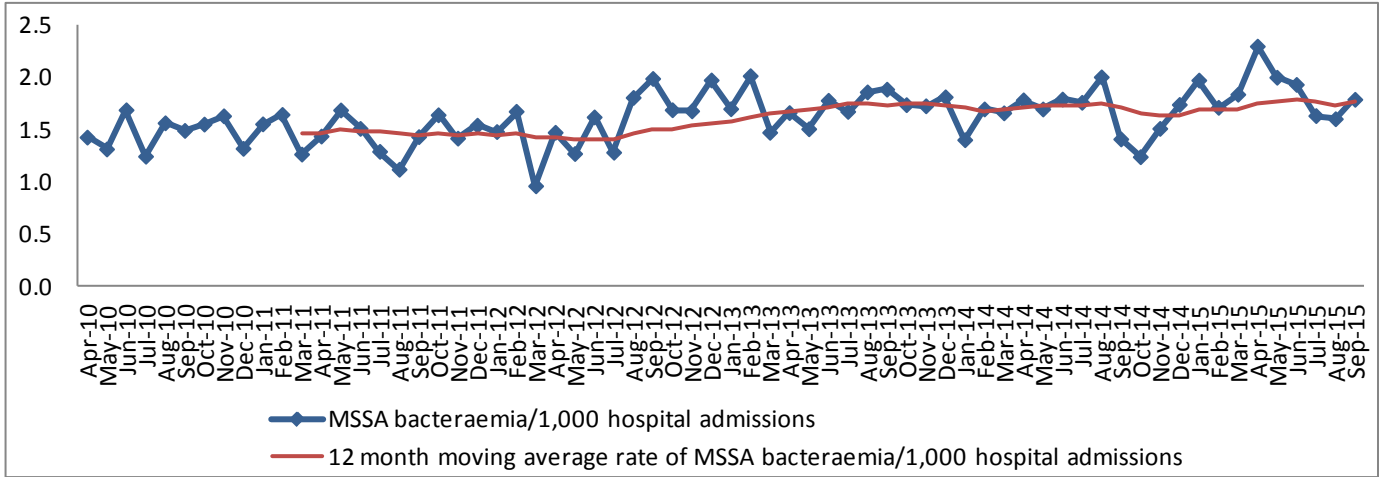
Table 3.2. Wales numbers and rates of MSSA bacteraemia per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of MSSA bacteraemia	Number of hospital admissions	MSSA bacteraemia/ 1,000 hospital admissions	Population*	MSSA bacteraemia/ 100,000 population
Apr – Sep 15	409	219069	1.87	1550254	26.38
Sep 15	65	36947	1.76	254140	25.58
Aug 15	56	34989	1.60	262611	21.32
Jul 15	62	38022	1.63	262611	23.61
Jun 15	72	37330	1.93	254140	28.33
May 15	72	36047	2.00	262611	27.42
Apr 15	82	35734	2.29	254140	32.27
2014/15 FY	759	446598	1.70	3092036	24.55
Apr – Sep 14	388	223490	1.74	1550254	25.03
2013/14 FY	751	437247	1.72	3082412	24.36
Apr – Sep 13	378	219353	1.72	1545428	24.46
2012/13 FY	728	439792	1.66	3074067	23.68
Apr – Sep 12	345	220574	1.56	1541245	22.38
2011/12 FY	651	455772	1.43	3063758	21.25
Apr – Sep 11	317	224821	1.41	1536076	20.64
Apr – Dec 10	659	448561	1.47	3049971	21.61
Apr – Sep 10	325	223855	1.45	1529164	21.25

*Monthly population = (Total population/Number of days in year) x Number of days in month

Wales

Figure 3.1. Wales monthly and 12 month moving average rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

Aneurin Bevan University Health Board MSSA bacteraemia, Apr – Sep 15

- 46 cases of MSSA bacteraemia have been reported for the 6 month period. This is a 23% decrease in numbers compared to the equivalent period last year. The rate of MSSA bacteraemia per 1,000 hospital admissions has decreased by 23%, from 1.37 to 1.05. (Table 3.3.) The rate of MSSA bacteraemia per 1,000 hospital admissions in Wales has increased by 8% for the same period.
- Compared to Apr – Sep 10, there has been a 26% decrease in the number of MSSA bacteraemia and a 29% decrease in the rate of MSSA bacteraemia per 1,000 hospital admissions in this health board. (Table 3.4.) The rate of MSSA bacteraemia per 1,000 hospital admissions in Wales has increased by 29%.
- 93% (43) of cases were diagnosed in the 2 acute hospitals in this health board and 7% (3) diagnosed in non-acute hospitals. (Table 3.7.)
- 65% (30) of cases in this health board were diagnosed in hospital inpatient locations. The inpatient rate is 0.68 per 1,000 hospital admissions for this period.
- 35% (16) of MSSA bacteraemia in this health board were in female patients and 59% (27) were in patients aged 66+ for the 6 month period.
- The rate of MSSA bacteraemia per 100,000 population has decreased by 23% compared to the equivalent period last year, from 20.62 to 15.81. (Table 3.3.) The rate of MSSA bacteraemia per 100,000 population in Wales has increased by 5% for the same period.
- Compared to the Apr – Sep 10, the rate of MSSA bacteraemia per 100,000 population has decreased by 27% in this health board. (Table 3.4.) The rate of MSSA bacteraemia per 100,000 population in Wales has increased by 24%.

Table 3.3. Aneurin Bevan University Health Board numbers of MSSA bacteraemia, percentage change in numbers (from Apr – Sep 14 and from Apr – Sep 10) and rates per 1,000 hospital admissions and 100,000 population by acute hospital, Apr – Sep 15

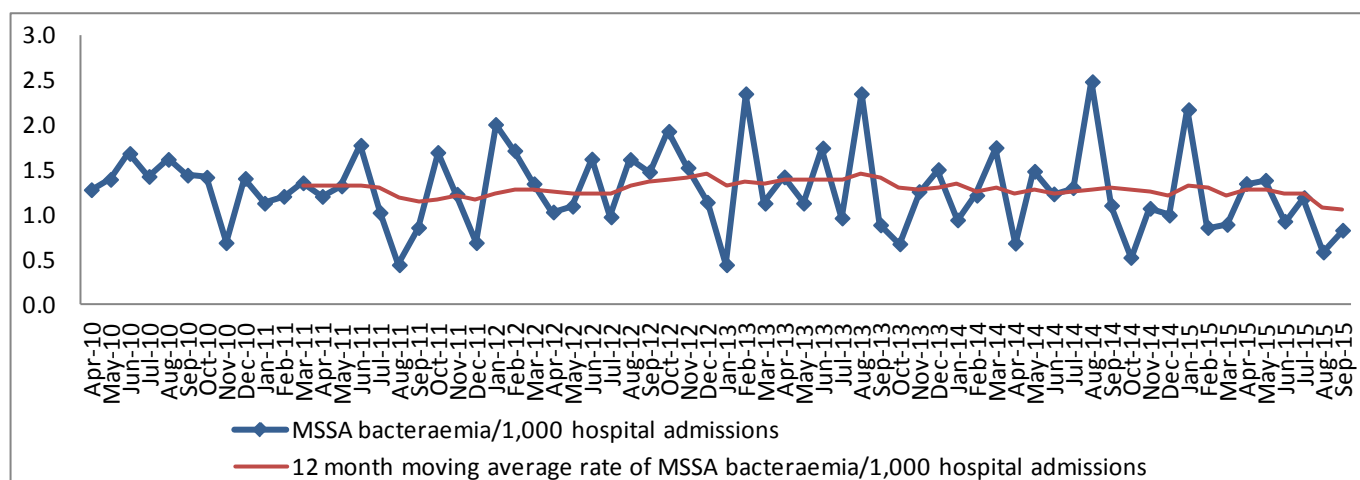
Health board/ hospital	Number of MSSA bacteraemia	% change in number of MSSA bacteraemia from Apr – Sep 14	% change in number of MSSA bacteraemia from Apr – Sep 10	MSSA bacteraemia/ 1,000 hospital admissions	MSSA bacteraemia /100,000 population
Nevill Hall	10	-50% (20)	-41% (17)	0.79	N/A
Royal Gwent	33	-11% (37)	-23% (43)	1.32	N/A
AB	46	-23% (60)	-26% (62)	1.05	15.81
Wales	409	+5% (388)	+26% (325)	1.87	26.38

Table 3.4. Aneurin Bevan University Health Board numbers and rates of MSSA bacteraemia per 1,000 hospital admissions and 100,000 population, Apr 10 – Sep 15

	Number of MSSA bacteraemia	Number of hospital admissions	MSSA bacteraemia/ 1,000 hospital admissions	Population*	MSSA bacteraemia/ 100,000 population
Apr – Sep 15	46	43886	1.05	290996	15.81
Sep 15	6	7257	0.83	47704	12.58
Aug 15	4	6853	0.58	49294	8.11
Jul 15	9	7563	1.19	49294	18.26
Jun 15	7	7556	0.93	47704	14.67
May 15	10	7230	1.38	49294	20.29
Apr 15	10	7427	1.35	47704	20.96
2014/15 FY	110	89729	1.23	580401	18.95
Apr – Sep 14	60	43864	1.37	290996	20.62
2013/14 FY	111	84673	1.31	579101	19.17
Apr – Sep 13	59	41888	1.41	290344	20.32
2012/13 FY	113	83473	1.35	577981	19.55
Apr – Sep 12	54	41680	1.30	289782	18.63
2011/12 FY	108	84512	1.28	577077	18.72
Apr – Sep 11	45	40889	1.10	289329	15.55
2010/11 FY	114	85456	1.33	574778	19.83
Apr – Sep 10	62	42132	1.47	288176	21.51

*Monthly population = (Total population/Number of days in year) x Number of days in month

Figure 3.2. Aneurin Bevan University Health Board monthly and 12 month moving average rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

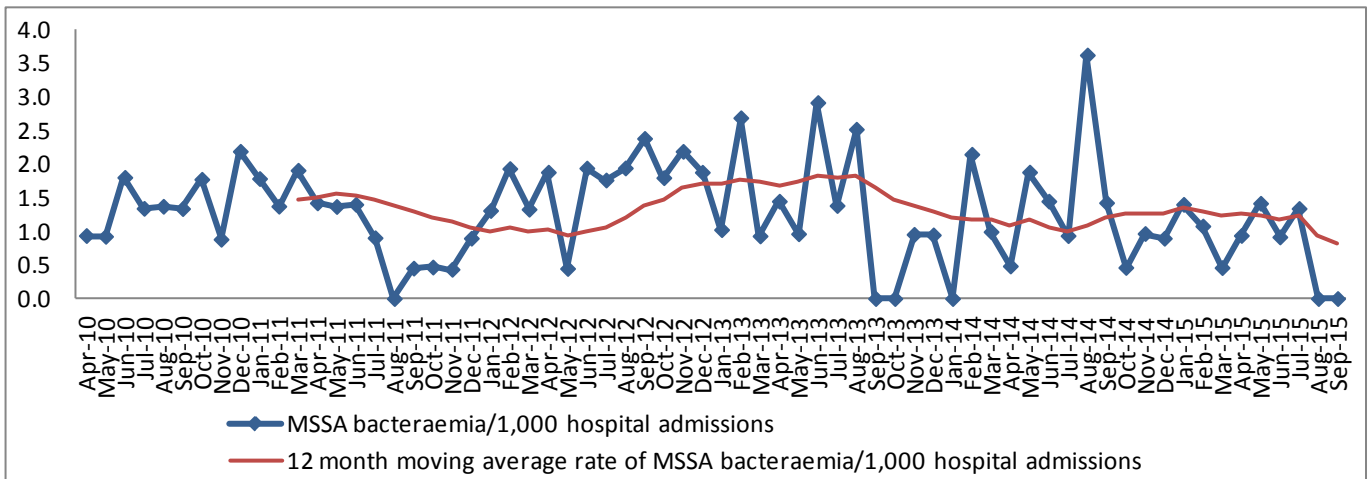
Nevill Hall Hospital MSSA bacteraemia, Apr – Sep 15

- 10 cases of MSSA bacteraemia have been reported for the 6 month period. This is a 50% decrease in numbers compared to the equivalent period last year. (Table 3.3.) The rate of MSSA bacteraemia per 1,000 hospital admissions has decreased by 51%, from 1.61 to 0.79. (Table 3.5.)
- Compared to the Apr – Sep 10, there has been a 41% decrease in the number of MSSA bacteraemia and a 39% decrease in the rate of MSSA bacteraemia per 1,000 hospital admissions in this hospital. (Table 3.5.)
- The rate of MSSA bacteraemia in this hospital is significantly lower than the rates for the acute hospitals in Wales for this 6 month period. (Figure 3.5.)
- 70% (7) of the cases were diagnosed in hospital inpatient locations. The inpatient rate is 0.55 per 1,000 hospital admissions for this period.

Table 3.5. Nevill Hall Hospital numbers and rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15

	Number of MSSA bacteraemia	Number of hospital admissions	MSSA bacteraemia/ 1,000 hospital admissions
Apr – Sep 15	10	12729	0.79
Sep 15	0	2108	0.00
Aug 15	0	1936	0.00
Jul 15	3	2243	1.34
Jun 15	2	2186	0.91
May 15	3	2121	1.41
Apr 15	2	2135	0.94
2014/15 FY	31	25109	1.23
Apr – Sep 14	20	12459	1.61
2013/14 FY	29	24679	1.18
Apr – Sep 13	19	12401	1.53
2012/13 FY	44	25494	1.73
Apr – Sep 12	22	12875	1.71
2011/12 FY	26	26267	0.99
Apr – Sep 11	12	12964	0.93
2010/11 FY	40	27078	1.48
Apr – Sep 10	17	13202	1.29

Figure 3.3. Nevill Hall Hospital monthly and 12 month moving average rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

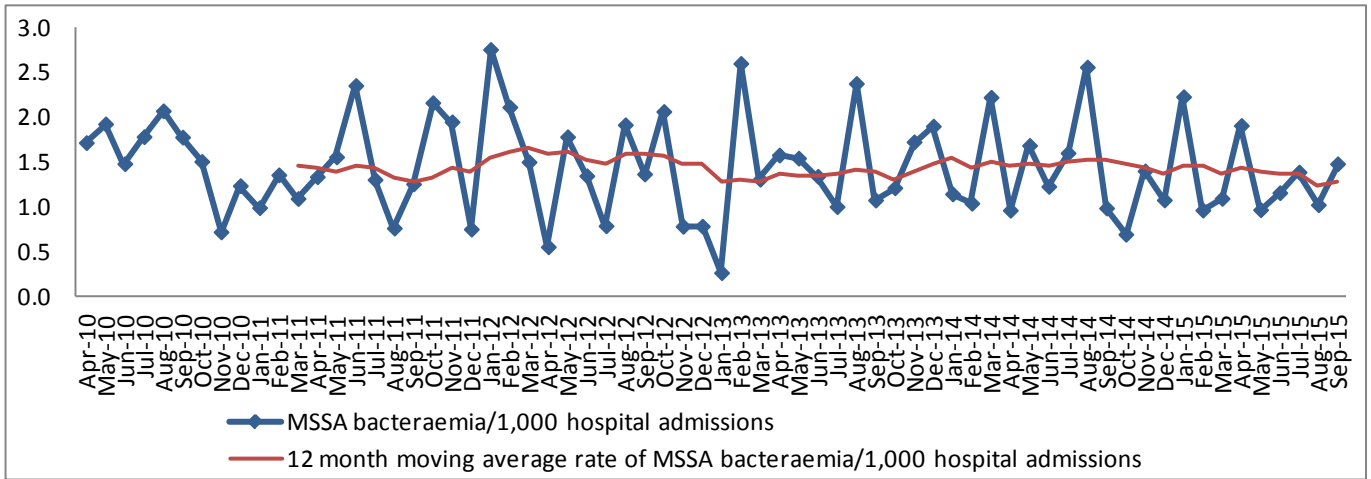
Royal Gwent Hospital MSSA bacteraemia, Apr – Sep 15

- 33 cases of MSSA bacteraemia have been reported for the 6 month period. This is a 11% decrease in numbers compared to the equivalent period last year. (Table 3.3.) The rate of MSSA bacteraemia per 1,000 hospital admissions has decreased by 12%, from 1.49 to 1.32. (Table 3.6.)
- Compared to the Apr – Sep 10, there has been a 23% decrease in the number of MSSA bacteraemia and a 26% decrease in the rate of MSSA bacteraemia per 1,000 hospital admissions in this hospital. (Table 3.6.)
- The rate of MSSA bacteraemia in this hospital is not significantly different than the rates for the acute hospitals in Wales for this 6 month period. (Figure 3.5.)
- 64% (21) of the cases were diagnosed in hospital inpatient locations. The inpatient rate is 0.28 per 1,000 hospital admissions for this period.

Table 3.6. Royal Gwent Hospital numbers and rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15

	Number of MSSA bacteraemia	Number of hospital admissions	MSSA bacteraemia/ 1,000 hospital admissions
Apr – Sep 15	33	24961	1.32
Sep 15	6	4059	1.48
Aug 15	4	3914	1.02
Jul 15	6	4328	1.39
Jun 15	5	4323	1.16
May 15	4	4137	0.97
Apr 15	8	4200	1.90
2014/15 FY	70	51239	1.37
Apr – Sep 14	37	24750	1.49
2013/14 FY	72	47639	1.51
Apr – Sep 13	34	22949	1.48
2012/13 FY	58	45002	1.29
Apr – Sep 12	29	22396	1.29
2011/12 FY	78	47266	1.65
Apr – Sep 11	33	23198	1.42
2010/11 FY	71	48565	1.46
Apr – Sep 10	43	24046	1.79

Figure 3.4. Royal Gwent Hospital monthly and 12 month moving average rates of MSSA bacteraemia per 1,000 hospital admissions, Apr 10 – Sep 15*



*12 month moving average rates are shown from Mar 11 as this is when the first full FY of data is complete

Figure 3.5. Rates of MSSA bacteraemia per 1,000 hospital admissions by acute hospital, Apr – Sep 15

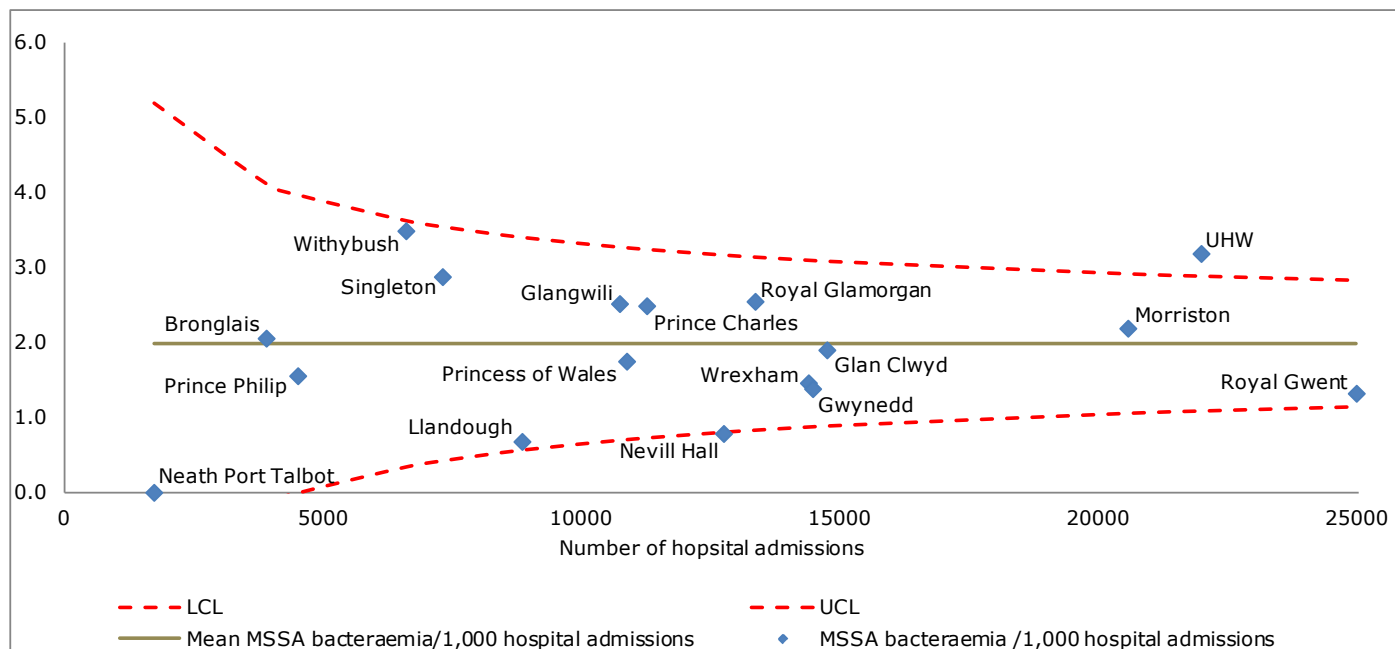


Table 3.7. Aneurin Bevan University Health Board, numbers of MSSA bacteraemia in non-acute hospital locations, Apr – Sep 15

Location	Number of MSSA bacteraemia
St Woolos Hospital	2
Ysbyty Ystrad Fawr	1