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Wales

# **ANNUAL REPORT: 2014**

## **Caesarean-Section Surgical Site Infection Surveillance**

(Includes data from 01/01/2014 - 31/12/2014)

### **Appendix 2: Aneurin Bevan**

**VERSION 1**

**Issued 23/12/15**

## Acknowledgements

The Welsh Healthcare Associated Infection Programme Team members are grateful to the obstetric clinical teams, midwifery teams, infection control teams and audit teams from the participating hospitals for providing the data for this report

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## SECTION 1: Results

### Surveillance form returns

**Table 1.1** Number of inpatient, post-discharge and valid forms returned for the surveillance in 2014.

No. of in-patient forms returned	No. of expected post-discharge forms	No. of post-discharge forms returned (% forms returned)	No. of valid forms used for data analysis*	% of valid forms for data analysis*
1661	1661	1644 (99%)	1555	93.6 (1555/1661)

### Completion rates of surveillance forms

**Table 1.2** % completion of the SSI field on the c-section surveillance form (main and post-discharge) for 2014.

Data Item	No. completed	No. expected	% Complete
Inpatient SSI (Yes/No):	1595	1661	96.0
If Yes, SSI type	3	3	100
If Yes, Infection date	3	3	100
Post-discharge SSI* (Yes/No):	1614	1644	98.2
If Yes, Infection date	40	41	97.6
If Yes, SSI type	38	41	92.7
Overall SSI**	1555	1661	93.6

\* Number expected is based on the number of post-discharge forms received.

\*\* Includes procedures with an SSI complete on the main form or updated by completion of the SSI field on a post-discharge form.

**Table 1.3** Data items on the c-section SSI surveillance form with  $\leq 85\%$  completion in 2014.

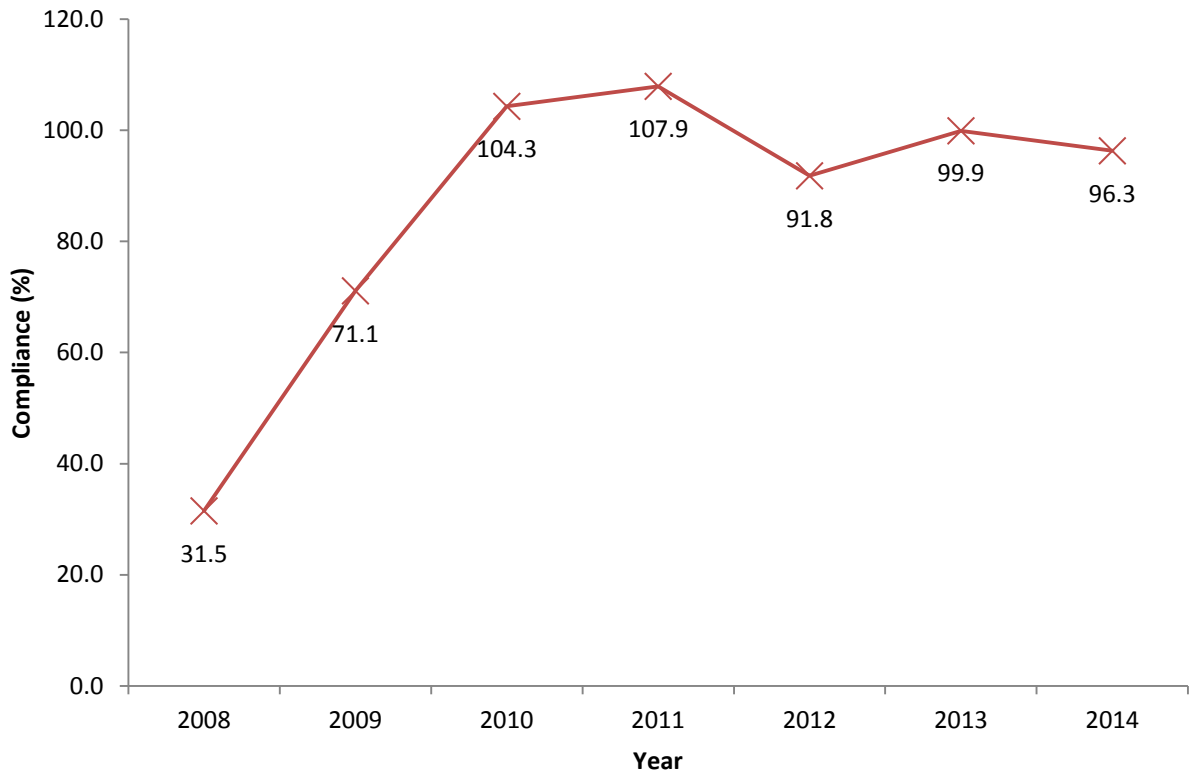
Data Item	No. completed	No. expected	% Complete
BMI	656	1661	39.5

### Surveillance Compliance

**Table 1.4** Coverage of the c-section SSI Surveillance compared to procedures reported to the PEDW database at NWIS in 2014

No. of surveillance forms returned to WHAIP	No. of valid surveillance forms returned to WHAIP*	No. of C sections reported to PEDW*	% Compliance
1661	1555	1614	96.3

\* valid surveillance forms – procedures with an SSI complete on the main form or where infection data could be updated post-discharge



**Figure 1.1** Trend rate for compliance: 2008-2014

**Summary:**

94% of data received could be utilised for data analysis

Data items on the form were generally completed well however the BMI field remains blank in 60% of records

All Wales compliance has decreased in 2014, but still remains excellent above 90%

## SECTION 2. SSI rate

### Incidence of in-patient, post-discharge and overall SSI

**Table 2.1** Incidence of inpatient SSI in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Aneurin Bevan	1595	3	0.19 (0.04-0.55)

**Table 2.2** Incidence of post-discharge SSI in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Aneurin Bevan	1614	41	2.54 (1.82-3.45)

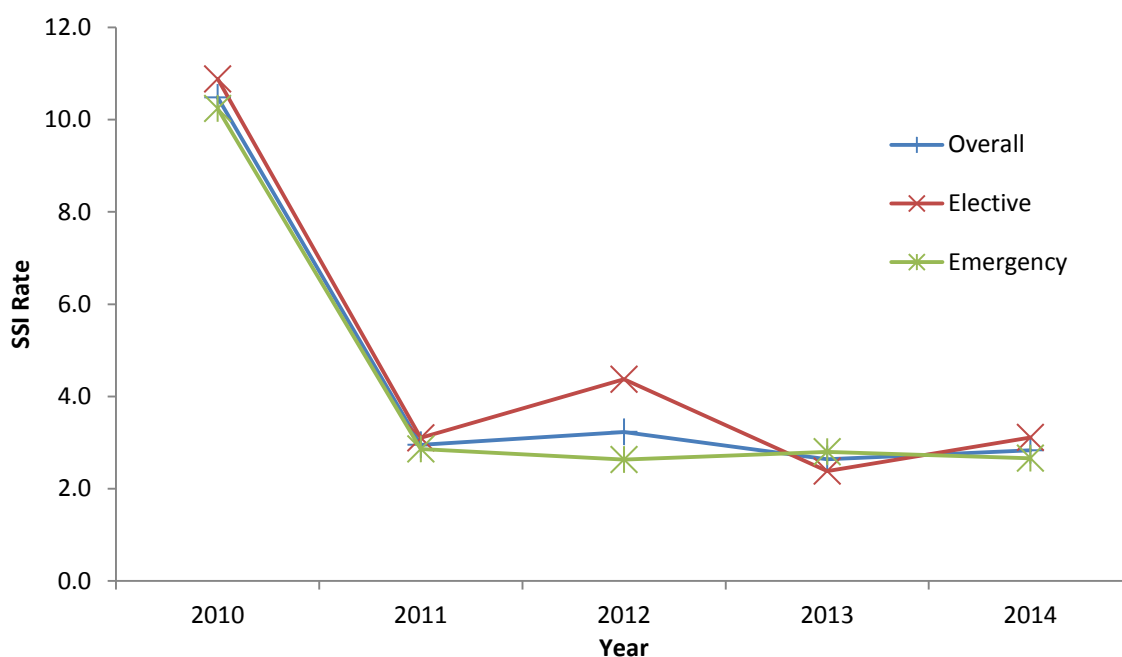
**Table 2.3** Incidence of overall SSI\*\* in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Aneurin Bevan	1555	44	2.83 (2.06-3.80)

\* Figures based on valid surveillance forms only. This only includes procedures with either an SSI field completed on the main form or where infection data could be updated post-discharge.

\*\* Overall SSI rate (%) is based on the valid forms rule previously described and is not based on the inpatient SSI rate combined with the post-discharge SSI rate.

### Incidence of SSI over time



**Figure 2.1** Overall, elective and emergency SSI rates for 2010-2014

**Table 2.4** Overall SSI rate and broken down by operation type 2010 - 2014

Operation type	Year	No. Procedures	No. SSI	% SSI (95% CI)
All C-section procedures	2014	1555	44	2.83 (2.06-3.80)
	2013	1667	44	2.64 (1.92-3.54)
	2012	1515	49	3.23 (2.39-4.28)
	2011	1526	45	2.95 (2.15-3.95)
	2010	1526	160	10.48 (8.92-12.24)
Elective	2014	610	19	3.11 (1.88-4.86)
	2013	631	15	2.38 (1.33-3.92)
	2012	526	23	4.37 (2.77-6.56)
	2011	581	18	3.10 (1.84-4.90)
	2010	579	63	10.88 (8.36-13.92)
Emergency	2014	941	25	2.66 (1.72-3.92)
	2013	1036	29	2.80 (1.87-4.02)
	2012	989	26	2.63 (1.72-3.85)
	2011	945	27	2.86 (1.88-4.16)
	2010	947	97	10.24 (8.31-12.00)

### Incidence of SSI by infection type

**Table 2.5** Type of SSI, specifically superficial and deep seated infections for C-section procedures carried out in 2014

SSI type	%
Superficial infections	81.8
Deep seated infections	11.4
Unknown	6.8

**Table 2.6** Overall SSI rate (%) broken down by SSI type - 2014

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	36	2.17 (1.52-3.00)
Deep seated infections	5	0.30 (0.10-0.72)
Unknown	3	0.18 (0.04-0.53)

**Table 2.7** Post-discharge SSI rate (%) broken down by SSI type, specifically superficial and deep seated infections in 2014

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	33	2.04 (1.41-2.87)
Deep seated infections	5	0.31 (0.10-0.72)
Unknown	3	0.19 (0.04-0.54)

## **Summary:**

Aneurin Bevan's SSI rate following c-section in 2014 was 2.8% compared to 3.2% and 2.6% in 2012 and 2013 respectively.

Most common infection type is superficial (81.8% of infections)

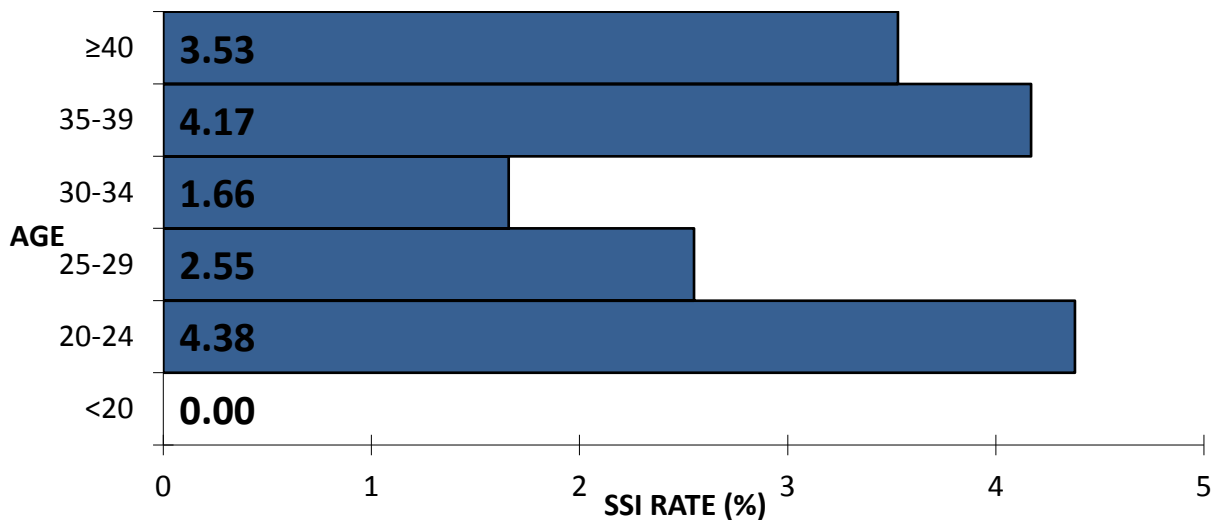
Overall SSI rate in 2014, broken down by SSI type: 2.2% superficial infections and 0.3% deep seated infections.

Post discharge SSI rate in 2014, broken down by SSI type: 2.0% superficial infections and 0.3% deep seated infections.

Both elective and emergency SSI rates decreased by >5% when comparing data from 2010 to 2015.

## SECTION 3. General demographics

### Incidence of SSI by age category



**Figure 3.1** Pyramid plot showing age and corresponding SSI rate (%)

**Table 3.1** C-section SSI with age - 2014 (specific age bands based on those utilised by The National Sentinel Caesarean section Audit report)<sup>10</sup>

Age group	No. of valid procedures*	No. of SSI	% SSI (95% CI)
<20	42	0	0.00 (0.00-8.78)
20-24	251	11	4.38 (2.19-7.84)
25-29	432	11	2.55 (1.27-4.50)
30-34	481	8	1.66 (0.72-3.28)
35-39	240	10	4.17 (2.00-7.66)
≥40	85	3	3.53 (0.73-10.31)

\*24 procedures have been excluded because the age question was not completed

### Incidence of SSI by BMI category

**Table 3.2** C-section SSI with BMI in Wales in 2014 (using World Health Organisation BMI categories)<sup>11</sup>

BMI	No. of procedures*	No. of SSI	% SSI
Underweight <18.5	11	1	9.09 (0.23-50.65)
Healthy weight 18.5 – 24.9	169	4	2.37 (0.64-6.06)
Overweight 25 – 29.9	178	9	5.06 (2.31-9.60)
Obese ≥30	235	14	5.96 (3.26-10.00)

\*1005 procedures have been excluded because the BMI question was not completed



## SECTION 4. Details of the surgical procedure

### Incidence of SSI following elective and emergency procedures

**Table 4.1** C-section SSI in elective and emergency surgical procedures in Wales in 2014

Operation Type	No. Procedures*	No. SSI	% SSI (95% CI)
Elective Procedure	610	19	3.11 (1.86-4.86)
Emergency Procedure	941	25	2.66 (1.72-3.92)

\*4 procedures have been excluded because the operation type was not completed

### Incidence of SSI by timing of antibiotic prophylaxis

**Table 4.2(a)** Percentage (%) of C-section procedures by timing of antibiotic prophylaxis in 2014

Timing of antibiotic prophylactic	No. Procedures*	%
Prior to incision	1432	96
After incision	60	4

\*48 procedures have been excluded because the prophylactic antibiotic question was not completed

**Table 4.2(b)** C-section SSI with antibiotic prophylaxis in 2014

Was prophylactic antibiotic given?	No. Procedures*	No. SSI	% SSI (95% CI)
Yes prior to incision	1432	41	2.86 (2.05-3.88)
Yes after incision	60	1	1.67 (0.04-9.29)
No	15	1	6.67 (0.17-37.14)

\*48 procedures have been excluded because the prophylactic antibiotic question was not completed

### Incidence of SSI by skin closure type

**Table 4.3** Percentage (%) of c-section procedures with type of skin closure used in 2014

Type of skin closure	No. Procedures*	%
Dissolvable suture	444	28.9
Removable suture	1085	70.8
Staples	4	0.3

\*22 procedures have been excluded because the type of skin closure utilised was not completed

**Table 4.4** C-section SSI with type of skin closure used in 2014

Type of skin closure	No. Procedures*	No. SSI	% SSI (95% CI)
Dissolvable suture	444	5	1.13 (0.37-2.63)
Removable suture	1085	39	3.69 (2.56-4.91)
Staples	4	0	0.00 (0.00-92.22)

\*22 procedures have been excluded because the type of skin closure utilised was not completed

## SECTION 5. Post-discharge details and onset of infection

### Length of stay in hospital

**Table 5.1** C-section SSI by hospital stay length (days)

Length of hospital stay (days)	No. Procedures*	No. SSI	% SSI (95% CI)
0 – 5	1419	30	2.11 (1.43-3.02)
6 – 9	65	3	4.62 (0.95-13.49)
> 10	35	0	0.00 (0.00-10.54)

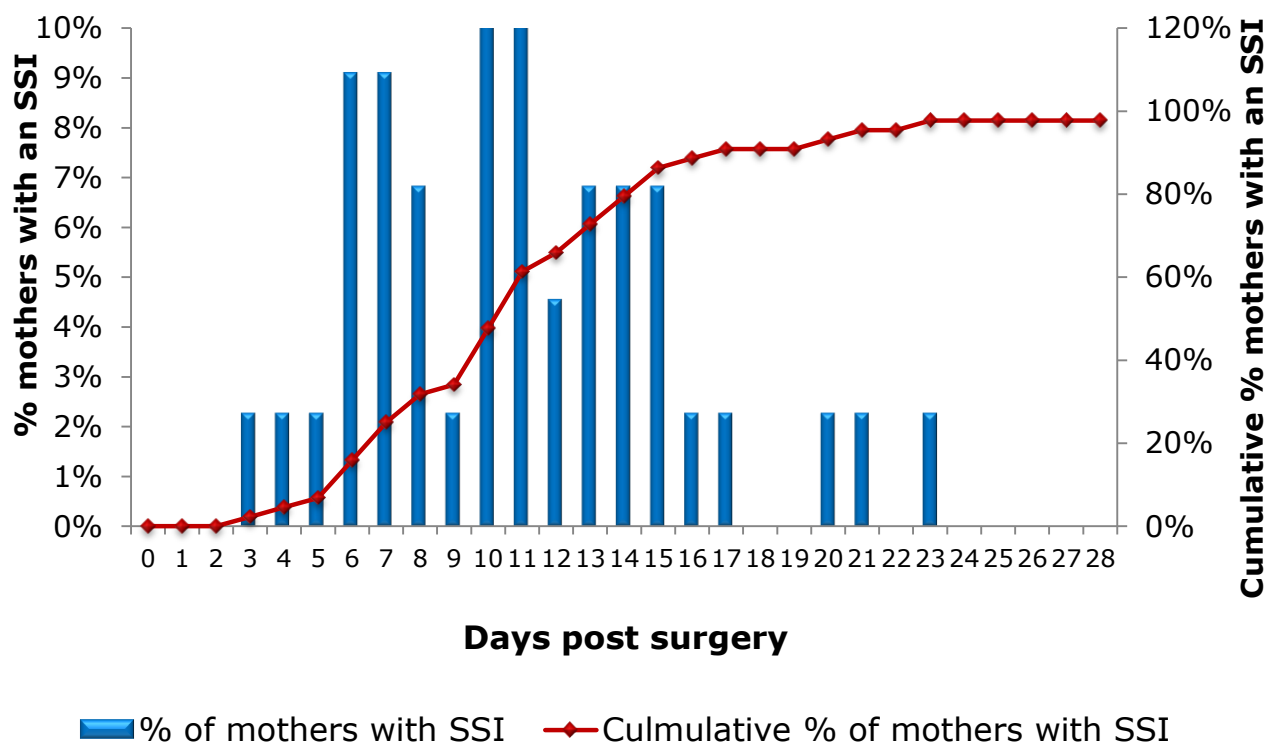
\*36 procedures had hospital discharge dates missing and have therefore been excluded

### Length of midwifery care

**Table 5.2** C-section SSI by length of midwifery care (days)

Length of midwifery care (days)	No. Procedures*	No. SSI	% SSI (95% CI)
≤10	25	0	0.00 (0.00-14.76)
11-14	107	0	0.00 (0.00-3.45)
15-21	495	11	2.22 (1.11-3.98)
22-28	673	21	3.12 (1.93-4.77)
≥29	206	7	3.40 (1.37-7.00)

\*5 procedures had midwifery discharge dates missing and have therefore been excluded from this table



**Figure 5.1** Post discharge surveillance and onset of infection