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Wales

# **ANNUAL REPORT: 2014**

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

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

### **Appendix 6: Hywel Dda**

**VERSION 1**

**Issued 23/12/15**

## Acknowledgements

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## CONTENTS

Acknowledgements.....	2
SECTION 1: Results.....	3
Surveillance form returns .....	3
Completion rates of surveillance forms.....	3
Surveillance Compliance .....	3
SECTION 2. SSI rate .....	5
Incidence of in-patient, post-discharge and overall SSI .....	5
Incidence of SSI over time.....	5
Incidence of SSI by infection type .....	6
SECTION 3. General demographics.....	8
Incidence of SSI by age category.....	8
Incidence of SSI by BMI category .....	8
SECTION 4. Details of the surgical procedure .....	9
Incidence of SSI following elective and emergency procedures .....	9
Incidence of SSI by timing of antibiotic prophylaxis .....	9
Incidence of SSI by skin closure type .....	9
SECTION 5. Post-discharge details and onset of infection .....	10
Length of stay in hospital .....	10
Length of midwifery care .....	10

## 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*
931	931	930 (99.9)	930	99.9 (930/931)

### 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):	931	931	100
If Yes, SSI type	2	3	66.7
If Yes, Infection date	3	3	100
Post-discharge SSI* (Yes/No):	930	930	100
If Yes, Infection date	26	26	100
If Yes, SSI type	25	26	96.2
Overall SSI**	930	931	99.9

\*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.

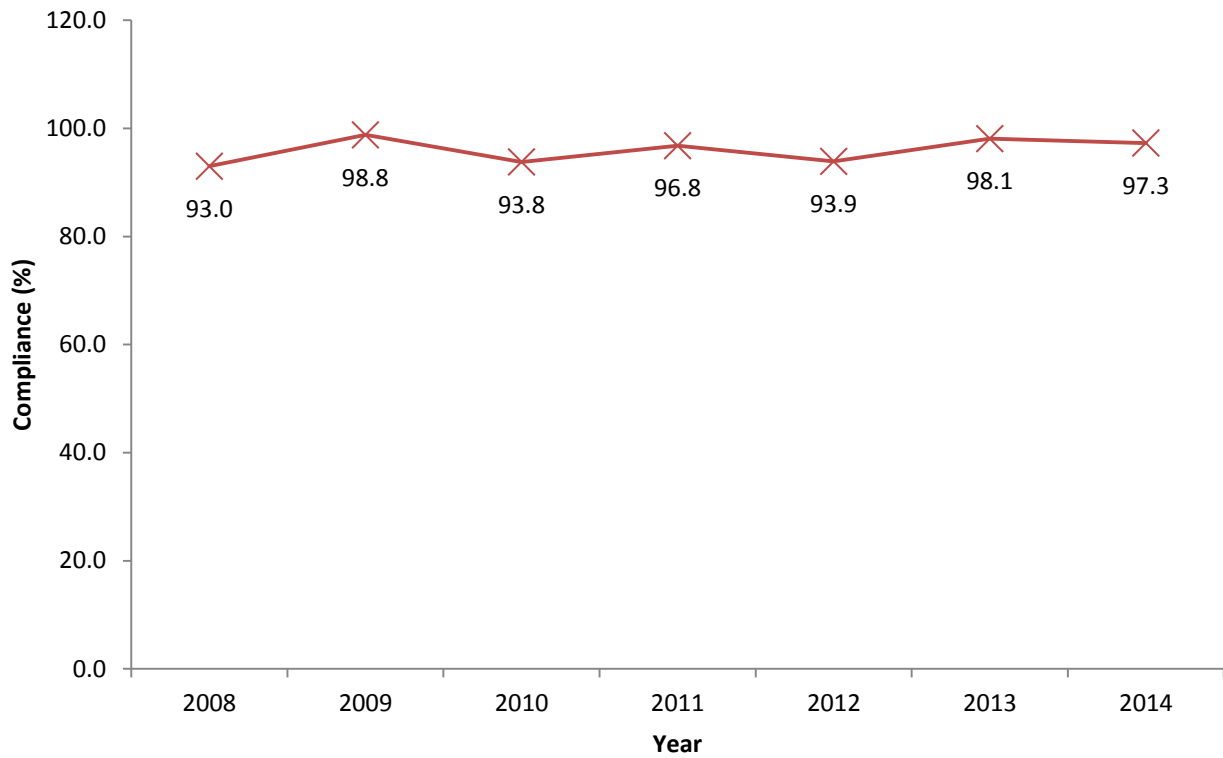
There were no data items on the c-section SSI surveillance form with  $\leq 85\%$  completion in 2014.

### 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
931	930	956	97.3

\* 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:**

99.9% of data received could be utilised for data analysis

Data items on the form were completed well throughout

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)
Hywel Dda	931	3	0.32 (0.07-0.94)

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

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Hywel Dda	930	26	2.80 (1.83-4.10)

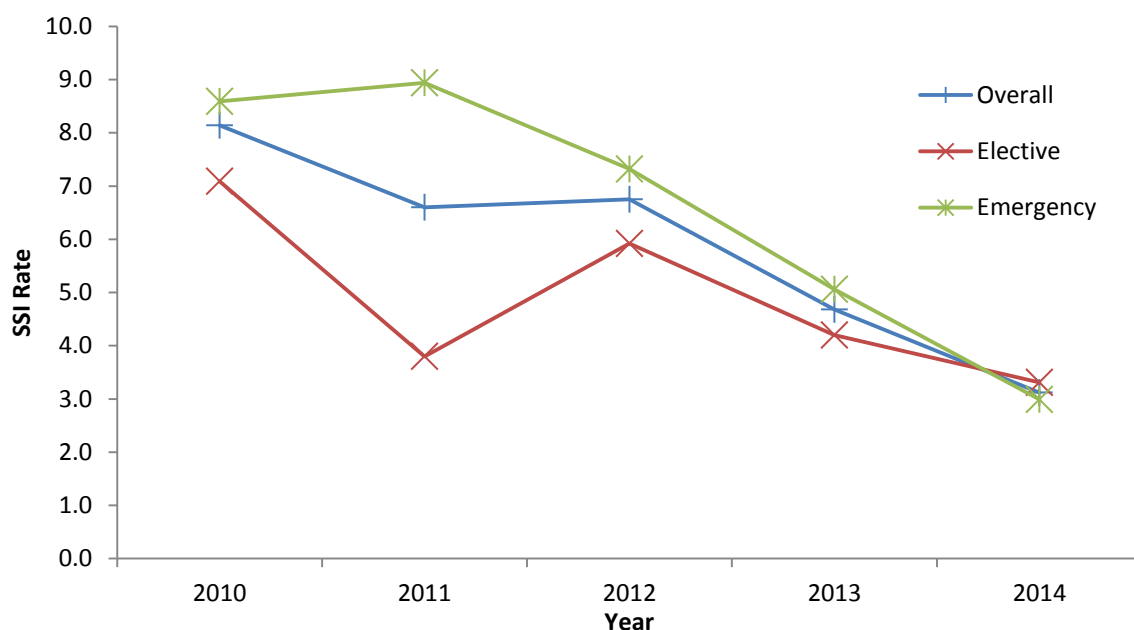
**Table 2.3** Incidence of overall SSI\*\* in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Hywel Dda	930	29	3.12 (2.09-4.48)

\* 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	930	29	3.12 (2.09-4.48)
	2013	919	43	4.68 (3.39-6.30)
	2012	948	64	6.75 (5.20-8.62)
	2011	879	58	6.60 (5.20-8.62)
	2010	970	79	8.14 (6.45-10.15)
Elective	2014	393	13	3.31 (1.76-5.66)
	2013	404	17	4.21 (2.45-6.74)
	2012	422	25	5.92 (3.83-8.75)
	2011	395	15	3.80 (2.13-6.26)
	2010	381	27	7.09 (4.67-10.31)
Emergency	2014	536	16	2.99 (1.71-4.85)
	2013	514	26	5.06 (3.30-7.41)
	2012	519	38	7.32 (5.18-10.05)
	2011	481	43	8.94 (6.47-12.04)
	2010	582	50	8.59 (6.38-11.33)

### 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	89.7
Deep seated infections	3.4
Unknown	6.9

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

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	26	2.80 (1.83-4.10)
Deep seated infections	1	0.11 (0.00-0.60)
Unknown	2	0.22 (0.03-0.78)

**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	24	2.58 (1.65-3.84)
Deep seated infections	1	0.11 (0.00-0.60)
Unknown	1	0.11 (0.00-0.60)

**Summary:**

Hywel Dda's SSI rate following c-section in 2014 was 3.1% compared to 6.8% and 4.7% in 2012 and 2013 respectively.

Most common infection type is superficial (89.7% of infections)

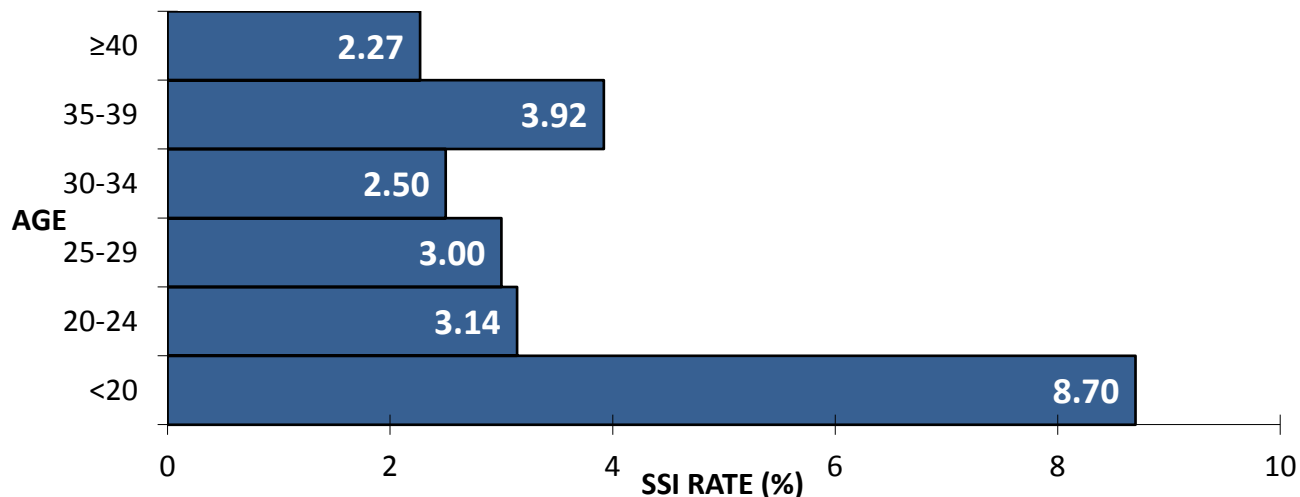
Overall SSI rate in 2014, broken down by SSI type: 2.8% superficial infections and 0.1% deep seated infections.

Post discharge SSI rate in 2014, broken down by SSI type: 2.6% superficial infections and 0.1% deep seated infections.

Emergency SSI rates have decreased by approximately 5% when comparing data from 2010 to 2015, while elective SSI rates have decreased in the region of 4%.

## 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	23	2	8.70 (1.05-31.41)
20-24	159	5	3.14 (1.02-7.34)
25-29	267	8	3.00 (1.29-5.90)
30-34	280	7	2.50 (1.01-5.15)
35-39	153	6	3.92 (1.44-8.54)
≥40	44	1	2.27 (0.06-12.66)

\*4 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	6	0	0.00 (0.00-61.48)
Healthy weight 18.5 – 24.9	239	4	1.67 (0.46-4.29)
Overweight 25 – 29.9	329	9	2.74 (1.25-5.19)
Obese ≥30	350	16	4.57 (2.61-7.42)

\*6 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	393	13	3.31 (1.76-5.66)
Emergency Procedure	536	16	2.99 (1.71-4.85)

\*1 procedure has 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	740	81.2
After incision	171	18.8

\*16 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	740	22	2.97 (1.86-4.50)
Yes after incision	171	6	3.51 (1.29-7.64)
No	3	0	0.00 (0.00-122.96)

\*16 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	707	76.9
Removable suture	209	22.7
Staples	3	0.4

\*11 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	707	20	2.83 (1.73-4.37)
Removable suture	209	8	3.83 (1.65-7.54)
Staples	3	0	0.00 (0.00-122.96)

\*11 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	890	26	2.92 (1.91-4.28)
6 – 9	28	1	3.57 (0.09-19.90)
≥ 10	11	2	18.18 (2.20-65.68)

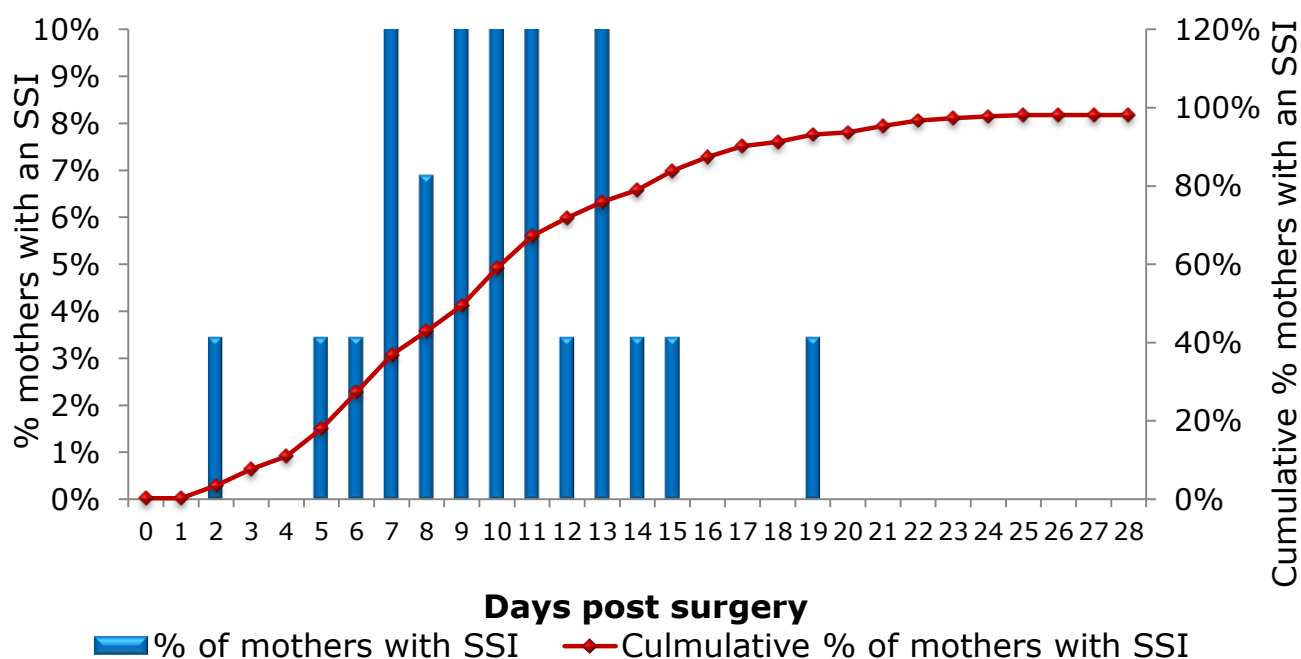
\*1 procedure had hospital discharge date missing and has therefore been excluded

### 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	43	1	2.33 (0.006-12.96)
11-14	388	5	1.29 (0.42-3.01)
15-21	419	17	4.06 (2.36-6.50)
22-28	59	5	8.47 (2.75-19.78)
≥29	14	1	7.14 (0.18-39.80)

\*7 procedures had midwifery discharge dates missing and have therefore been excluded from this table



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