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ANNUAL REPORT: 2014

Caesarean-Section Surgical Site Infection Surveillance

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

Appendix 4: Cardiff and Vale

VERSION 1

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Acknowledgements

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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*
845	845	840 (99.4)	826	97.8 (826/845)

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):	830	845	98.2
If Yes, SSI type	6	8	75
If Yes, Infection date	8	8	100
Post-discharge SSI* (Yes/No):	840	840	100
If Yes, Infection date	69	70	98.6
If Yes, SSI type	68	70	97.1
Overall SSI**	826	845	97.8

*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 ≤85% completion in 2014.

Data Item	No. completed	No. expected	% Complete
Operating Surgeon Code	563	845	66.6

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
845	826	1157	71.4

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

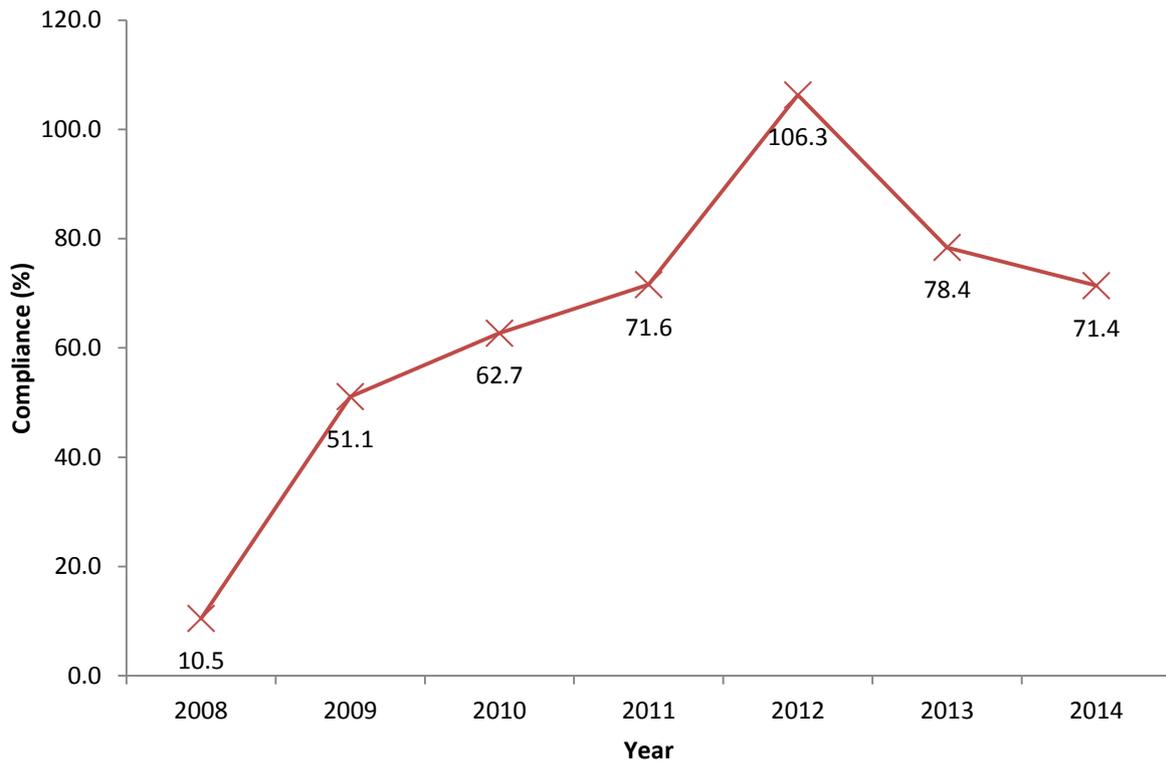


Figure 1.1 Trend rate for compliance: 2008-2014

Summary:

98% of data received could be utilised for data analysis

Data items on the form were generally completed well however the Operating Surgeon Code field remains blank in 33% of records

Compliance has decreased in 2014 to 71%

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)
Cardiff and Vale	845	8	0.95 (0.41-1.87)

Table 2.2 Incidence of post-discharge SSI in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Cardiff and Vale	840	70	8.33 (6.50-10.53)

Table 2.3 Incidence of overall SSI** in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Cardiff and Vale	826	78	9.44 (7.46-11.79)

* 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

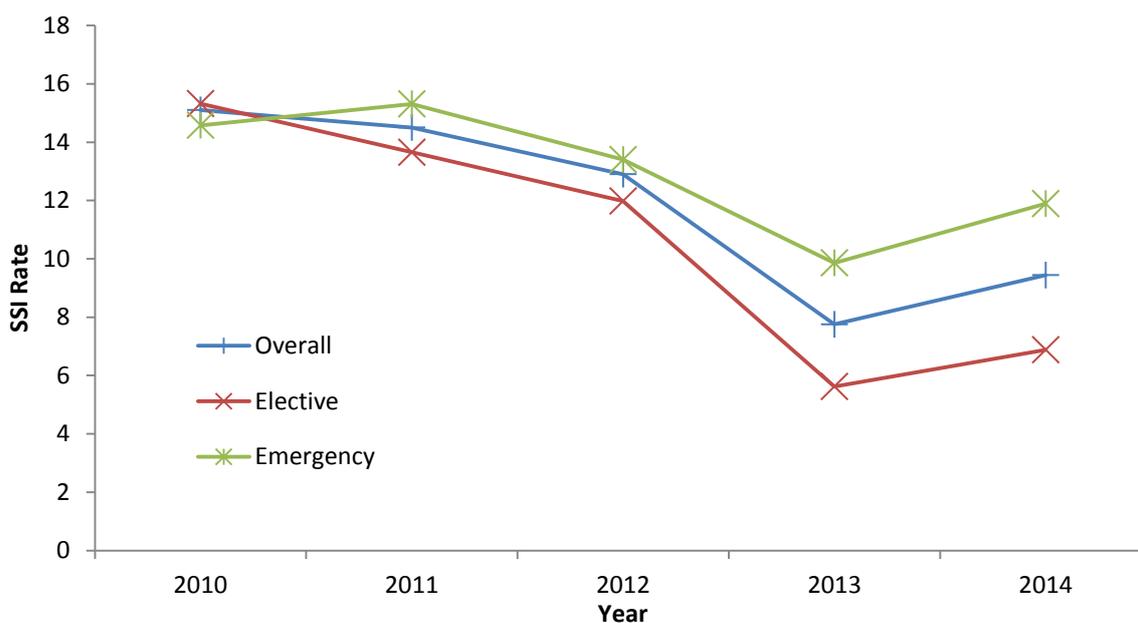


Figure 2.1 Overall, elective and emergency SSI rates for 2010-2014

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	826	78	9.44 (7.46-11.79)
	2013	968	75	7.75 (6.09-9.71)
	2012	1030	133	12.91 (10.81-15.30)
	2011	924	134	14.50 (12.15-17.18)
	2010	881	133	15.10 (12.64-17.89)
Elective	2014	407	28	6.88 (4.57-9.94)
	2013	463	26	5.62 (3.67-8.23)
	2012	484	58	11.98 (9.10-15.49)
	2011	425	58	13.65 (10.36-17.64)
	2010	924	59	15.32 (11.67-19.77)
Emergency	2014	412	49	11.89 (8.80-15.72)
	2013	487	48	9.86 (7.27-13.07)
	2012	530	71	13.40 (10.46-16.90)
	2011	490	75	15.31 (12.04-19.19)
	2010	480	70	15.10 (12.64-17.89)

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	70.5
Deep seated infections	24.4
Unknown	5.1

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

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	55	6.67 (5.02-8.68)
Deep seated infections	19	2.30 (1.39-3.60)
Unknown	4	0.48 (0.13-1.24)

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	49	5.83 (4.32-7.71)
Deep seated infections	19	2.26 (1.36-3.53)
Unknown	2	0.24 (0.03-0.86)

Summary:

Cardiff and Vale's SSI rate following c-section in 2014 was 9.4% compared to 12.9% and 7.8% in 2012 and 2013 respectively.

Most common infection type is superficial (70.5% of infections).

Overall SSI rate in 2014, broken down by SSI type: 6.7% superficial infections and 2.3% deep seated infections.

Post discharge SSI rate in 2014, broken down by SSI type: 5.8% superficial infections and 2.3% deep seated infections.

Emergency SSI rates decreased by >3% when comparing data from 2010 to 2015, while elective SSI rates decreased by 8%.

SECTION 3. General demographics

Incidence of SSI by age category

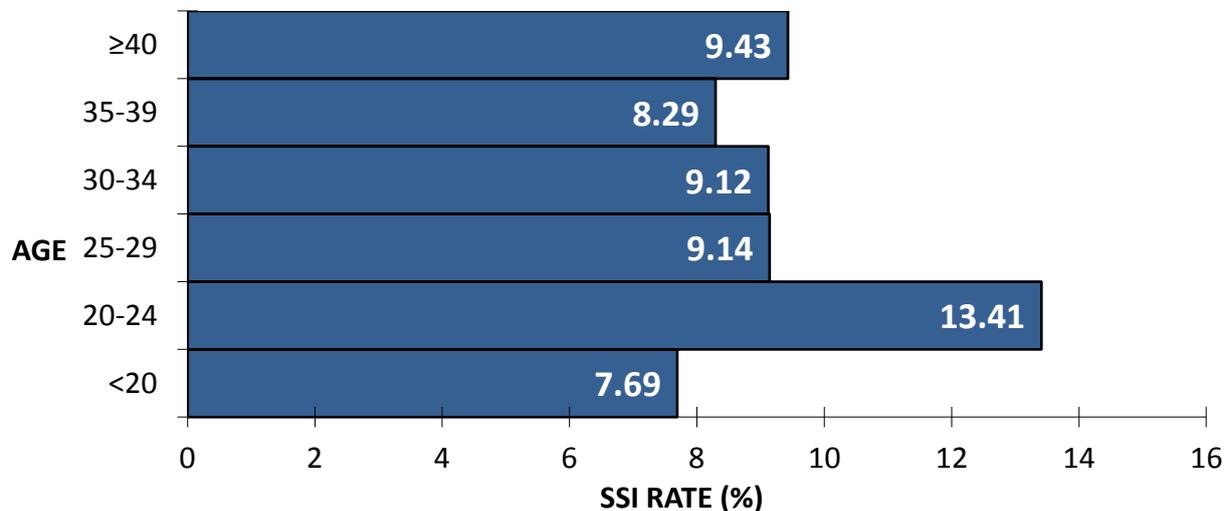


Figure 3.1 Pyramid plot showing age and corresponding SSI rate (%)

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

Age group	No. of valid procedures*	No. of SSI	% SSI (95% CI)
<20	13	1	7.69 (1.95-42.86)
20-24	82	11	13.41 (6.70-24.00)
25-29	175	16	9.14 (5.23-14.85)
30-34	296	27	9.12 (6.01-13.27)
35-39	193	16	8.29 (4.74-13.46)
≥40	53	5	9.43 (3.06-22.02)

*14 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)¹¹

BMI	No. of procedures*	No. of SSI	% SSI
Underweight <18.5	7	1	14.29 (3.62-79.59)
Healthy weight 18.5 – 24.9	250	20	8.00 (4.89-12.36)
Overweight 25 – 29.9	242	21	8.68 (5.37-13.26)
Obese ≥30	261	31	11.88 (8.07-16.86)

*66 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	407	28	6.88 (4.57-9.94)
Emergency Procedure	412	49	11.89 (8.80-15.72)

*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	773	97.8
After incision	17	2.2

*34 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	773	74	9.57 (7.52-12.16)
Yes after incision	17	1	5.88 (1.49-32.77)
No	2	0	0.00 (0.00-184.44)

*34 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	30	3.7
Removable suture	690	85.5
Staples	87	10.8

*19 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	30	1	3.33 (0.84-18.57)
Removable suture	690	62	8.99 (6.89-11.52)
Staples	87	14	16.09 (8.80-27.00)

*19 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	756	67	8.86 (6.75-11.11)
6 – 9	46	7	15.22 (6.12-31.35)
≥ 10	16	1	6.25 (1.58-34.82)

*8 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	13	1	7.69 (1.95-42.86)
11-14	62	3	4.84 (1.00-14.14)
15-21	320	13	4.06 (2.16-6.95)
22-28	312	44	14.10 (10.25-18.93)
≥29	98	15	15.31 (8.57-25.25)

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

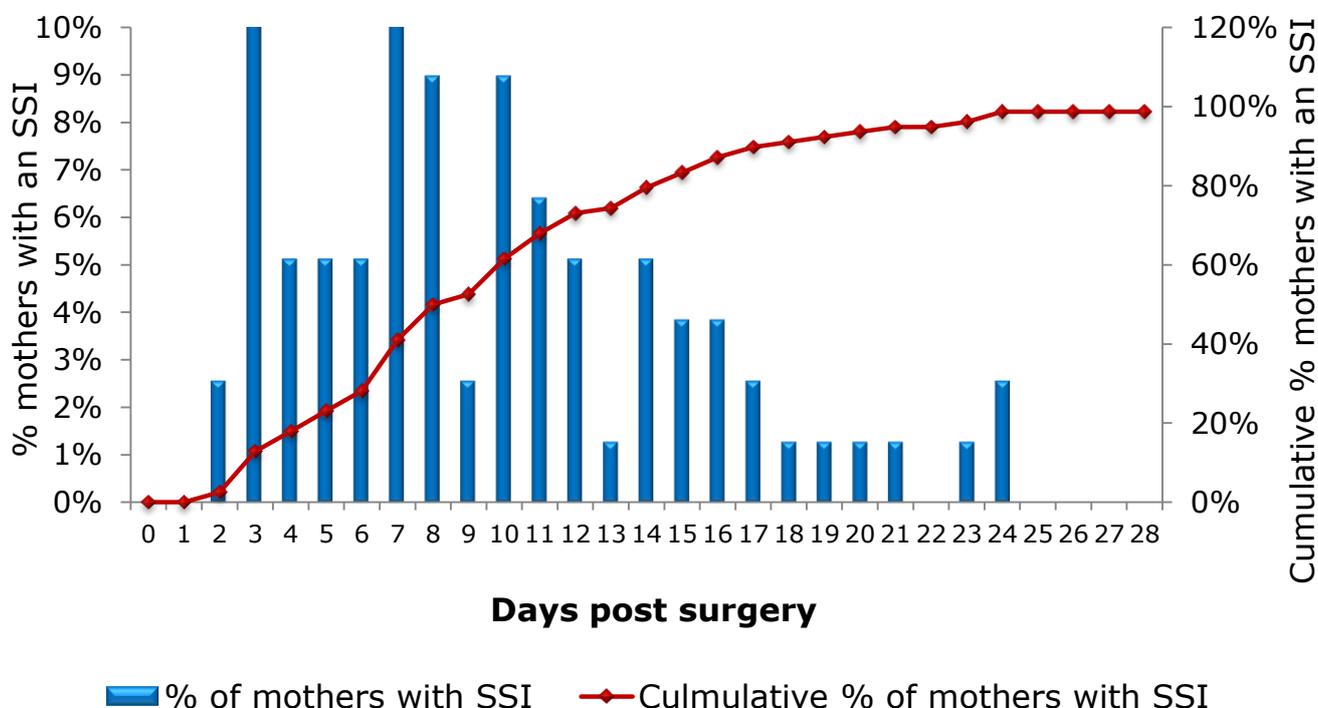


Figure 5.1 Post discharge surveillance and onset of infection