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ANNUAL REPORT: 2014

Caesarean-Section Surgical Site Infection Surveillance

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

Appendix 3: Betsi Cadwaladr

VERSION 1

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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*
1639	1639	1566 (95.5%)	1548	94.4 (1548/1639)

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):	1618	1639	98.7
If Yes, SSI type	6	7	85.7
If Yes, Infection date	7	7	100
Post-discharge SSI* (Yes/No):	1566	1566	100
If Yes, Infection date	72	72	100
If Yes, SSI type	70	72	97.2
Overall SSI**	1548	1639	94.4

*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.
There were no data items in this category

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
1639	1548	1704	90.8

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

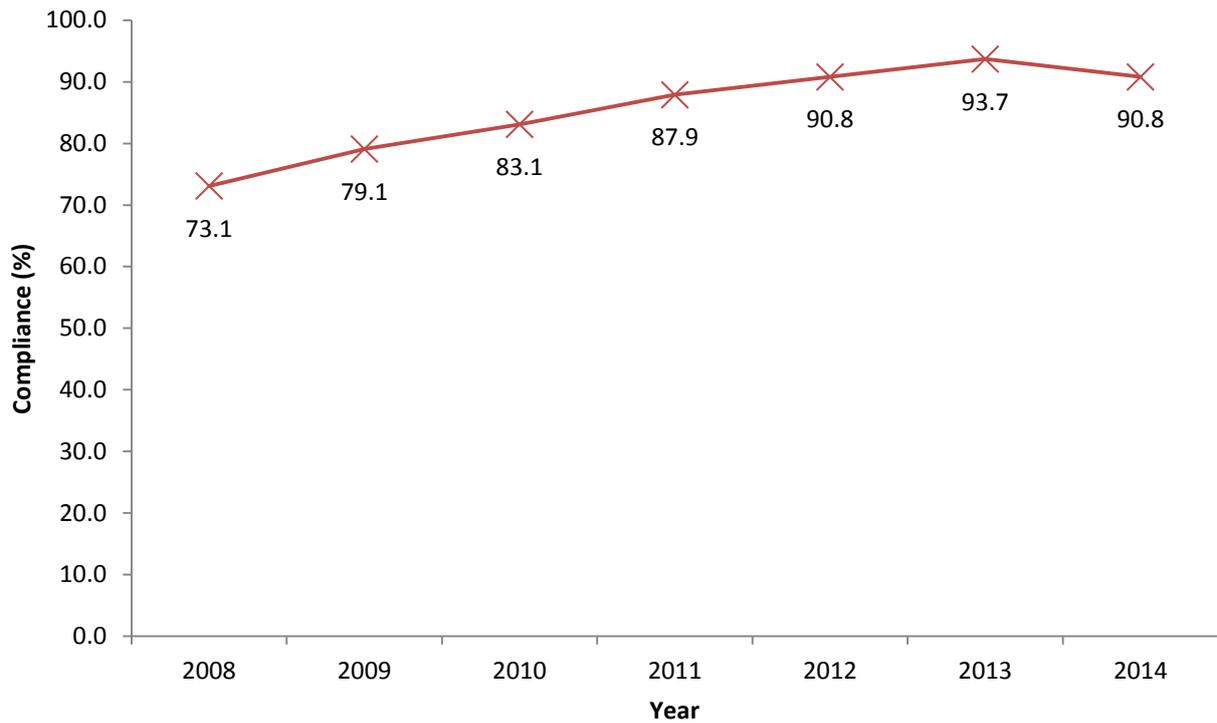


Figure 1.1 Trend rate for compliance: 2008-2014

Summary:

94% of data received could be utilised for data analysis

Data items on the form were completed well

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)
Betsi Cadwaladr	1618	7	0.43 (0.17-0.89)

Table 2.2 Incidence of post-discharge SSI in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Betsi Cadwaladr	1566	72	4.60 (3.60-5.79)

Table 2.3 Incidence of overall SSI** in 2014

	No. of procedures analysed	No. of SSI *	Overall SSI rate (%) * (95% CI)
Betsi Cadwaladr	1548	79	5.10 (4.04-6.36)

* 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

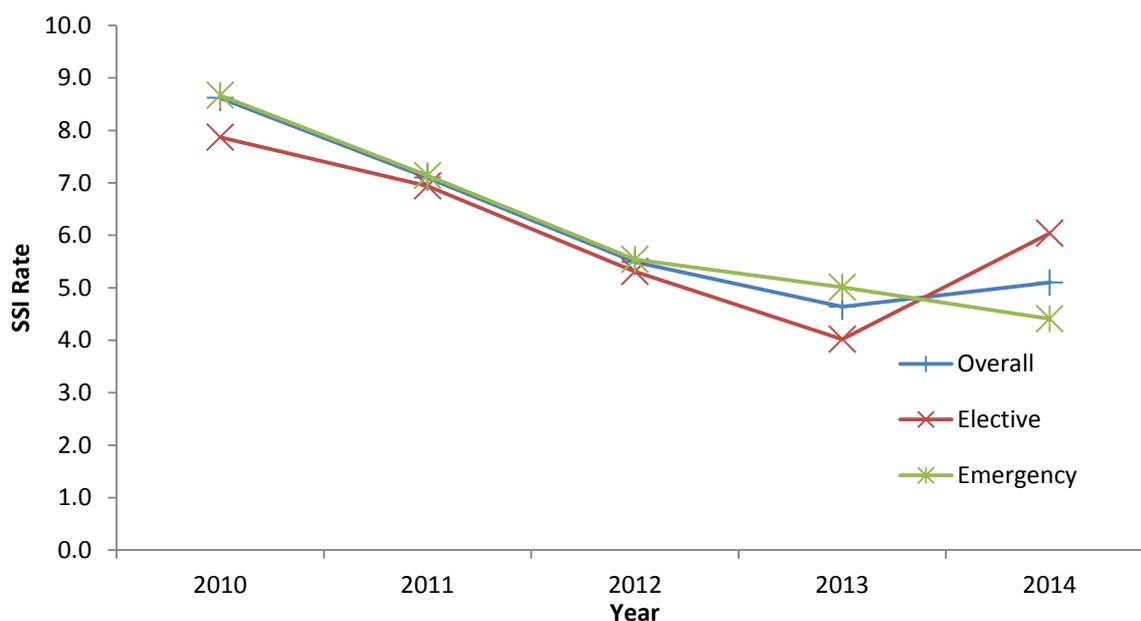


Figure 2.1 Overall, elective and emergency SSI rates for 2010-2014

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	1548	79	5.10 (4.04-6.36)
	2013	1682	78	4.64 (3.67-5.79)
	2012	1749	96	5.49 (4.45-6.70)
	2011	1620	115	7.10 (5.86-8.52)
	2010	1474	127	8.62 (7.18-10.25)
Elective	2014	629	38	6.04 (4.28-8.29)
	2013	671	27	4.02 (2.65-5.85)
	2012	640	34	5.31 (3.68-7.42)
	2011	620	43	6.94 (5.02-9.34)
	2010	559	44	7.87 (5.72-10.57)
Emergency	2014	907	40	4.41 (3.15-6.01)
	2013	998	50	5.01 (3.72-6.61)
	2012	1084	60	5.54 (4.22-7.12)
	2011	980	70	7.14 (5.57-9.02)
	2010	830	72	8.67 (6.79-10.92)

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	91.1
Deep seated infections	5.1
Unknown	3.8

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

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	72	4.65 (3.64-5.86)
Deep seated infections	4	0.26 (0.07-0.66)
Unknown	3	0.19 (0.04-0.57)

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	68	4.34 (3.37-5.50)
Deep seated infections	2	0.13 (0.02-0.46)
Unknown	2	0.13 (0.02-0.46)

Summary:

Betsi Cadwaladr's SSI rate following c-section in 2014 was 5.1% compared to 5.5% and 4.6% in 2012 and 2013 respectively.

Most common infection type is superficial (91.1% of infections)

Overall SSI rate in 2014, broken down by SSI type: 4.7% superficial infections and 0.3% deep seated infections.

Post discharge SSI rate in 2014, broken down by SSI type: 4.3% superficial infections and 0.1% deep seated infections.

Emergency SSI rates decreased by around 4% when comparing data from 2010 to 2015, and elective SSI rates decreased by approximately 2%.

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	52	3	5.77 (1.19-16.86)
20-24	257	18	7.00 (4.15-11.07)
25-29	434	19	4.38 (2.64-6.84)
30-34	455	24	5.27 (3.38-7.85)
35-39	264	10	3.79 (1.82-6.97)
≥ 40	76	5	6.58 (2.14-15.35)

*10 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	21	0	0.00 (0.00-17.57)
Healthy weight 18.5 – 24.9	526	20	3.80 (2.32-5.87)
Overweight 25 – 29.9	454	17	3.74 (2.18-6.00)
Obese ≥ 30	485	42	8.66 (6.24-11.71)

*62 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	629	38	6.04 (4.28-8.29)
Emergency Procedure	907	40	4.41 (3.15-6.01)

*12 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	1320	92.3
After incision	110	7.7

*89 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	1320	71	5.38 (4.20-6.78)
Yes after incision	110	3	2.73 (0.56-7.97)
No	29	1	3.45 (0.09-19.21)

*89 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	858	57.5
Removable suture	357	23.9
Staples	278	18.6

*55 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	858	29	3.38 (2.26-4.85)
Removable suture	357	26	7.28 (4.76-10.67)
Staples	278	23	8.27 (5.24-12.41)

*55 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	1447	70	4.84 (3.77-6.11)
6 – 9	76	4	5.26 (1.43-13.48)
≥ 10	16	3	18.75 (3.87-54.80)

*9 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	214	5	2.34 (0.76-5.45)
11-14	340	9	2.65 (1.21-5.02)
15-21	349	21	6.02 (3.72-9.20)
22-28	242	17	7.02 (4.09-11.25)
≥29	364	21	5.77 (3.57-8.82)

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

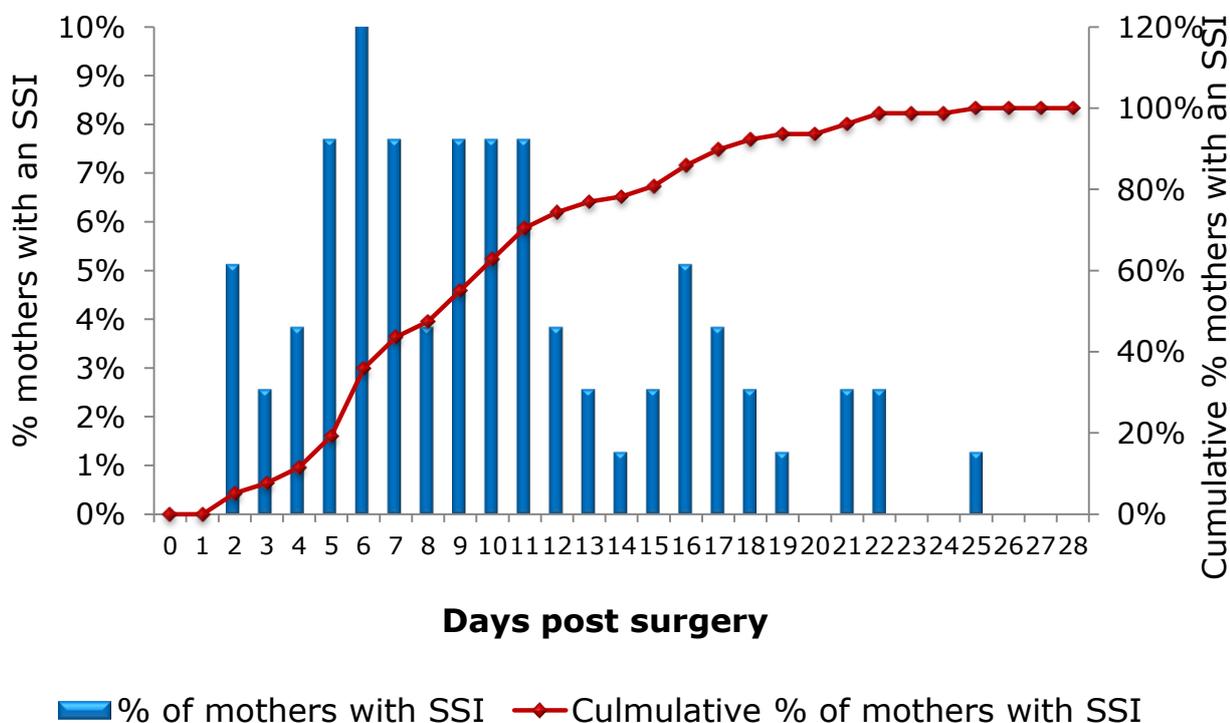


Figure 5.1 Post discharge surveillance and onset of infection