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ANNUAL REPORT: 2015

Caesarean-Section Surgical Site Infection Surveillance

(Includes data from 01/01/2015 - 31/12/2015)

APPENDIX F:

Hywel Dda

University Health Board

VERSION 1

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Contents

Section 1: Results	3
Surveillance form returns	3
Completion rates of surveillance forms	3
Surveillance compliance	4
Summary:	5
Section 2: SSI rate	6
Incidence of inpatient, post-discharge and overall SSI	6
Incidence of SSIs over time	6
Incidence of SSI by infection type	8
Summary:	8
Section 3: General demographics	9
Incidence of SSI by age	9
Incidence of SSI by BMI	10
Summary:	10
Section 4: Details of the surgical procedure	11
Incidence of SSI following elective and emergency procedures	11
Incidence of SSI by timing of antibiotic prophylaxis	11
Incidence of SSI by wound closure type	11
Summary:	12

Section 1: Results

Surveillance form returns

Table 1.1 Number of inpatient, post-discharge and valid forms returned for the surveillance in 2015 for Hywel Dda UHB.

No. of inpatient 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 used for data analysis*
992	992	992 (100.0)	992	100.0 (992/992)

The SSI rate provided throughout this report is based on the overall infection rate (infections captured before or after discharge) unless otherwise stated. To obtain the overall SSI rate, only valid forms were used in data analysis.

*Valid forms are forms where the SSI field is completed on the main (inpatient) form, or the infection data is subsequently updated at completion of a post-discharge form. A blank SSI field cannot be assumed to mean there is no infection, so these forms are considered invalid.

$$\% \text{ of valid forms} = \frac{\text{Number of valid forms analysed}}{\text{Number of inpatient forms received}} \times 100$$

Completion rates of surveillance forms

Details on the completion of the SSI field on the inpatient and post-discharge form for all Wales is shown in table 1.2. Table 1.3 displays other data items on the inpatient and post-discharge form that have a completion of less than 85%.

The procedure date has not been included as a data item in table 1.2 and 1.3 since all data extractions are based on a record having a procedure date.

All data items were over 85% completion.

Table 1.2 % completion of the SSI field on the C-section surveillance form for Hywel Dda UHB (inpatient and post-discharge).

Data Item	No. completed	No. expected	% complete
Inpatient SSI (Yes/No)	992	992	100.0
If Yes, SSI type	1	1	100.0
If Yes, Infection date	1	1	100.0
Post-discharge SSI* (Yes/No)	992	992	100.0
If Yes, Infection date	20	20	100.0
If Yes, SSI type	20	20	100.0

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

Surveillance compliance

Table 1.4 shows the compliance of Wales in the mandatory C-section surveillance for 2015. The table includes the number of surveillance forms returned to WHAIP for 2015 and the number of valid surveillance forms returned (as detailed in table 1.1). The compliance figure is derived from the number of valid surveillance forms returned to WHAIP divided by the number of C-sections reported to NWIS.

Table 1.4 Coverage of the C-section SSI surveillance compared to procedures reported to NWIS in 2015 for Hywel Dda UHB.

No. of surveillance forms returned to WHAIP	No. of valid surveillance forms returned to WHAIP*	No. of C sections reported to PEDW	% compliance
992	992	953	104.1

Figure 1.1 displays the compliance trend for 2008-2015. Compliance is generally excellent, with the compliance rate remaining over 90% since 2008. There may be recent coding issues since compliance has risen above 100% in 2015.

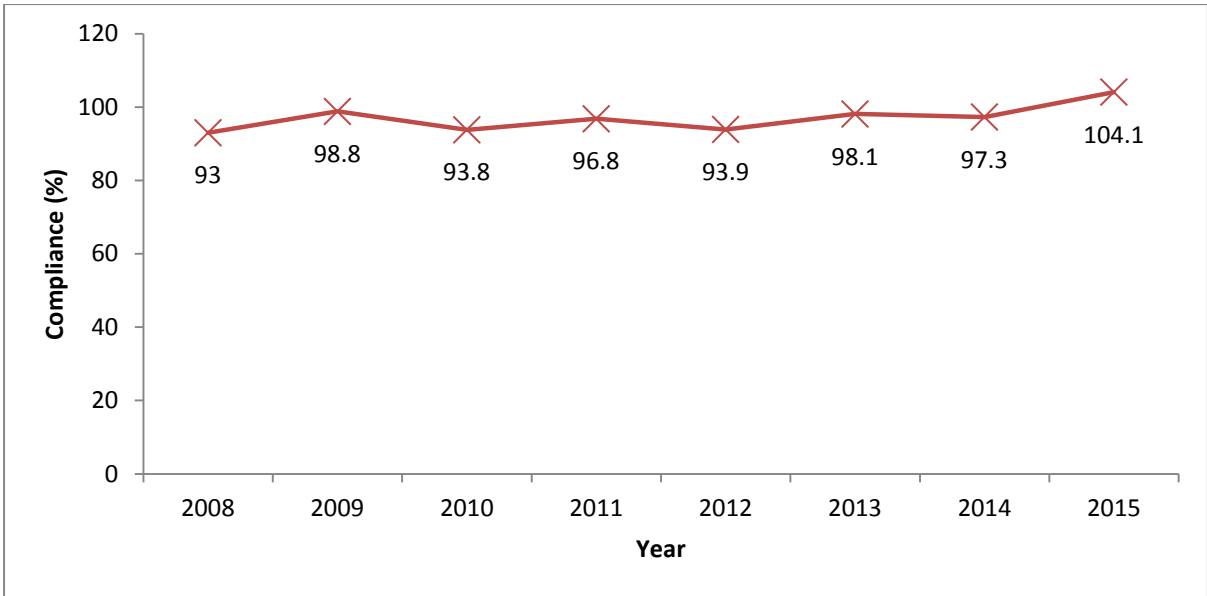


Figure 1.1 Trend rate for compliance from 2008 to 2015 for Hywel Dda UHB.

Summary:

100.0% of data received could be used for analysis.

Data items on the form were all completed well.

Compliance has remained excellent since 2008, with rates of over 90%. However, there may be coding issues in 2015 as the rate has increased above 100%.

Section 2: SSI rate

Incidence of inpatient, post-discharge and overall SSI

Table 2.1 provides the inpatient and post-discharge SSI rates post C-section surgery. All rates are based on valid forms only.

The SSI rates calculated in the remainder of this report are based on an overall rate unless otherwise specified. Since the length of hospital stay after a C-section is generally between two and four days, the majority of SSIs will be captured post-discharge in the community.

Table 2.1 Incidence of inpatient and post-discharge SSIs in 2015 for Hywel Dda UHB.

	No. of procedures analysed	No. of SSI*	SSI rate (%)* (95% CI)
Inpatient	992	1	0.10 (0.00-0.30)
Post-discharge	992	20	2.02 (1.24-3.10)
Overall**	992	21	2.12 (1.22-3.01)

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

**Overall SSI rate is based on the valid forms rule as described in this document, and is not simply based on addition of the inpatient SSIs to the post-discharge SSIs.

Incidence of SSIs over time

It is important to note that, initially, not all health boards were participating in the surveillance, and some health boards were participating but with low compliance rates. Data became more reliable from 2010 onwards when all health boards were participating. Table 2.2 provides the overall SSI rate for 2010 – 2015 and broken down by elective and emergency procedures. Figure 2.1 provides the SSI trend over the same time period.

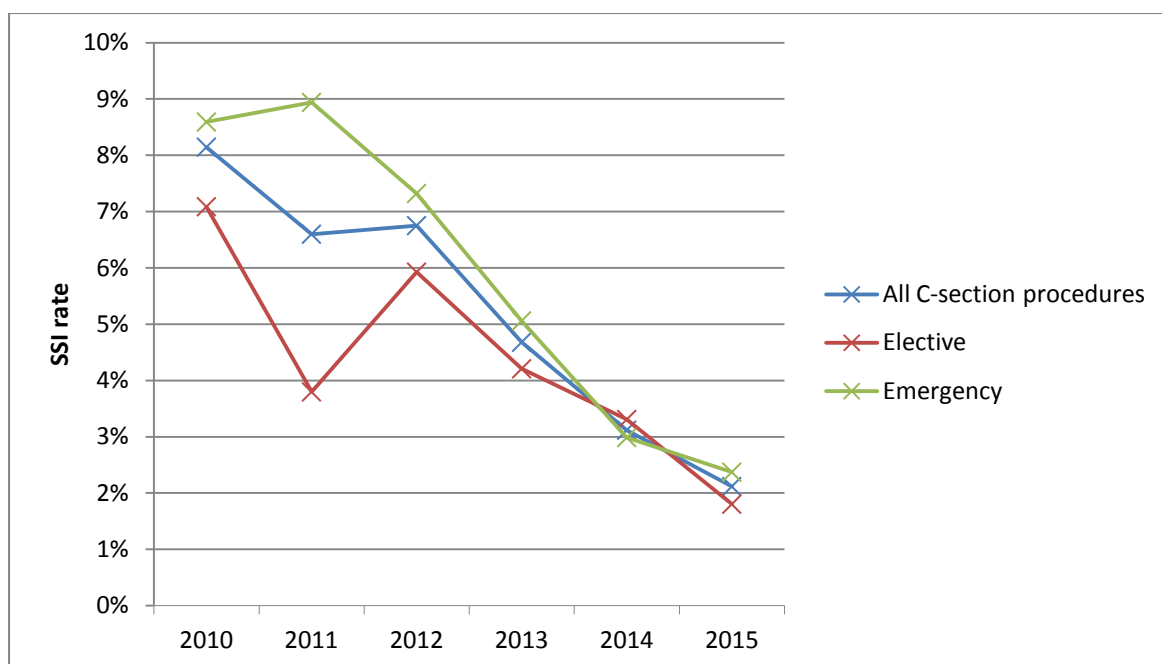


Figure 2.1 Overall, elective and emergency procedures SSI rates for 2010-2015 for Hywel Dda UHB.

Table 2.2 Overall SSI rate for 2010-2015 for Hywel Dda UHB.

Operation type	Year	No. of procedures	No. of SSI	%SSI (95% CI)
All C-section procedures	2015	992	21	2.12 (1.22-3.01)
	2014	930	29	3.12 (2.00-4.24)
	2013	919	43	4.68 (3.31-6.04)
	2012	948	64	6.75 (5.15-8.35)
	2011	879	58	6.6 (4.96-8.24)
	2010	970	79	8.14 (6.42-9.87)
Elective	2015	444	8	1.80 (0.56-3.04)
	2014	393	13	3.31 (1.54-5.08)
	2013	404	17	4.21 (2.25-6.17)
	2012	422	25	5.92 (3.67-8.18)
	2011	395	15	3.8 (1.91-5.68)
	2010	381	27	7.09 (4.51-9.66)
Emergency	2015	548	13	2.37 (1.10-3.65)
	2014	536	16	2.99 (1.54-4.43)
	2013	514	26	5.06 (3.16-6.95)
	2012	519	38	7.32 (5.08-9.56)
	2011	481	43	8.94 (6.39-11.49)
	2010	582	50	8.59 (6.31-10.87)

Incidence of SSI by infection type

The type of SSI recorded on the surveillance form can be categorised into either superficial, deep seated or organ/space infections, which all have specific definitions. Table 2.3 breaks down the infections by type of SSI. Tables 2.4 and 2.5 show the overall infection rate and the post-discharge infection rate broken down by SSI type.

Table 2.3 Types of SSI for C-section procedures carried out in 2015 for Hywel Dda UHB.

SSI type	%
Superficial infections	100.0
Deep seated infections	0.0
Organ/space infections	0.0
Unknown	0.0

Table 2.4 Overall SSI rate (%) broken down by SSI type in 2015 for Hywel Dda UHB.

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	21	2.12 (1.22-3.01)
Deep seated infections	0	0.00 (0.00-0.37)
Organ/Space infections	0	0.00 (0.00-0.37)
Unknown	0	0.00 (0.00-0.37)

Table 2.5 Post-discharge SSI rate (%) broken down by SSI type in 2015 for Hywel Dda UHB.

SSI type	No. SSI	% SSI (95% CI)
Superficial infections	20	2.02 (1.14-2.89)
Deep seated infections	0	0.00 (0.00-0.37)
Organ/Space infections	0	0.00 (0.00-0.37)
Unknown	0	0.00 (0.00-0.37)

Summary:

The SSI rate following C-section procedures in 2015 was 2.1% compared to 3.1% and 4.7% in 2014 and 2013, respectively.

The only type of infection in 2015 was superficial (100.0% of infections).

Overall SSI rate, broken down by SSI type: 2.1% superficial, 0 deep seated, and 0 organ/space infections.

With the exception of 2011, both elective and emergency SSI rates follow a steady downward trajectory, and the 2015 rate is less than a third of the 2010 rate.

Section 3: General demographics

This section gives information about the age groups and BMI of patients and the number of SSIs associated with each category.

Figure 3.1 provides a pyramid plot showing the age and SSI rates and table 3.1 provides the number of SSI by the specified age groups. Table 3.2 displays the number of SSIs by BMI category.

Incidence of SSI by age

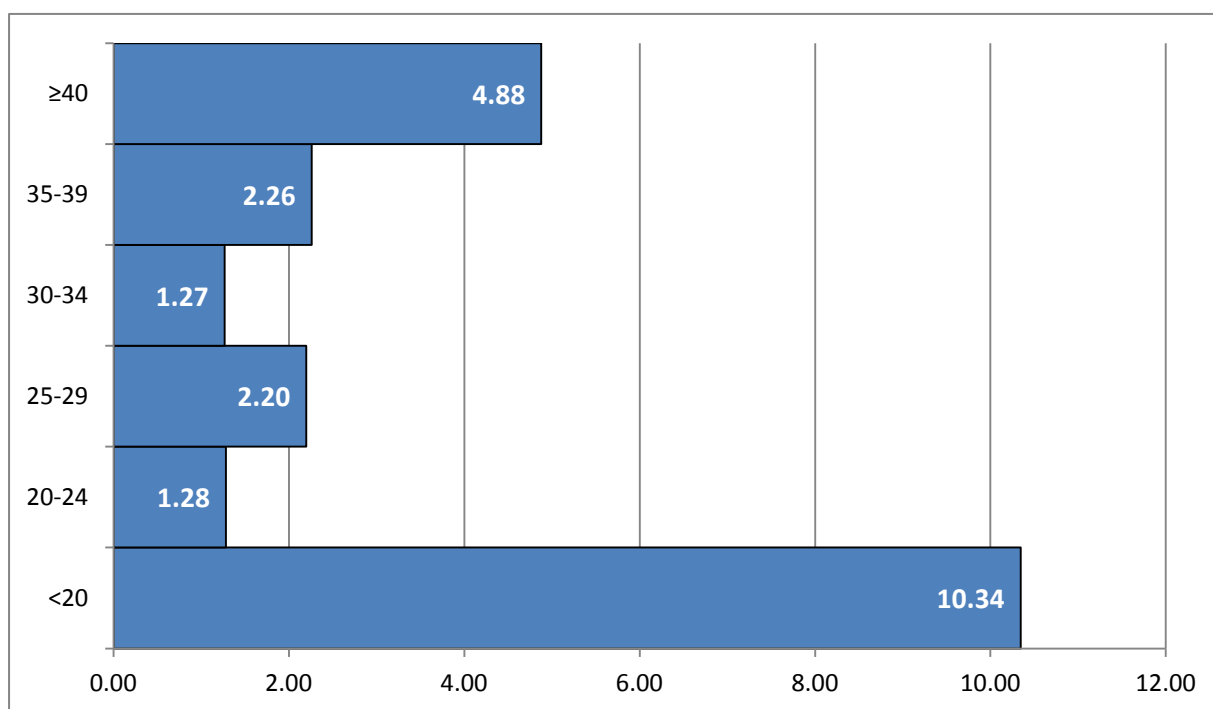


Figure 3.1 Pyramid plot showing age and corresponding SSI rate (%) for Hywel Dda UHB.

Table 3.1 C-section SSI by age in 2015 for Hywel Dda UHB. Procedures where age information was not provided were excluded.

Age group	No. of valid procedures	No. of SSI	% SSI (95% CI)
<20	29	3	10.34 (0.00-21.43)
20-24	156	2	1.28 (0.00-3.05)
25-29	273	6	2.20 (0.46-3.94)
30-34	316	4	1.27 (0.03-2.50)
35-39	177	4	2.26 (0.07-4.45)
≥40	41	2	4.88 (0.00-11.47)

Incidence of SSI by BMI

Table 3.2 C-section SSI rates by BMI in 2015 for Hywel Dda UHB. Procedures where BMI information was not provided were excluded.

BMI category		No. of procedures	No. of SSI	% SSI (95% CI)
Underweight	<18.5	10	0	0.00 (0.00-0.00)
Healthy weight	18.5-24.9	247	2	0.81 (0.00-1.93)
Overweight	25.0-29.9	408	9	2.21 (0.78-3.63)
Obese	≥30.0	327	10	3.06 (1.19-4.92)

Summary:

There was a significant difference in the SSI rates between women aged 40 or over and all other groups. There was no difference between the other groups.

There is no significant difference in the SSI rate between the different BMI groups.

Section 4: Details of the surgical procedure

The following section provides SSI rates associated with specific variables, including the type of operation (elective or emergency), use of and timing of antibiotic prophylaxis and skin closure types.

Incidence of SSI following elective and emergency procedures

Table 4.1 C-section SSI in elective and emergency surgical procedures in 2015 for Hywel Dda UHB. Procedures where this information was not provided were excluded.

Operation type	No. of procedures	No. of SSI	% SSI (95% CI)
Elective procedure	444	8	1.80 (0.56-3.04)
Emergency procedure	548	13	2.37 (1.1-3.65)

Incidence of SSI by timing of antibiotic prophylaxis

Table 4.2.1 Percentage (%) of C-section procedures by timing of antibiotic prophylaxis in 2015 for Hywel Dda UHB. Procedures where no antibiotics given were excluded.

Timing of antibiotic prophylaxis	No. of procedures	%
Prior to incision	854	86.5
After incision	133	13.5

Table 4.2.2 C-section SSI by antibiotic prophylaxis in 2015 for Hywel Dda UHB. Procedures where no antibiotic information given were excluded.

Was prophylactic antibiotic given?	No. of procedures	No. of SSI	% SSI (95% CI)
Yes, prior to incision	854	21	2.46 (1.42-3.50)
Yes, after incision	133	0	0.00 (0.00-0.00)
No	0	0	N/A

Incidence of SSI by wound closure type

Table 4.3 Percentage (%) of C-section procedures by type of skin closure in 2015 for Hywel Dda UHB. Procedures where this information was not available were excluded.

Type of wound closure	No. of procedures	%
Dissolvable suture	907	91.5
Removable suture	79	8.0
Staples	5	0.5

Table 4.4 C-section SSI rates by type of skin closure in 2015 for Hywel Dda UHB. Procedures where closure type information is missing were excluded.

Type of wound closure	No. Of procedures	No. Of SSI	% SSI (95% CI)
Dissolvable suture	907	19	2.09 (1.16-3.03)
Removable suture	79	1	1.27 (0.00-3.73)
Staples	5	1	20.00 (0.00-55.06)

Summary:

Antibiotic prophylaxis was given to all patients.

86.5% of patients received their antibiotic prophylaxis prior to incision, with the remainder receiving antibiotics after incision.

92.0% of wounds were closed with sutures, with the remaining few using staples. Most sutures used were of the dissolvable variety.