



**GIG**  
CYMRU  
**NHS**  
WALES

Iechyd Cyhoeddus  
Cymru  
Public Health  
Wales

**Surveillance:** **Surgical Site Infection (SSI)**

**Report:** **Annual Report**

**Time period:** **1<sup>st</sup> January to 31<sup>st</sup> December 201'**

**Health Board:** **Betsi Cadwaladr University Health Board**

**Content:** Pg 2 - Introduction  
  
Orthopaedic SSI Surveillance  
Pg 3 - All Wales Summary  
Pg 4 - All Wales Results  
  
Caesarean Section SSI Surveillance  
Pg 6 - All Wales Summary  
Pg 7 - All Wales Results  
  
Pg 8 – References  
  
Pg 9 – Appendices  
Appendix I – Health Board Orthopaedic SSI Results  
Appendix II – Health Board Caesarean Section SSI Results

**Issued by:** **Welsh Healthcare Associated Infection Programme (WHAIP)**

**Issue date:** **-<sup>th</sup> A Um201(**

## **INTRODUCTION**

Surgical site infections (SSI) are a substantial cause of mortality and morbidity among hospitalised patients. Studies on orthopaedic surgical site infections have shown them to result in considerable increases in lengths of stay, high re-hospitalisation rates, and significant reductions in health-related quality of life<sup>1,2</sup>. SSI is the second most common infection following a Caesarean section within a group of patients who are generally considered to be young, fit and well females<sup>3</sup>. Complications of both surgery have high human and financial costs<sup>1,2,4</sup>.

The following annual rate report is a summary of information provided by the six Health Boards in Wales performing orthopaedic surgery and / or caesarean section procedures. The report includes data captured both during the hospital stay and post-discharge. The surveillance incorporates data collected by clinical teams (and midwives for c section surveillance) and uses internationally agreed definitions<sup>4</sup>, allowing Welsh data to be compared with and be incorporated into other international databases, such as the ECDC SSI database<sup>5</sup>.

The purpose of this report is to provide an all Wales trend rate report of infections over time and for individual Health Boards to have the opportunity to monitor their own trends over time.

# **1. ORTHOPAEDIC SSI SURVEILLANCE**

## **ALL WALES SUMMARY**

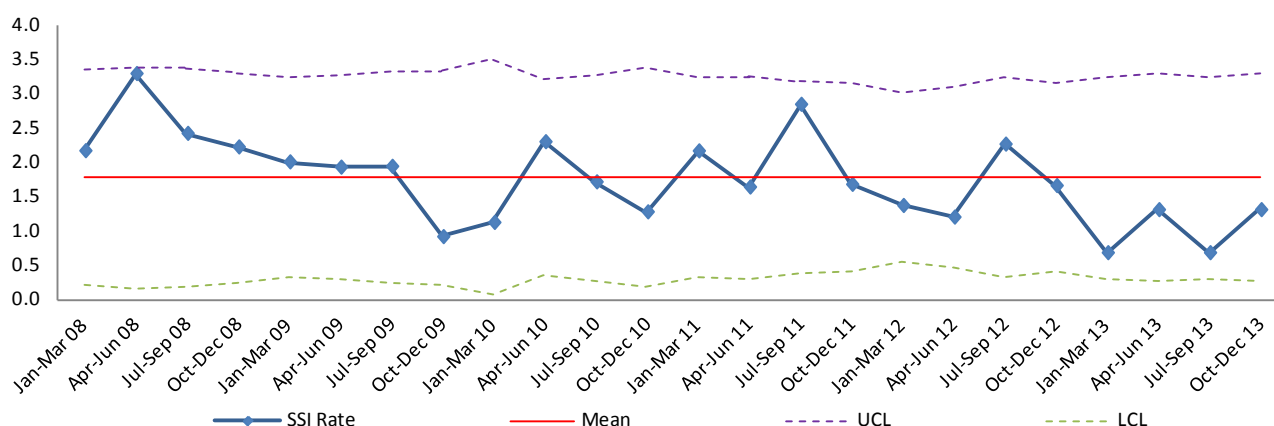
- This annual report covers SSI associated with elective primary hip arthroplasty and elective primary knee arthroplasty.
- A total of 2688 questionnaires were received for hip arthroplasties in 2013. 2675 (99%) of forms could be further analysed for determining the overall SSI rate for 2013.
- 3 inpatient infections and 28 post-discharge infections were detected following hip arthroplasties in 2013, giving a crude overall SSI rate of 1.2%. This rate has decreased since 2012 (1.6%).
- A total of 2973 questionnaires were received for knee arthroplasties in 2013. 2962 (99%) of forms could be further analysed for determining the overall SSI rate for 2013.
- 13 inpatient infections and 28 post-discharge infections were detected following knee arthroplasties in 2013, giving a crude overall SSI rate of 1.4%. This rate is similar to 2012 (1.9%).
- Annual / quarterly trend rates (2008 – 2013) have shown elective primary hip arthroplasty rates to decrease between 2008 and 2010, increase slightly in 2011, but continue to decrease again after this time.
- Annual / quarterly trend rates (2008 – 2013) have shown elective primary knee arthroplasty rates have decreased since 2008 with approximately a 57% reduction in the rate.

## ALL WALES RESULTS

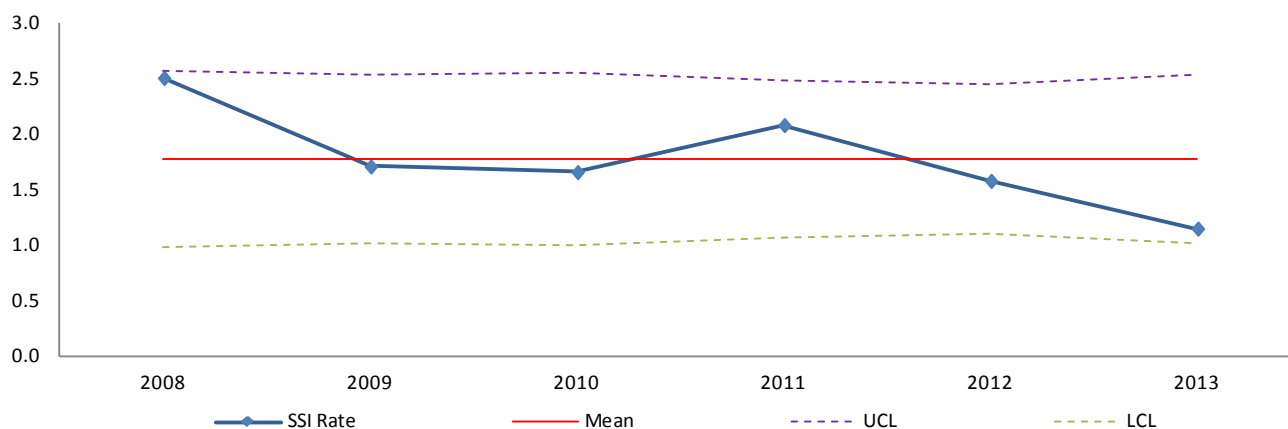
All Wales orthopaedic SSI rates for the period 01/01/2013 - 31/12/2013

Mandatory procedure	Number of forms received	Number of valid forms received	Number of inpatient SSI	Number of post-discharge SSI	Overall SSI Rate
Elective primary hip arthroplasty	2688	2675	3	28	1.2%
Elective primary knee arthroplasty	2973	2962	13	28	1.4%
<b>Total</b>	<b>5661</b>	<b>5637</b>	<b>16</b>	<b>56</b>	<b>1.3%</b>

All Wales elective primary hip arthroplasty overall quarterly SSI rates for the period 01/01/2008 - 31/12/2013



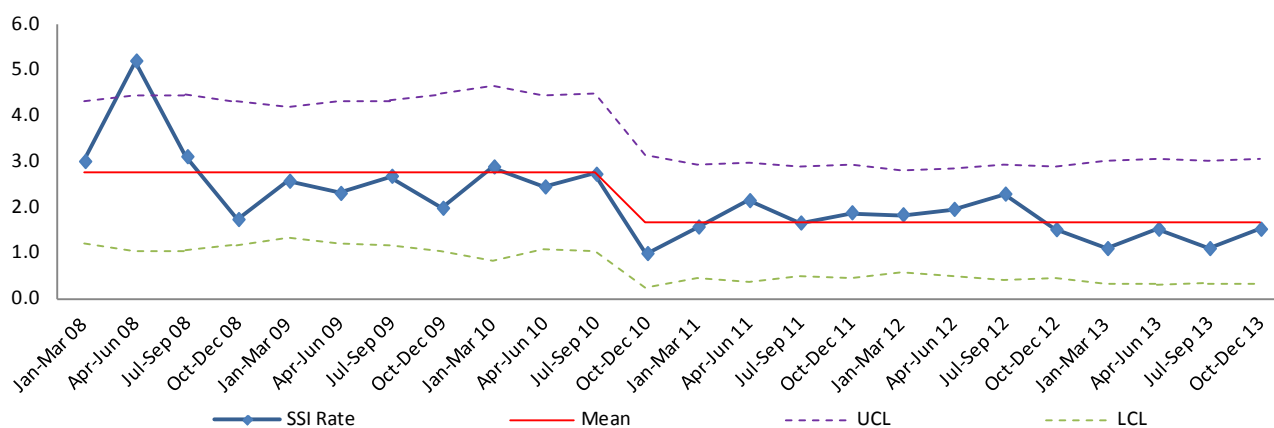
All Wales elective primary hip arthroplasty annual overall SSI numbers and rates for the period 01/01/2008 - 31/12/2013



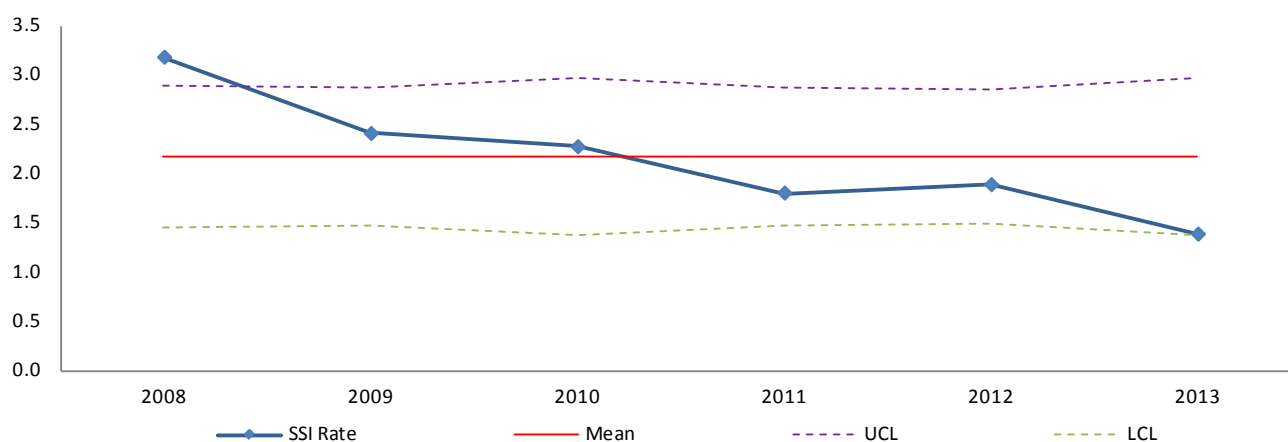
Year	Number of valid forms received	Number of overall SSI
2008	2545	64
2009	2794	48
2010	2639	44
2011	3110	65
2012	3526	56
2013	2675	31

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published

All Wales elective primary knee arthroplasty overall quarterly SSI rates for the period 01/01/2008 - 31/12/2013



All Wales elective primary knee arthroplasty annual overall SSI numbers and rates for the period 01/01/2008 - 31/12/2013



Year	Number of valid forms received	Number of overall SSI
2008	3650	116
2009	3951	95
2010	3039	69
2011	3832	69
2012	4190	79
2013	2962	41

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published

## **2. CAESAREAN SECTION SSI SURVEILLANCE**

### **ALL WALES SUMMARY**

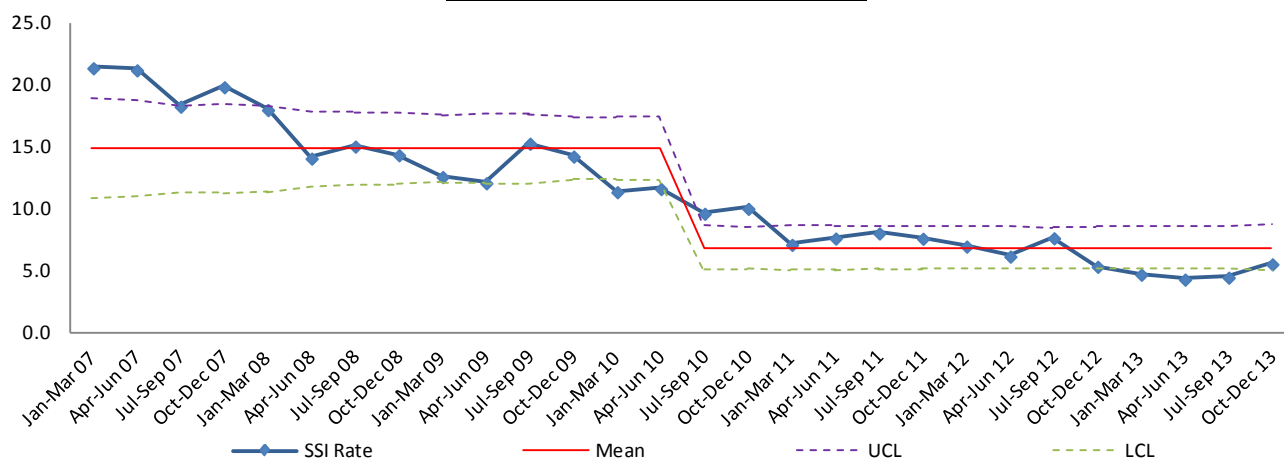
- This annual reports covers SSI associated with lower and upper uterine segment c section procedures and excludes c section hysterectomy.
- A total of 7862 questionnaires were received for 2013. 7687 (98%) of forms could be further analysed for determining the overall SSI rate for 2013.
- 27 inpatient SSI and 343 post discharge SSI were detected for 2013, giving a crude overall SSI rate of 4.8%. This is approximately a 38% decrease in the rate when compared to 2013 (6.6%).
- Annual / quarterly trend data over time has shown the SSI rate to decrease since 2007. Furthermore the overall SSI rate has decreased by 76% when comparing data for 2013 with 2007.

## ALL WALES RESULTS

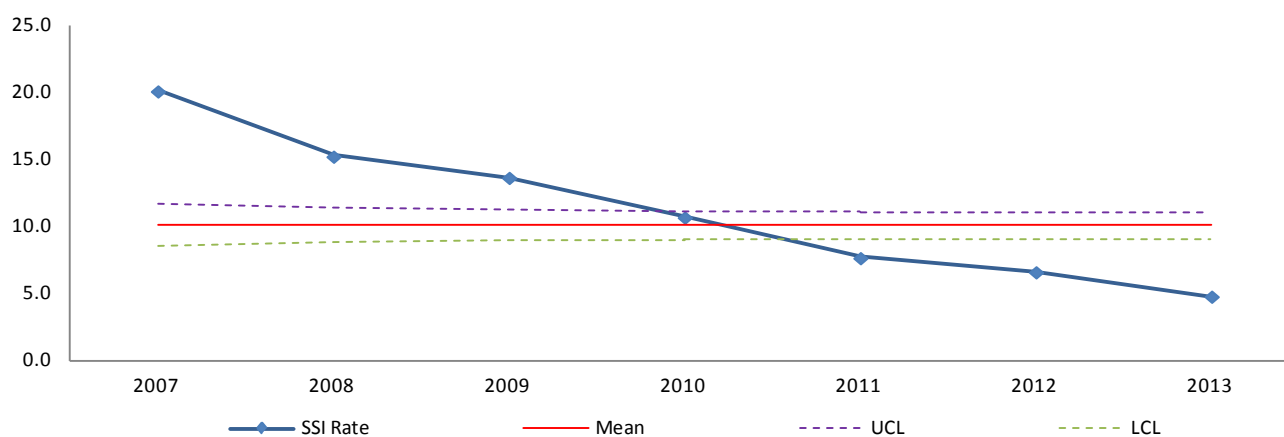
All Wales caesarean section SSI rate for the period 01/01/2013 - 31/12/2013

Number of forms received	Number of valid forms received	Number of inpatient SSI	Number of post-discharge SSI	Overall SSI Rate
<b>7862</b>	<b>7687</b>	<b>27</b>	<b>343</b>	<b>4.8%</b>

All Wales caesarean section overall quarterly SSI rates for the period 01/01/2007 - 31/12/2013



All Wales caesarean section overall annual SSI numbers and rates for the period 01/01/2007 - 31/12/2013



Year	Number of valid forms received	Number of overall SSI
<b>2007</b>	3318	668
<b>2008</b>	4855	741
<b>2009</b>	6221	851
<b>2010</b>	7344	787
<b>2011</b>	7607	585
<b>2012</b>	8081	536
<b>2013</b>	7687	370

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published

## **REFERENCES**

1. Whitehouse JD *et al.* The impact of SSI following orthopaedic surgery at a community hospital and a university hospital: Adverse quality of life, excess length of stay and extra cost. *Infection Control & Hospital Epidemiology* 2002; 23: 183-189.
2. O'Donoghue MA & Allen KD. Costs of an outbreak of wound infections in an orthopaedic ward. *Journal of Hospital Infection* 1992; 22: 73-79.
3. Plowman *et al.* The Socio-economic Burden of Hospital Acquired Infection .Public Health Laboratory Service 1999, London.
4. Horan T *et al.* CDC Definitions of Surgical Site Infections, 1992: A modification of CDC Definitions of Surgical Wound Infections. *Infection Control & Hospital Epidemiology* 1992; 13: 606-608.
5. Hospitals in Europe Link for Infection Control through Surveillance (HELICS). Available at: [www.helics.univ-lyon1.fr/home.htm](http://www.helics.univ-lyon1.fr/home.htm)



## APPENDIX I

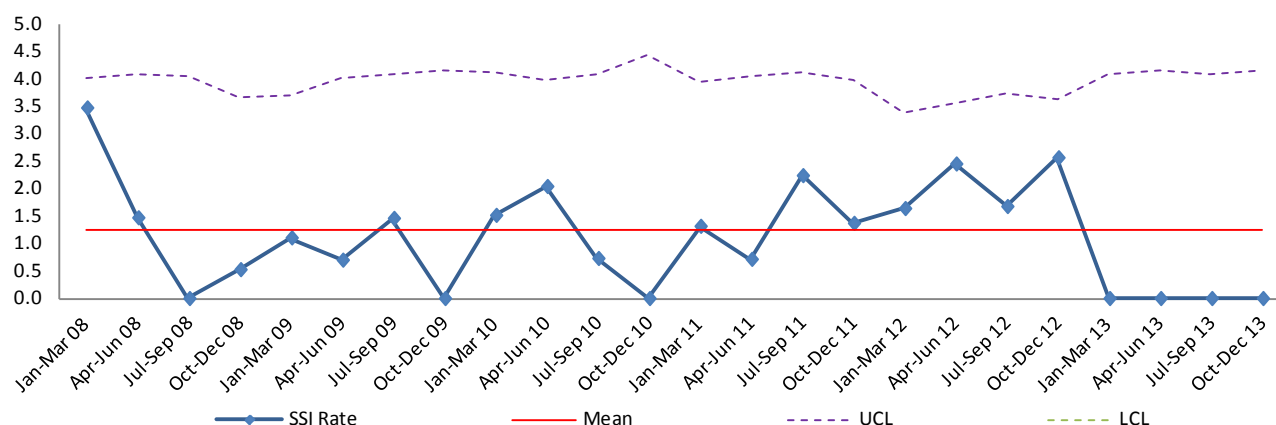
### ORTHOPAEDIC SSI SURVEILLANCE

#### Betsi Cadwaladr University Health Board

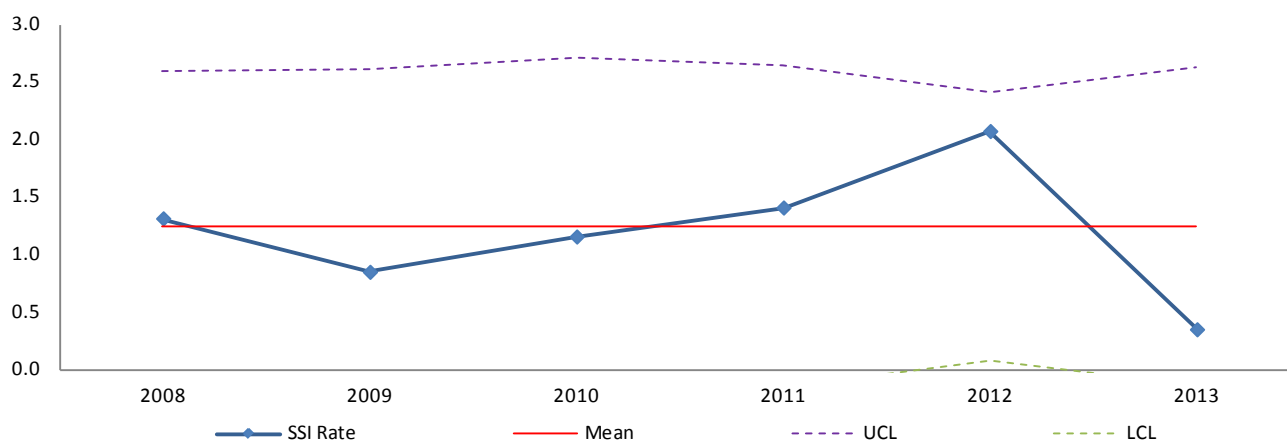
Betsi Cadwaladr University Health Board orthopaedic SSI rates for the period  
01/01/2013 - 31/12/2013

Mandatory procedure	Number of forms received	Number of valid forms received	Number of inpatient SSI	Number of post-discharge SSI	Overall SSI Rate
Elective primary hip arthroplasty	581	579	0	2	0.3%
Elective primary knee arthroplasty	613	613	3	5	1.3%
<b>Total</b>	<b>1194</b>	<b>1192</b>	<b>3</b>	<b>7</b>	<b>0.8%</b>

Betsi Cadwaladr University Health Board elective primary hip arthroplasty overall  
quarterly SSI rates for the period 01/01/2008 - 31/12/2013



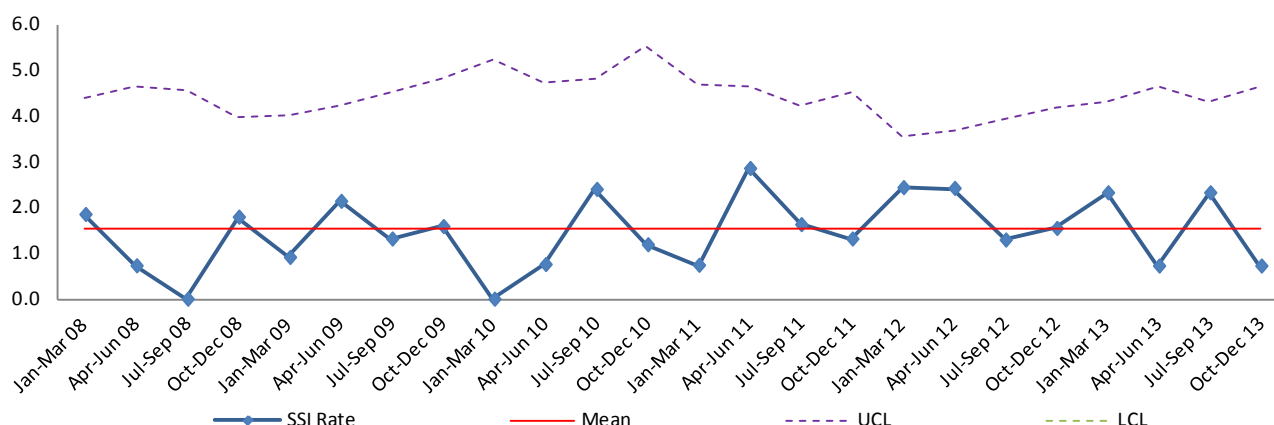
Betsi Cadwaladr University Health Board elective primary hip arthroplasty overall  
annual SSI rates and numbers for the period 01/01/2008 - 31/12/2013



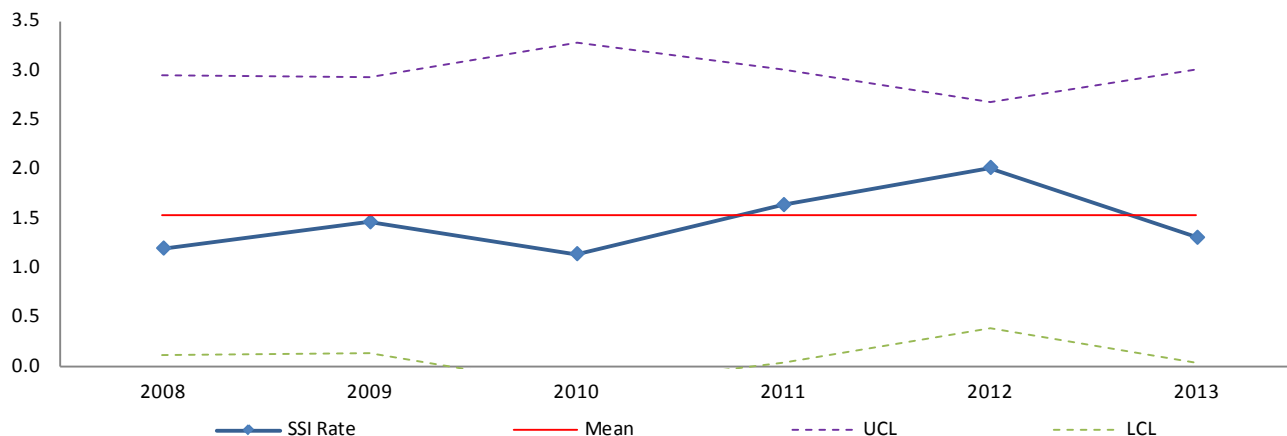
Year	Number of valid forms received	Number of overall SSI
2008	611	8
2009	592	5
2010	521	6
2011	570	8
2012	822	17
2013	579	2

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published

### Betsi Cadwaladr University Health Board elective primary knee arthroplasty overall quarterly SSI rates for the period 01/01/2008 - 31/12/2013



### Betsi Cadwaladr University Health Board elective primary knee arthroplasty overall annual SSI rates and numbers for the period 01/01/2008 - 31/12/2013



Year	Number of valid forms received	Number of overall SSI
2008	669	8
2009	684	10
2010	439	5
2011	611	10
2012	1043	21
2013	613	8

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published

## APPENDIX II

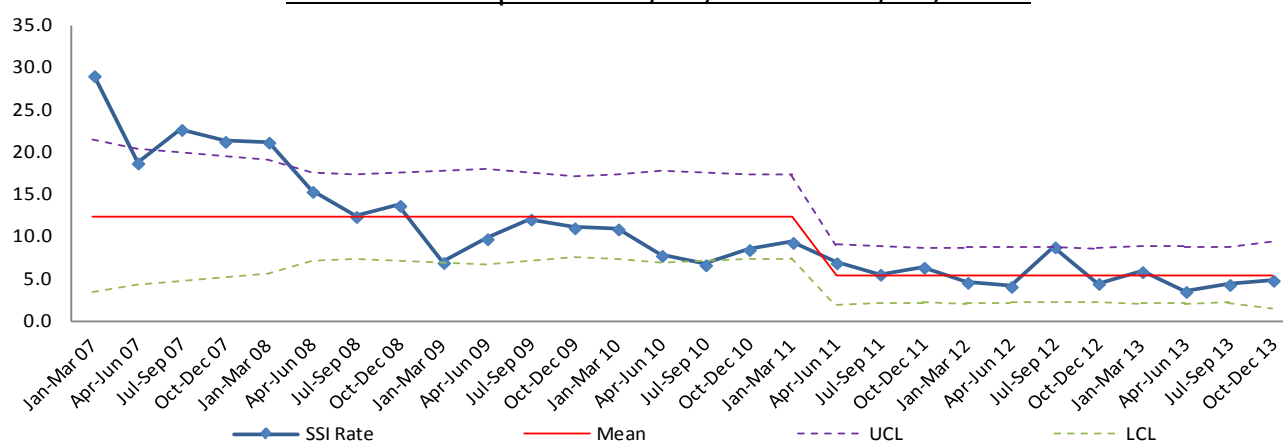
### CAESAREAN SECTION SSI SURVEILLANCE

#### Betsi Cadwaladr University Health Board

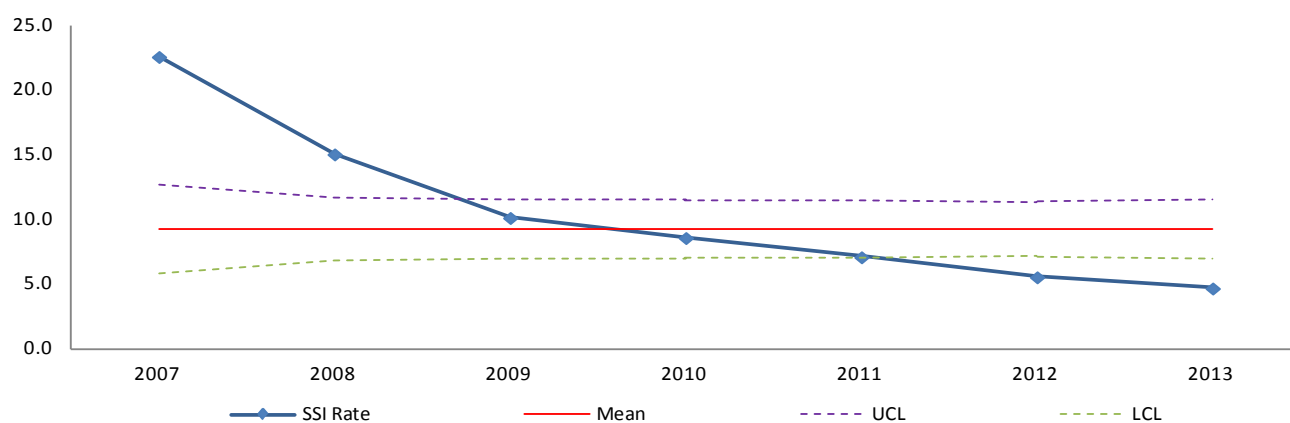
Betsi Cadwaladr University Health Board caesarean section SSI rates for the period 01/01/2013 - 31/12/2013

Number of forms received	Number of valid forms received	Number of inpatient SSI	Number of post-discharge SSI	Overall SSI Rate
1535	1526	4	68	4.7%

Betsi Cadwaladr University Health Board caesarean section overall quarterly SSI rates for the period 01/01/2007 - 31/12/2013



Betsi Cadwaladr University Health Board caesarean section overall annual SSI rates and numbers for the period 01/01/2007 - 31/12/2013



Year	Number of valid forms received	Number of overall SSI
2007	632	143
2008	1332	201
2009	1435	146
2010	1473	127
2011	1612	115
2012	1737	97
2013	1526	72

N.B. These numbers may differ from the previously published annual reports if more forms have been received after the annual report for that time period was published