

**NHS Board Meeting  
15<sup>th</sup> December 2009**

**Medical Director**



**Board Paper No. 09/67**

## **Healthcare Associated Infection – Monitoring Report**

### **Recommendation:**

The NHS Board is asked to note the latest 2 monthly report on HAI within NHSGGC

### **INTRODUCTION**

The attached HAI report is the latest of the regular two monthly reports to NHS Board as required by the National HAI Task Force Action Plan. The report presents data on the performance of NHSGGC on a range of key HAI indicators at National and individual hospital site level.

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## NHS Greater Glasgow & Clyde HAI MONITORING REPORT DECEMBER 2009

This is the sixth bimonthly HAI Monitoring Reports for submission to the NHS Board as required by the National HAI Action Plan.

The Report outlines the Board's position and performance in relation to:

- *S. aureus* bacteraemias (HEAT Target)
- *C. difficile*
- Surgical Site Infections
- Hand hygiene compliance
- Monitoring of cleaning services

The data are presented at both national and hospital level.

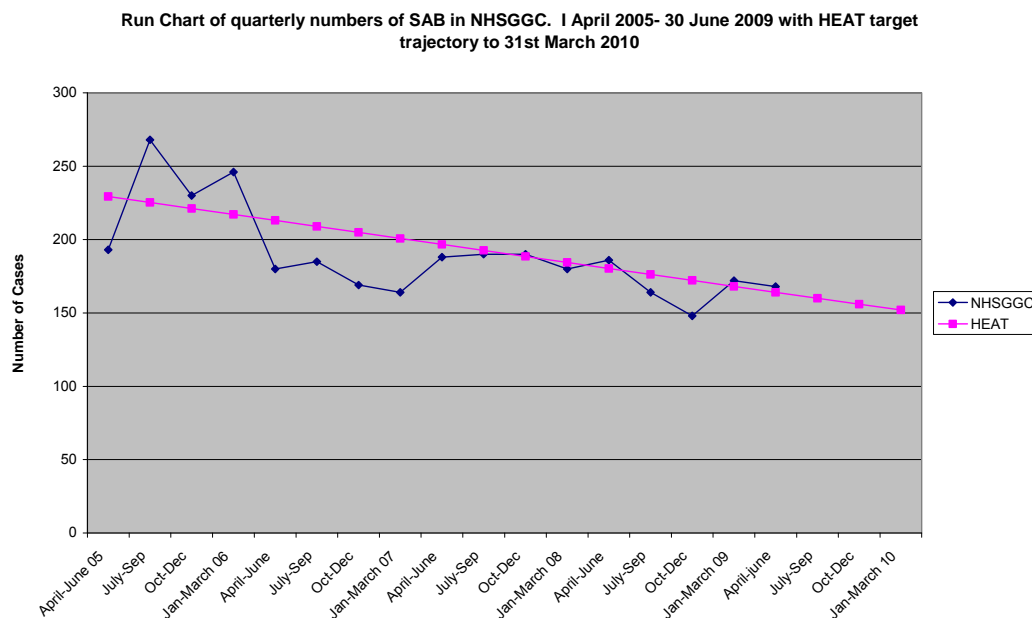
In summary:

- If Current trends are maintained NHSGGC will achieve the target of a 35% reduction in *S. aureus* bacteraemia by 2010.
- The National Report published in September 2009 (April- June 09) indicates that the rate of *C. difficile* Infection in NHSGGC in the over 65s is 0.43 per 1000 acute occupied bed days. This places NHSGGC well below the 2011 target of 0.9 per 1000 acute occupied bed days.
- The SSI rates in NHSGGC, for the last available quarter, remain below the national average for all procedures apart from hip arthroplasty.
- NHSGGC has demonstrated a steady rise in Hand Hygiene compliance during the national audit periods from a 62% baseline in February 2007 to achieve the 90% target in September 2008, and a current figure of 93%.
- All areas within NHSGGC scored **green (>90%)** in the most recent report on the National Cleaning Specification.

Dr Brian Cowan  
Medical Director, NHSGGC

## Heat Target 1 – To reduce MRSA / MSSA bacteraemias by 35% by 2010

*S. aureus* is a type of bacteria that is present in the nose of up to 30% of the healthy population. Although normally harmless, *S. aureus* can be a major cause of serious infection such as bacteraemia when the bacteria invade the bloodstream. Both meticillin sensitive and meticillin resistant *S. aureus* (MSSA and MRSA) are present in UK hospitals. NHSGGC have been challenged with reducing this type of infection by 35% by 2010. NHSGGC is on target to achieve this reduction and the chart below demonstrates our progress against the target.



### Key Messages

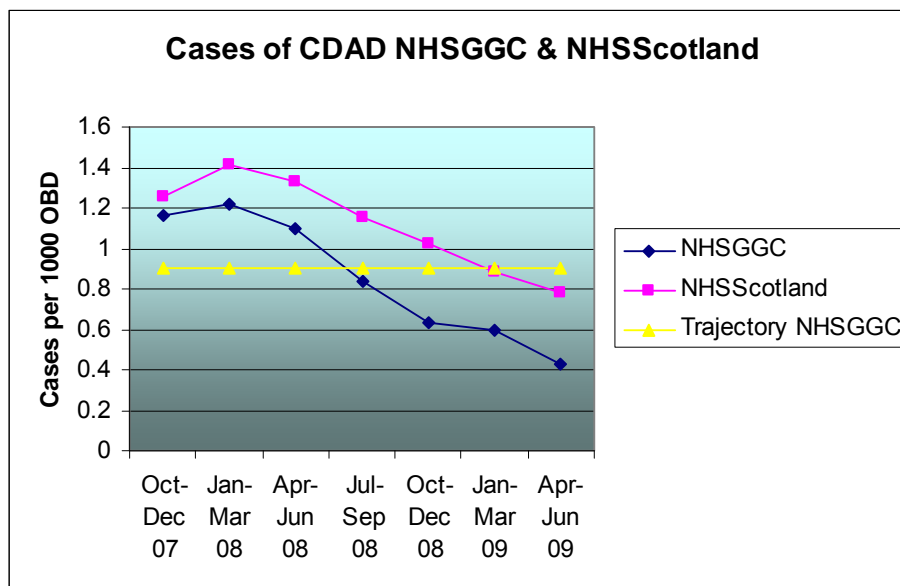
- If Current trends are maintained NHSGGC is on target to achieve the 35% reduction in *S. aureus* bacteraemia by 2010. This replicates the national trend for NHS Scotland.
- All Statistical Process Control Charts for MRSA (all types of MRSA not only blood stream infections) at hospital level are within control limits. (Appendix 1)

## Cases of *C. diff* in NHSGGC & NHS Scotland per 1000 Occupied Bed Days

*Clostridium difficile* (*C. diff*) are bacteria that can cause an infection in the bowel which may result in diarrhoea. *C. diff* is present in the large intestine of a small proportion of health adults. Occasionally *C. diff* can develop into a more serious condition called pseudomembranous colitis.

*C. diff* mainly causes infection amongst hospital patients, especially the elderly who have received antibiotic therapy. The HEAT target in relation to the reduction in CDAD (CEL 11 (2009)) was issued in April 2009. This target requires NHS Boards to reduce their incidence of *C. diff* by at least 30% by 2011 against a 2006/2007 baseline.

### NHSGGC per 1000 occupied bed days for 2007/09 compared to NHSScotland (over 65s).

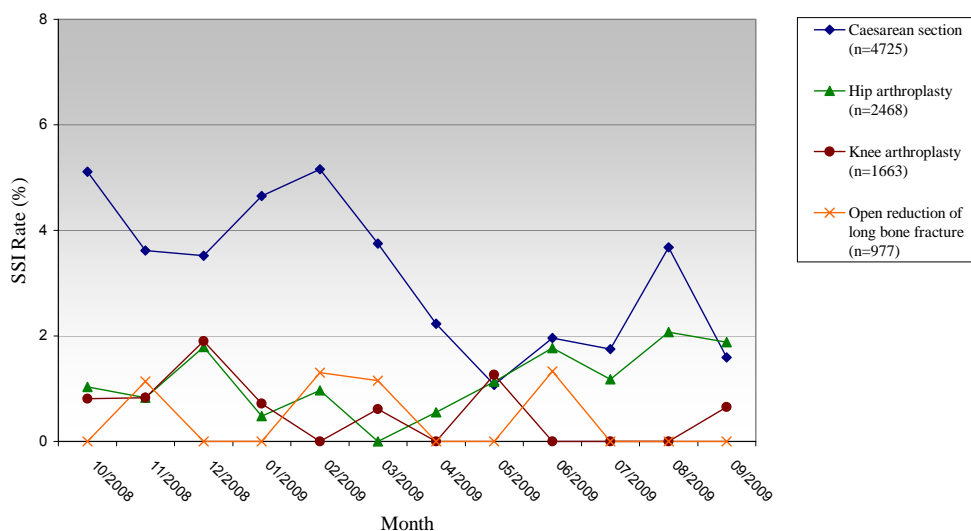


### Key Messages

- The National Report published September 2009 shows a further reduction in the rate of *C. difficile* within NHSGGC and clearly places the Board below the national mean (0.80 OBD over 65s) and also below the 0.9 per 1000 OBD HEAT target for 2011. The rate for the most recent quarter reported (April- June 09) is 0.43 per 1000 OBDs.
- NHSGGC had decreasing rates of *C. diff* infection during the last five quarters of national reporting.
- All Statistical Process Control Charts for CDAD at hospital site level are within control limits. (Appendix 1)

## Surgical Site Infection Rates as per HDL (2006)38

SSI rate by Month by each procedure between 01 October 2008 and 30 September 2009 in NHS Greater Glasgow & Clyde



- All SSI rates remain within acceptable levels.
- A revision to the Caesarean section post discharge surveillance methodology has been introduced from 1<sup>st</sup> April 2009. CEL 2009(11) has noted the operational difficulties in maintaining patient discharge surveillance to day 30 and has subsequently reduced this period to day 10

SSI rate by Month each procedure between 01 October 2008 and 30 September 2009 in NHS GGC

Month	Caesarean section (n=4725)	Hip arthroplasty (n=2468)	Knee arthroplasty (n=1663)	Open reduction of long bone fracture (n=977)
10/2008	5.11	1.03	0.81	0.00
11/2008	3.62	0.83	0.83	1.14
12/2008	3.52	1.79	1.90	0.00
1/2009	4.65	0.48	0.72	0.00
2/2009	5.16	0.97	0.00	1.30
3/2009	3.75	0.00	0.61	1.15
4/2009	2.23	0.55	0.00	0.00
5/2009	1.07	1.13	1.26	0.00
6/2009	1.96	1.77	0.00	1.33
7/2009	1.75	1.18	0.00	0.00
8/2009	3.68	2.07	0.00	0.00
9/2009	1.59	1.88	0.65	0.00

## Key Message

- For the last available quarter the SSI rates in NHSGGC remain below the national average for all procedures apart from hip arthroplasty.

### NHSGGC compared to NHS Scotland 01 July 2009 to 30 September 2009

Category of procedure	Operations	Infections	SSI rate (%)	National dataset SSI rate (%)
Caesarean section	1277	30	2.35	3.23
Hip arthroplasty	576	10	1.74	1.28
Knee arthroplasty	431	1	0.23	0.64
Open reduction of long bone fracture	221	0	0.00	0.00

## Hand Hygiene

As per CEL 5 (2009) NHSGGC has adopted a 'zero tolerance' approach to non-compliance with Hand Hygiene. This has been introduced in line with new Disciplinary Policy and Procedures (Employee Code of Conduct).

	4 <sup>th</sup> Quarter National Audit Period 14-27 January 2009	1st Bi-Monthly Audit Report 9-20 March 2009	2nd Bi-Monthly Audit Report 11-22 May 2009	3rd Bi-Monthly Audit Report 20-31 July 2009	4 <sup>th</sup> Bi-Monthly Audit Report 21 Sept-2 Oct 2009
National overall compliance	93%	92%	93%	93%	92%
NHSGGC overall compliance	92%	88%	93%	93%	93%
National Nurse	95%	92%	94%	94%	94%
NHSGGC Nurse	96%	85%	93%	94%	95%
National Medic	85%	86%	86%	87%	88%
NHSGGC Medic	73%	80%	85%	88%	82%
National Ancillary/ others	91%	93%	93%	94%	91%
NHSGGC Ancillary/ others	93%	93%	94%	95%	94%
National AHP	94%	96%	95%	95%	90%
NHSGGC AHP	95%	100%	100%	93%	93%

## Key Messages

The latest report on National Hand Hygiene Compliance indicates that NHSGGC has maintained a score of 93% compliance.

Training in Hand Hygiene is mandatory on induction and it is recommended that an annual refresher is added to individual staff PDPs.

This can be carried out online utilising the NHSGGC Training Tracker system or by accessing the site based sessions organised by the Infection Control teams.

Hand Hygiene remains the most important factor in preventing healthcare associated infections (HAIs) and must be carried out appropriately.

Local audits continue across all acute sites and these are helping to maintain the compliance score across the Board. Training in the use of the audit tool has been well received with encouraging feedback and staff enthusiasm.

## National Cleaning Services Monitoring

As part of its work programme, the HAI Taskforce developed the 'NHS Scotland Code of Practice for the Local Management of Hygiene and HAI', and the 'NHS Scotland National Cleaning Services Specification'. These documents include guidance on cleanliness and hygiene, effectively setting minimum standards for the healthcare environment. They were issued to NHS Boards in May 2004. In addition, the HAI Taskforce commissioned Health Facilities Scotland (HFS) to develop a monitoring framework for the NHS Scotland National Cleaning Services Specification. This was developed in consultation with a range of stakeholders within NHS Scotland and was implemented in April 2006. The first quarterly report was published in August 2006.

Monitoring in this context is defined as the ongoing assessment of the outcome of cleaning processes to assess the extent to which cleaning procedures are being carried out correctly, to identify any remedial actions which are required and to provide an audit trail. An essential component of any monitoring framework is the fundamental principle of continuous improvement. Therefore the monitoring framework not only provides a reporting mechanism, but a rectification process that can be used locally to identify, prioritise and address issues of non-compliance.

Compliance is assessed within NHS Boards using a standardised monitoring template. There are two components to the monitoring:

- Audits carried out on a routine basis by domestic services managers;
- Audits carried out by peer review teams, incorporating a public involvement element.

Cleanliness is assessed using an observational process and according to the technical requirements set out in the NHS Scotland National Cleaning Services Specification. NHS Boards report their results to HFS on a monthly basis. From the data received the monitoring tool produces a score for all Boards and all A1 and A2 hospitals. This data is subsequently used by HFS to compile the quarterly report and fed back to Boards.

The scoring methodology is based on Red; Amber and Green (RAGs) scoring process as follows:

- $\geq 90\%$  equates to a green score
- $> 70\%$  but  $< 90\%$  equates to an amber score
- $< 70\%$  equates to a red score

All cleaning rectifications are required to be made within the specified time scales. Additionally, if an area scores amber or red, a RAGs form is completed giving details of why the area failed and how this will be rectified. A red area is re-monitored within 7 days and another score sheet completed. The amber area is re-monitored within 21 days and a further score sheet is completed. In both cases an action plan is produced to enable the rectification to be corrected.

**NHS GREATER GLASGOW AND CLYDE  
NATIONAL MONITORING FRAMEWORK  
PERFORMANCE  
PERCENTAGE SCORES FOR 2009/10**

Hospital / Unit	Sector	July 09 %	Aug 09 %	Sept 09 %	Average 2nd Quarter
Vale of Leven/Lomond/Dumbarton/Helensburgh	Clyde	97.5	97.6	97.4	97.5
Inverclyde Non Acute	Clyde	97.5	98.4	98.1	98.0
Inverclyde Royal	Clyde	98.4	98.6	98.3	98.4
Dykebar/Johnstone/Merchiston	Clyde	96.4	96.6	96.4	96.5
Royal Alexandra Hospital	Clyde	96.9	97.0	96.5	96.8
Dental Hospital/Dalian	West	96.5	96.4	97.8	96.9
Blawarthill/Drumchapel	West	96.4	95.8	95.8	96.0
Glasgow Royal Infirmary	North East	95.4	95.3	95.6	95.4
Stobhill Hospital	North East	96.7	96.0	96.0	96.2
Stobhill ACAD Unit	North East	97.5	97.2	97.2	97.3
Mearnskirk Hospital	South	97.1	97.5	97.3	97.3
Langlands Unit	South	94.4	96.3	97.7	96.1
Mansion House Unit	South	97.2	96.7	95.8	96.6
Victoria Infirmary	South	96.1	96.2	96.3	96.2
Southern General Hospital	South	96.1	96.3	95.9	96.1
Yorkhill Hospitals	West	96.6	96.9	96.5	96.7
Western Infirmary	West	96.9	96.8	97.2	97.0
Gartnavel General Hospital	West	95.5	95.2	95.6	95.4
Lightburn Hospital	North East	96.1	95.7	95.5	95.8
PCD East	PCD	95.4	97.0	96.7	96.4
PCD North	PCD	96.6	95.7	96.3	96.2
PCD South	PCD	95.5	95.5	96.4	95.8
PCD West	PCD	96.3	96.0	96.1	96.1
Overall NHS Greater Glasgow and Clyde		96.5	96.6	96.6	96.6

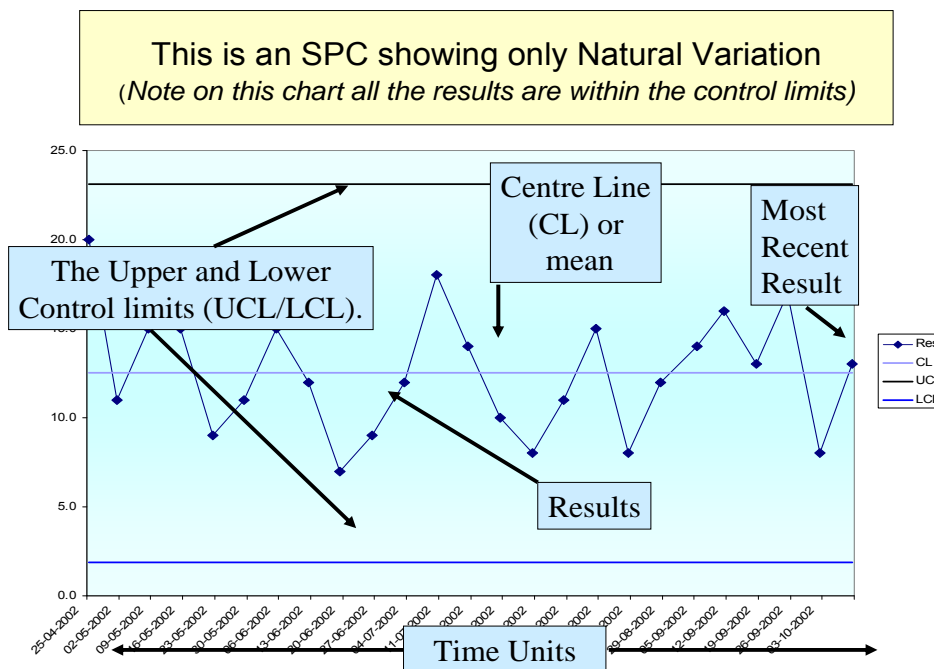
## Statistical Process Chart (SPC)

## Appendix 1

Surveillance data can be used to detect any change in the incidence of disease, which in turn facilitates the early identification outbreaks of infection and leads to prompt initiation of preventive measures. It also allows local infection control teams to focus their interventions in areas where the greatest benefit to patients can be achieved.

Statistical Process Control Charts (SPCs) are the application of statistical theory to Quality Control. They show process data chronologically (per month in most cases). Some examples of where they have been used in healthcare include; queuing analysis of appointment access and delays and forecasting bed needs.

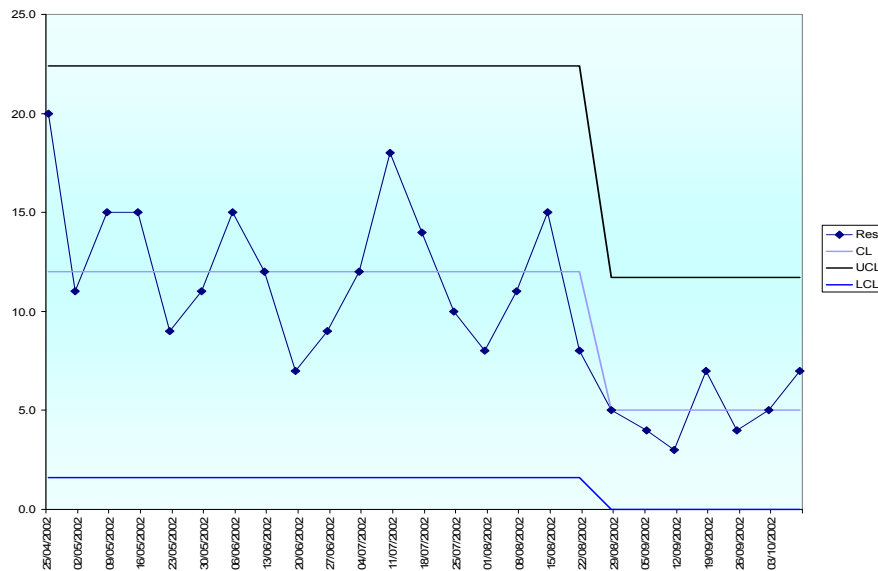
The most common use for SPCs in infection control practice is in relation to healthcare acquired MRSA and *C. difficile* infections. Calculations are made based upon the ward/unit's historical infection rate to produce 3 lines, the upper and lower control limits and the centre line (mean). The setting of the upper control limits allows the local teams to 'trigger' actions promptly in response to any increase in the number of patients identified.



## Quality Improvement

Although SPCs are a method of viewing what is going on at a local level the SPC can also be used to drive improvements in care. This is shown by reducing the mean (centre line) which indicates that fewer patients are acquiring infection in our wards and hospitals.

This chart demonstrates that infection control practice on a ward has improved. This in turn has resulted in fewer cases and the mean for this ward has been reduced to reflect this. Now that SPC's are available across the whole of NHSGGC we will be actively targeting improvements in areas with historically high levels of infection and sustaining improvements in areas with low infection rates.



## Trigger Events/Charts that Breach the Upper Control Limits

An SPC will only identify that a problem exists – it will not identify what is causing the problem. If a chart is seen to be above the upper control limit the ICT with the local clinical team will review the area to determine the likely cause and develop appropriate action plans.

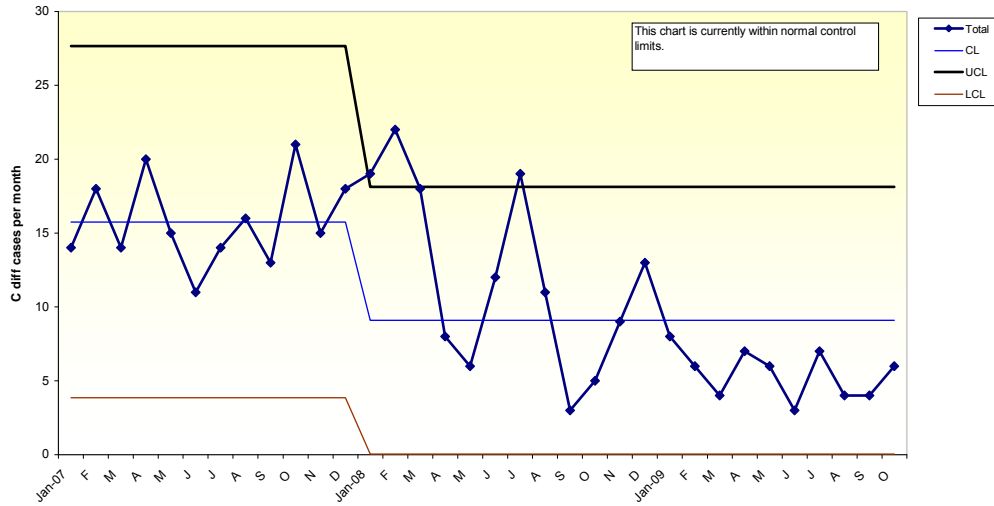
## Directorate Trajectories

SPCs are at their most effective when used to reflect what is going on in individual wards/departments. However the data will be used to develop trajectories for the directorates within NHSGGC in relation to C. diff and MRSA.

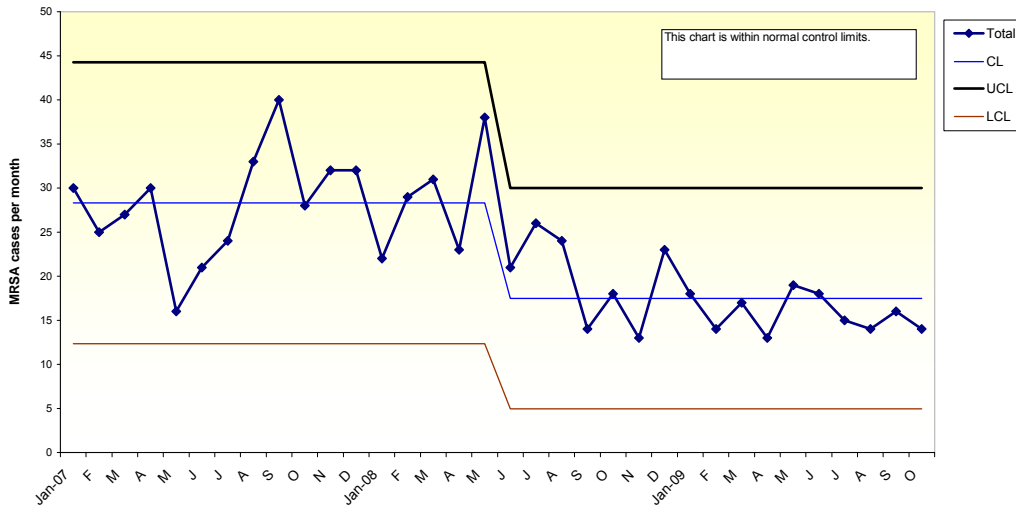
# NUMBER NEW CASES (HAI) PER HOSPITAL SITE 2007-2009

## GLASGOW ROYAL INFIRMARY

Hospital Acquired  
C. difficile in GRI 2007 - 2009



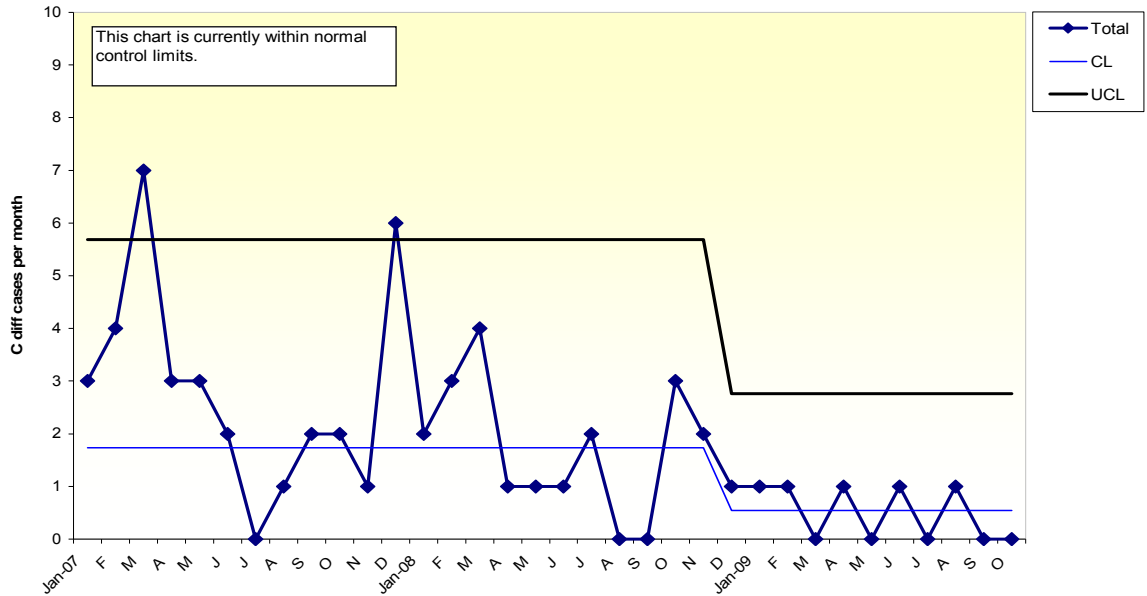
Hospital Acquired  
MRSA per month GRI 2007 - 2009



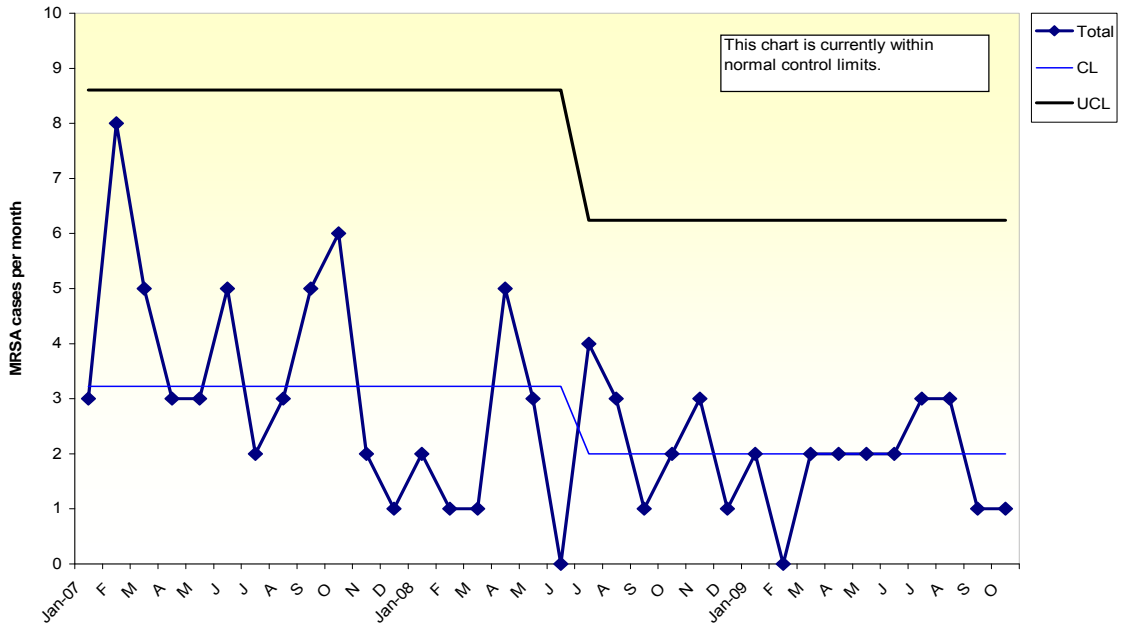
Both charts were within control limits in October 2009.

# LIGHTBURN HOSPITAL

Hospital Acquired  
Clostridium difficile Lightburn Hospital 2007-2009



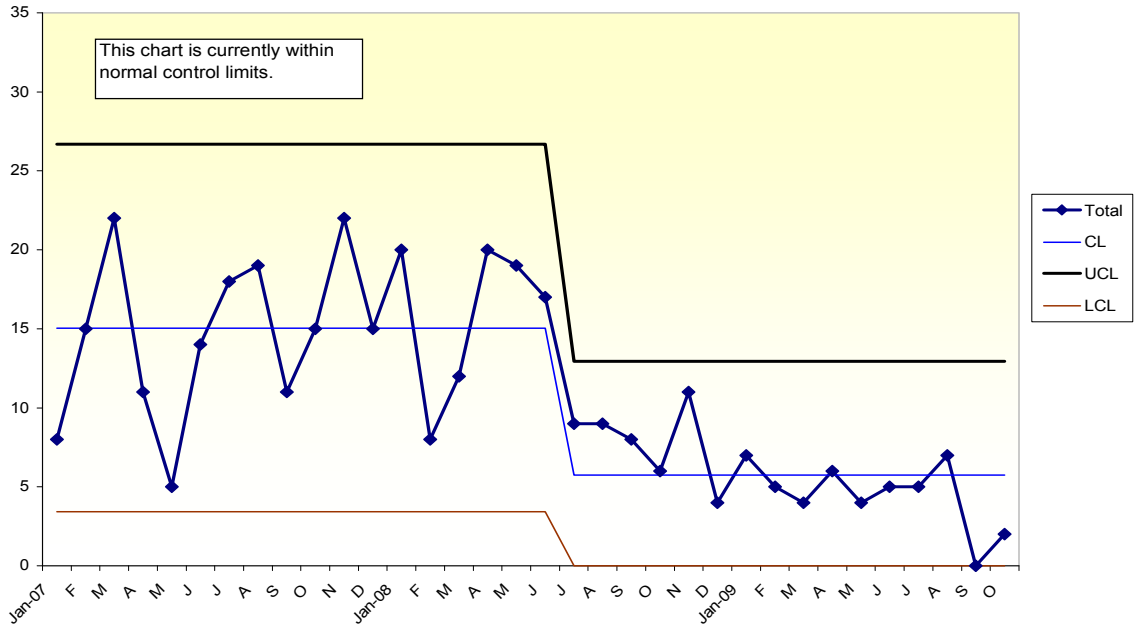
Hospital Acquired -  
MRSA Lightburn Hospital 2007-2009



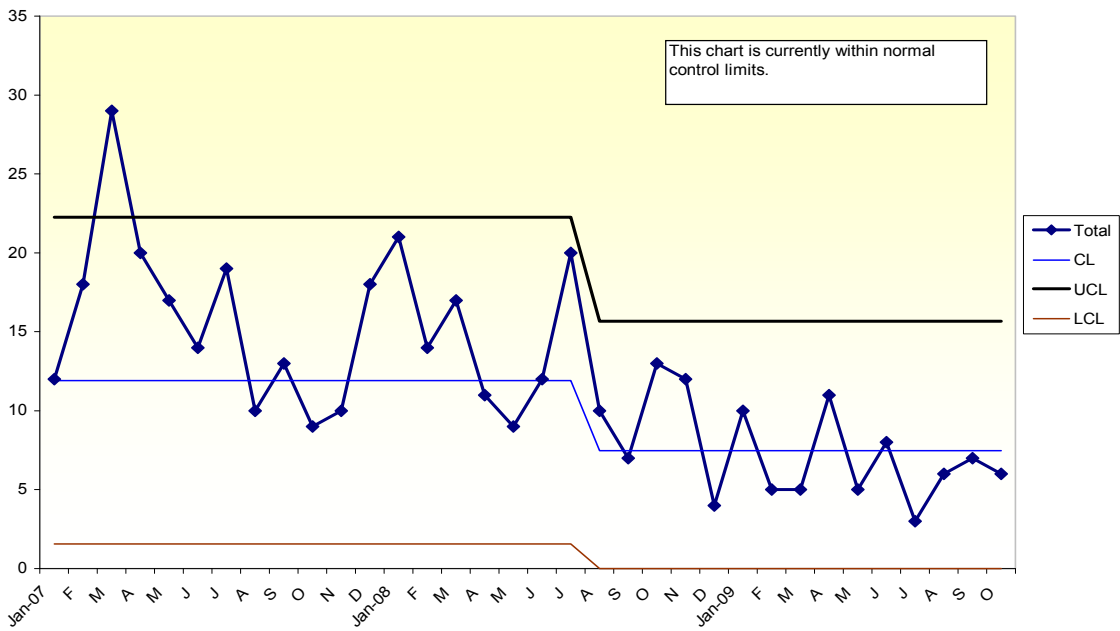
Both charts were within control limits in October 2009.

# STOBHILL HOSPITAL

Hospital Acquired -  
C.difficile in Stobhill 2007-2009



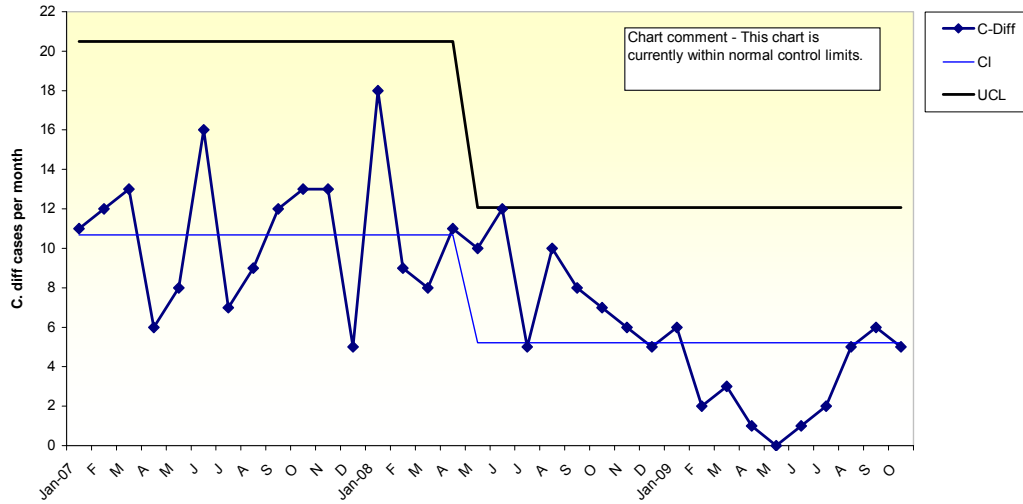
Hospital Acquired  
MRSA in Stobhill 2007-2009



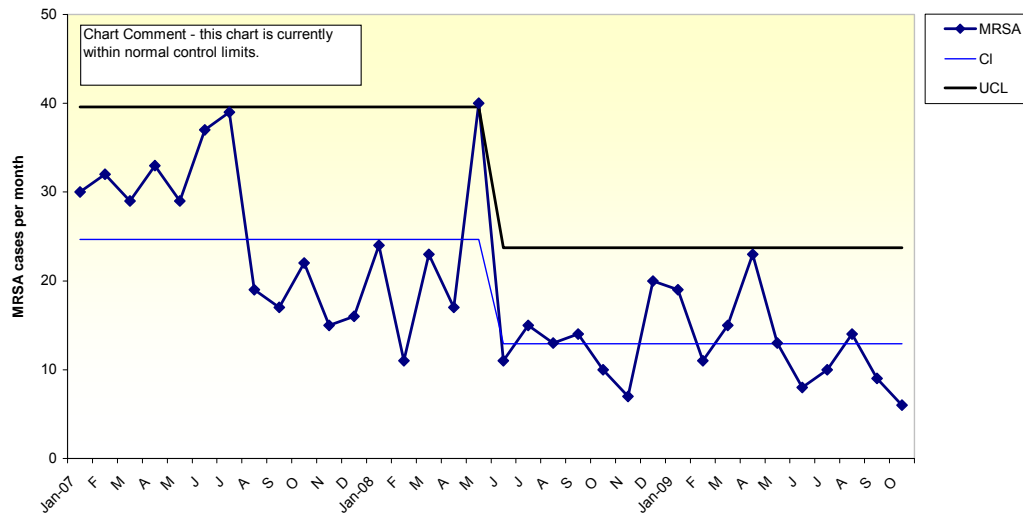
Both charts were within control limits in October 2009.

# ROYAL ALEXANDRA HOSPITAL

Hospital Acquired -  
C-Diff, 2007 - 2009, RAH



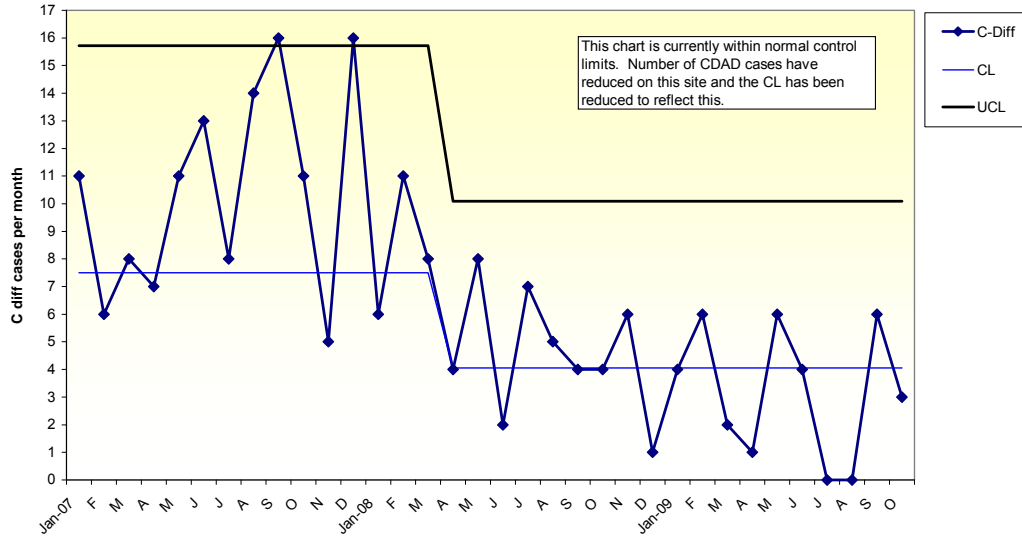
Hospital Acquired -  
MRSA, 2007 - 2009, RAH



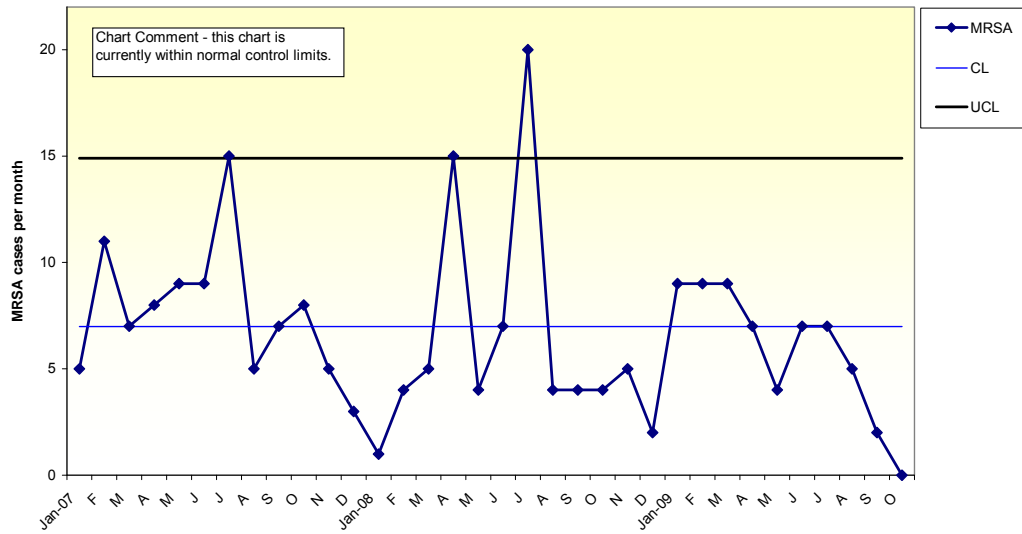
Both charts were within control limits in October 2009.

# INVERCLYDE HOSPITAL

Hospital Acquired -  
C. diff 2007 - 2009, IRH



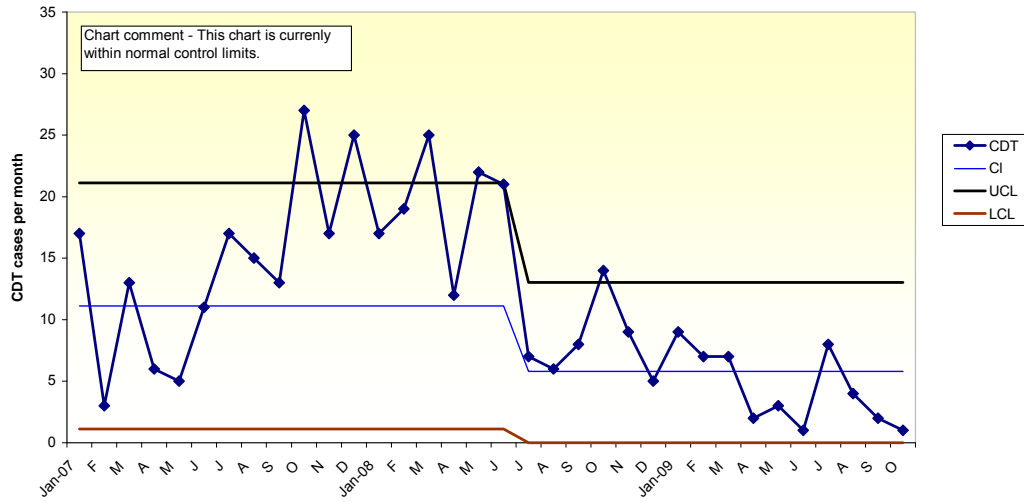
Hospital Acquired -  
MRSA 2007 - 2009, IRH



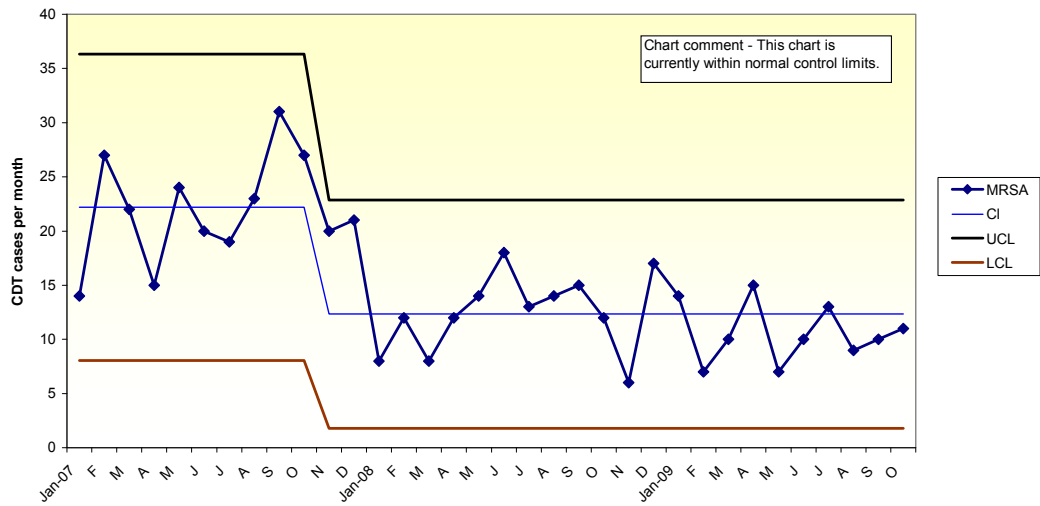
Both charts were within control limits in October 2009.

# VICTORIA INFIRMARY

Hospital Acquired -  
**C. difficile Victoria Infirmary - All Directorates 2007-2009**



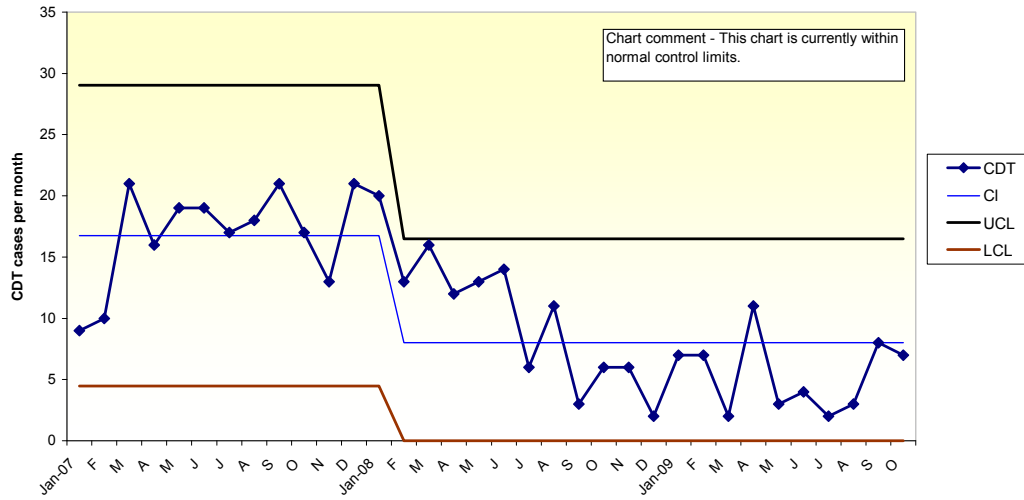
Hospital Acquired -  
**MRSA Victoria Infirmary - All Directorates Total 2007-2009**



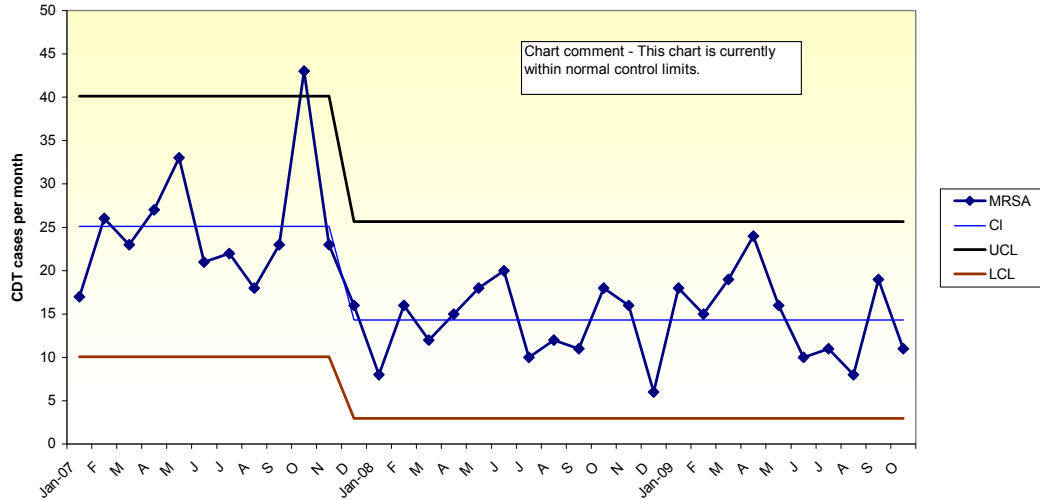
Both charts were within control limits in October 2009.

# SOUTHERN GENERAL

Hospital Acquired -  
C. difficile Southern General Hospital - All Directorates 2007-2009



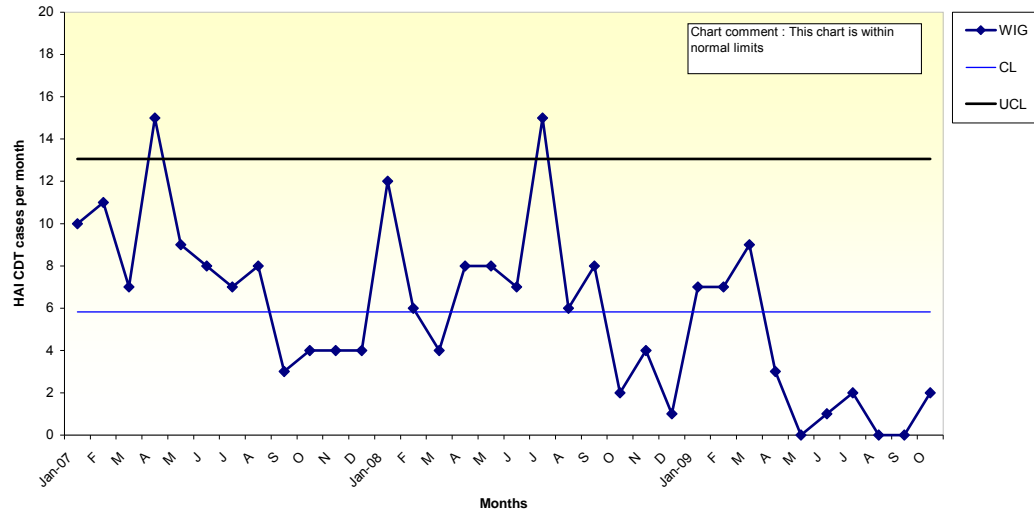
Hospital Acquired -  
MRSA Southern General Hospital - All Directorates Total 2007-2009



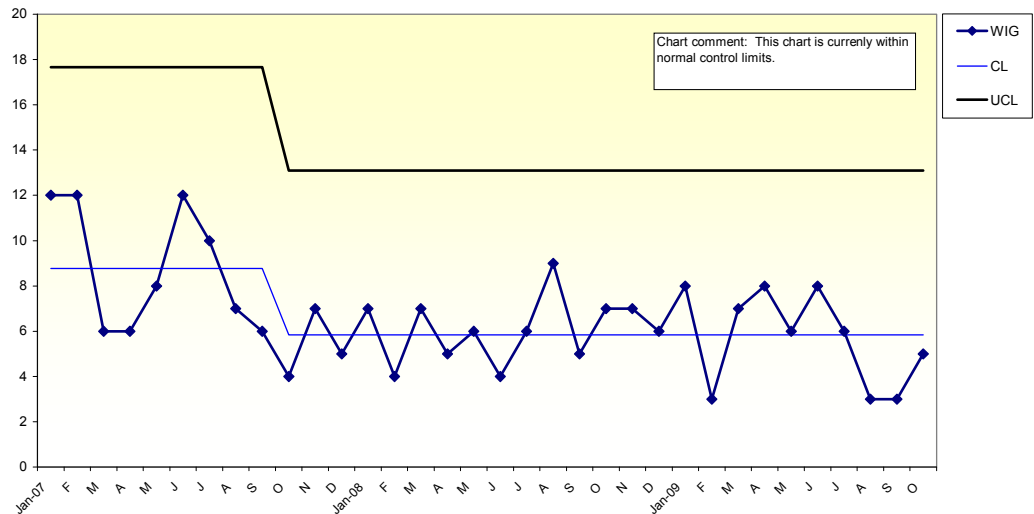
Both charts were within control limits in October 2009.

# WESTERN INFIRMARY

Hospital Acquired C.diff - WIG Total 2007 - 2009



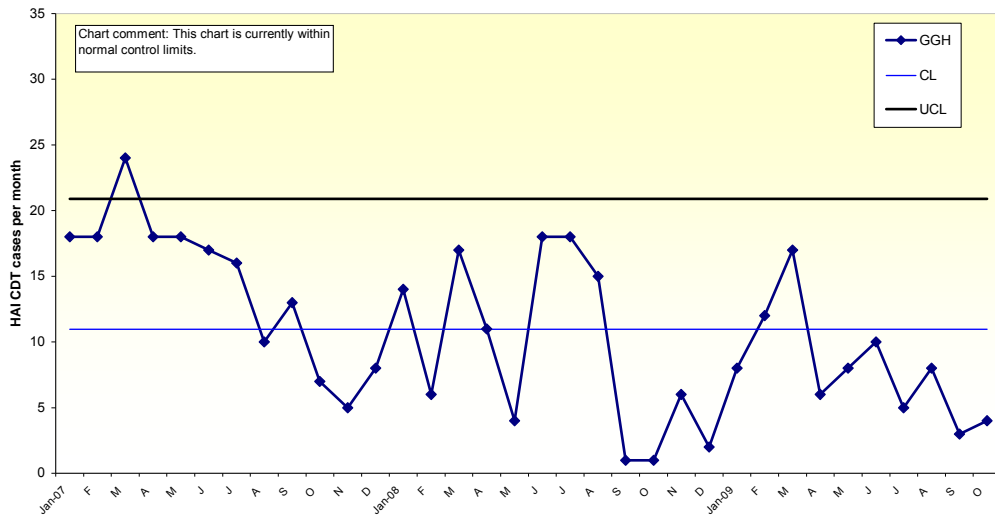
Hospital Acquired MRSA's - WIG Total 2007 - 2009



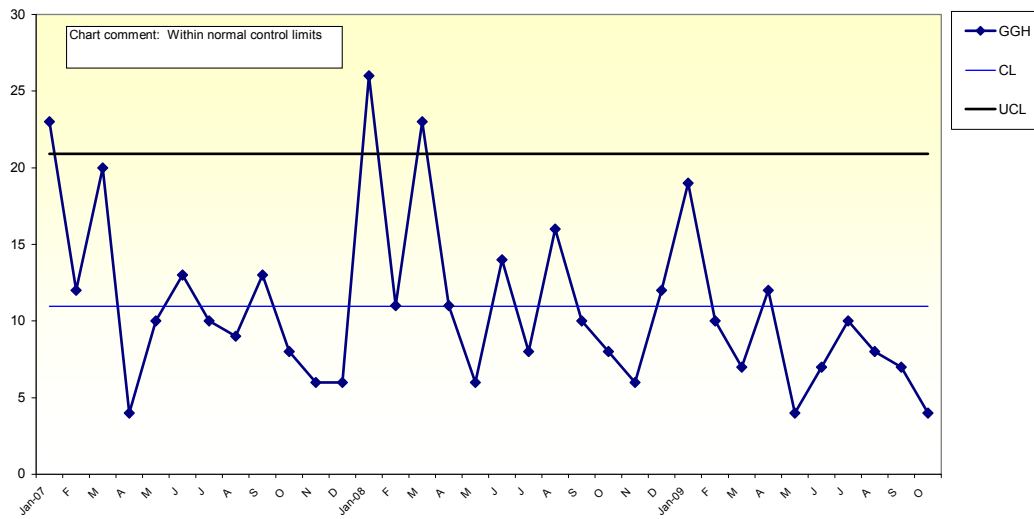
Both charts were within control limits in October 2009.

# GARTNAVEL GENERAL HOSPITAL

Hospital Acquired Cdiff - GGH Total 2007 - 2009



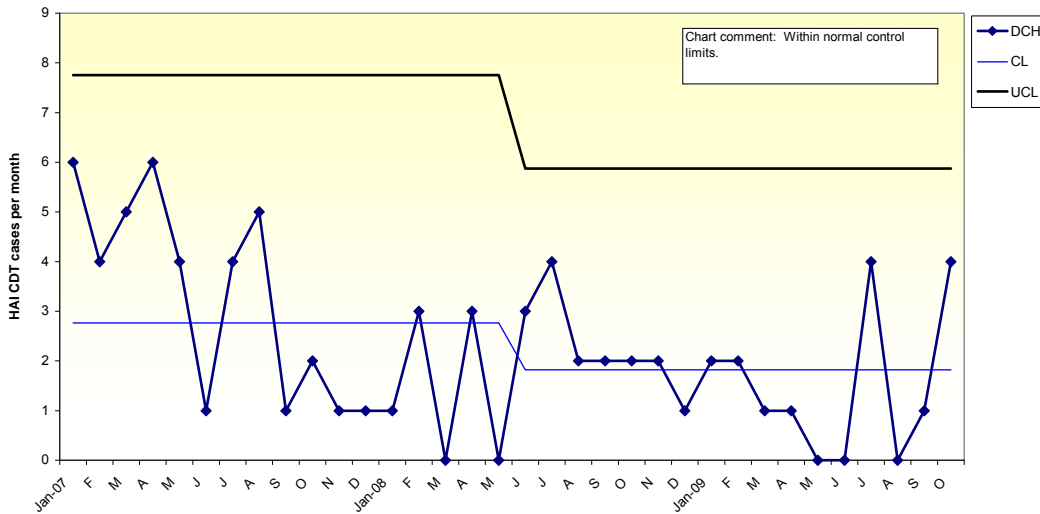
Hospital Acquired MRSA's - GGH Total 2007 - 2009



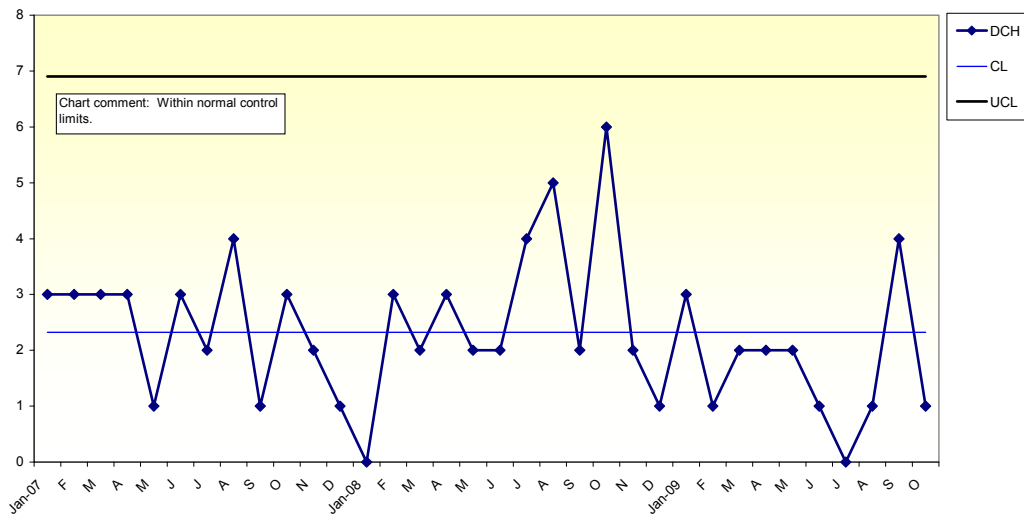
Both charts were within control limits in October 2009.

# DRUMCHAPEL HOSPITAL

Hospital Acquired C.diff's - DCH Total 2007 - 2009



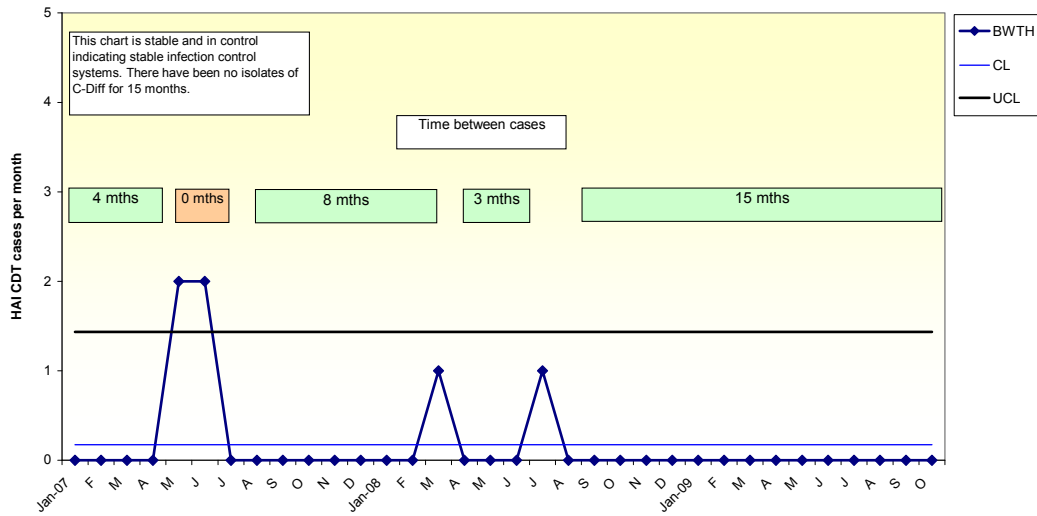
Hospital Acquired MRSA's - DCH Total 2007 - 2009



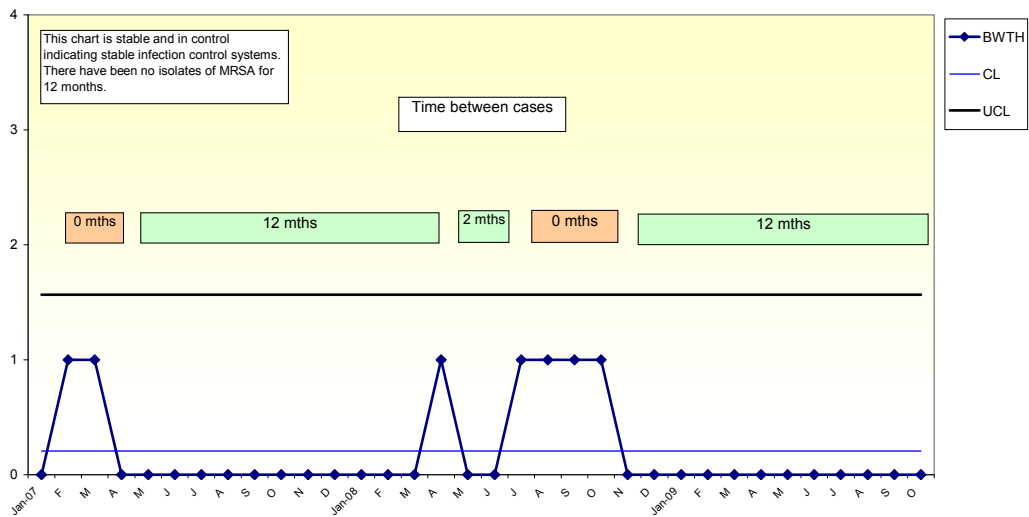
Both charts were within control limits in October 2009.

# BLAWARTHILL HOSPITAL

Hospital Acquired C.diff's BWTH Total 2007 - 2009



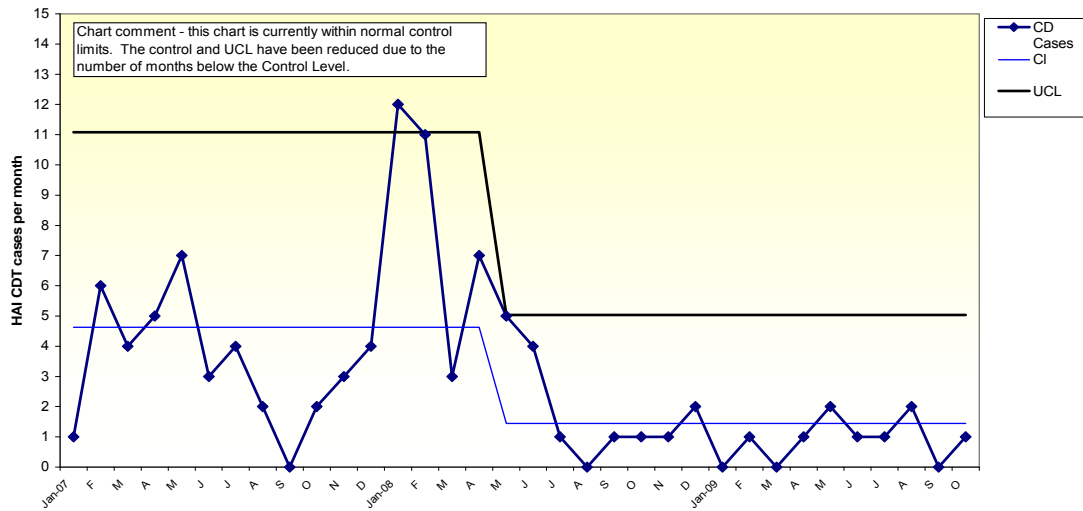
Hospital Acquired MRSA's BWTH Total 2007 - 2009



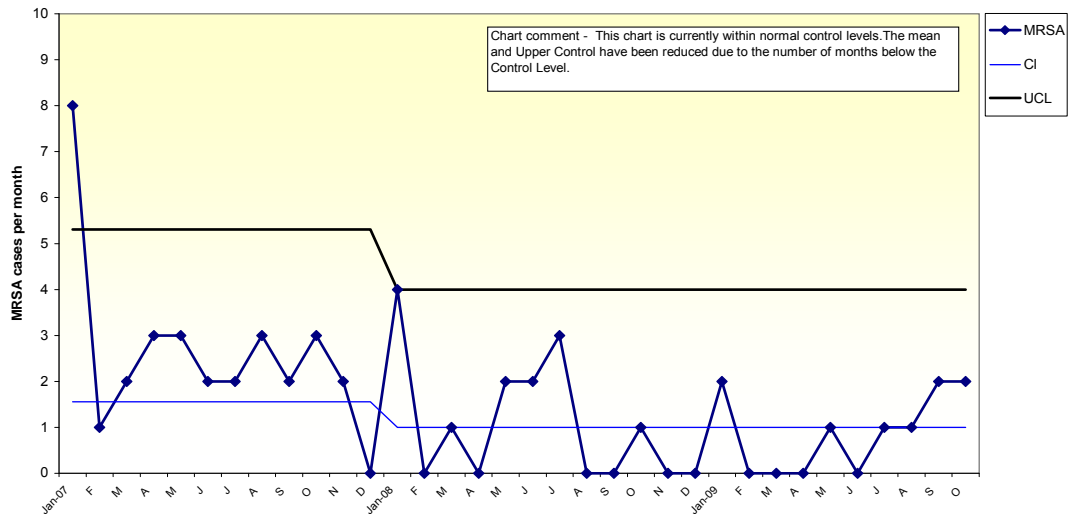
Both charts were within control limits in October 2009.

# VALE OF LEVEN

Hospital Acquired C-diff 2007- 2009, VOL



Hospital Acquired MRSA 2007- 2009, VOL



Both charts were within control limits in October 2009.

## **Ward Based Reporting – Exception Reports**

The total number of wards with exception reports per site: October 09

<b>HOSPITAL SITE</b>	<b>MRSA</b>
<b>Inverclyde</b>	<b>1</b>