Board Paper No. 09/50

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 OCTOBER 2009

This is the fifth 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 on 8th July 2009 (Jan- March 09) indicates that the annual rate of C. difficile Infection in NHSGGC (April 08-March 09) is 0.79 per 1000 occupied bed days. The rate for NHS Scotland was reported as 1.09 per 1000 occupied bed days for the same period.
- The SSI rates in NHSGGC remain below the national average for all procedures.
- 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.

Run chart of quarterly number of S. aureus bacteraemia in NHS Greater Glasgow and Clyde, 1st April 2005 to 31st March 2009 with HEAT target trajectory to 31st March 2010.
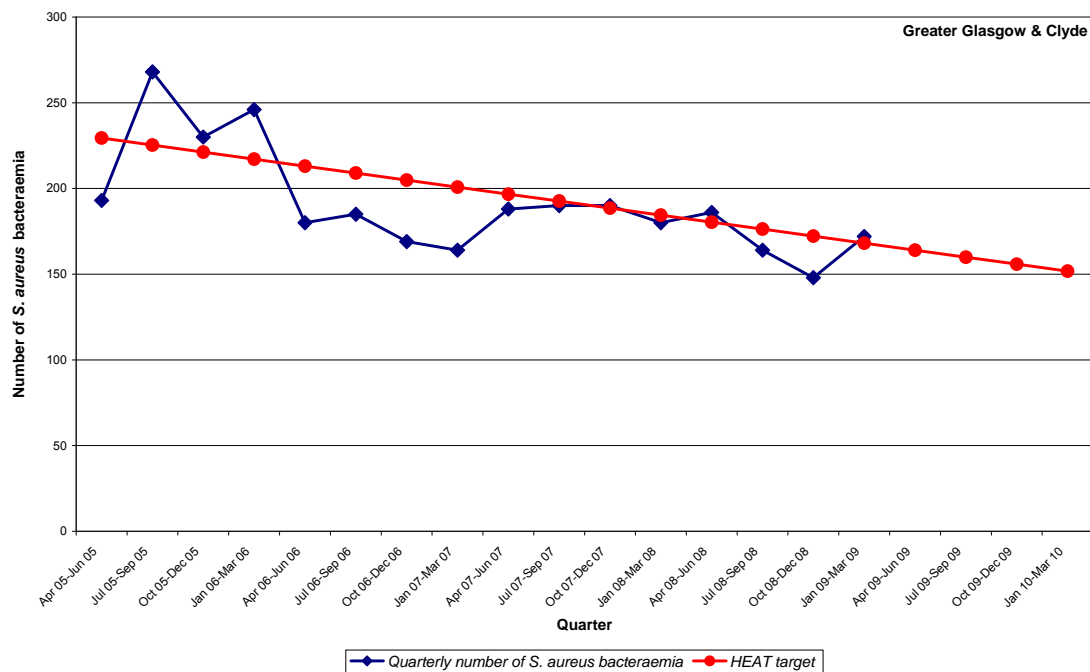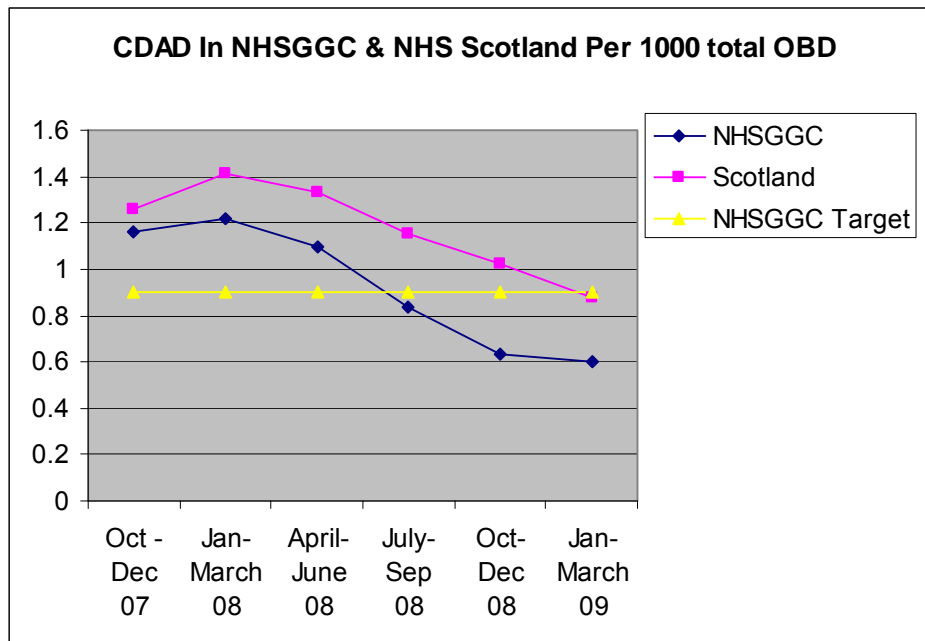

Key Messages
- If Current trends are maintained NHSGGC is on target to achieve the 35% reduction in *S. aureus* bacteraemia by 2010. This replicates the national trend for NHS Scotland.
- All Statistical Process Control Charts for MRSA (all types of MRSA not only blood stream infections) at hospital 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 8th July 2009 shows a reduction in the rate of *C. difficile* within NHSGGC and clearly places the Board below the national mean and also below the 0.9 per 1000 OBD HEAT target for 2011.
- NHSGGC had decreasing rates of C diff infection during the last four 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 August 2008 and 31 July 2009 in NHS Greater Glasgow & Clyde
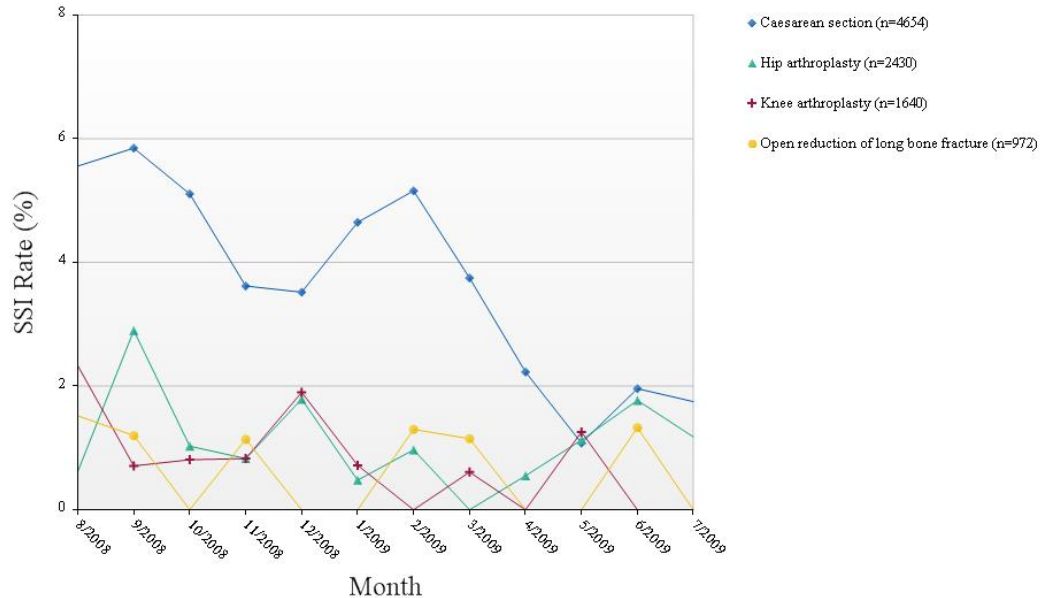
- All SSI rates remain within acceptable levels.
- A revision to the Caesarean section post discharge surveillance methodology has been introduced from 1st April 2009. CEL 2009(11) has noted the operational difficulties in maintaining patient discharge surveillance to day 30 and has subsequently reduced this period to day 10

SSI Rate (%)

Month	Caesarean section (n=4654)	Hip arthroplasty (n=2430)	Knee arthroplasty (n=1640)	Open reduction of long bone fracture (n=972)
8/2008	5.56	0.62	2.33	1.52
9/2008	5.85	2.90	0.71	1.20
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	1.08	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

Key Message

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

NHSGGC compared to NHS Scotland 01 April 2009 to 30 June 2009

Category of procedure	NHSGGC SSI rate (%)	National dataset SSI rate (%)
Caesarean section	1.78	3.70
Hip arthroplasty	1.20	1.44
Knee arthroplasty	0.44	1.45
Open reduction of long bone fracture	0.45	0.96

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).

	3rd Quarter National Audit Period 03-14 November 2008	4th 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
National overall compliance	93%	93%	92%	93%	93%
NHSGGC overall compliance	92%	92%	88%	93%	93%
National Nurse	95%	95%	92%	94%	94%
NHSGGC Nurse	98%	96%	85%	93%	94%
National Medic	84%	85%	86%	86%	87%
NHSGGC Medic	69%	73%	80%	85%	88%
National Ancillary/ others	92%	91%	93%	93%	94%
NHSGGC Ancillary/ others	92%	93%	93%	94%	95%
National AHP	93%	94%	96%	95%	95%
NHSGGC AHP	93%	95%	100%	100%	93%

Key Messages

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

Local audits carried out by ward based staff continue across the Board with Data Analysis support in place in some Directorates.
This assists in allowing information to be fed back centrally and gives support to local staff involved.
Local monitoring enables local resolution of issues and assists in meeting the joint aims of the Board, the National Hand Hygiene Campaign and the Scottish Patient Safety Programme.

Scotland's Hand Hygiene Campaign was recently highlighted as influential by members of the global community at a World Health Organisation conference in Geneva.

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:
- ≥ 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	Average 2008/2009	April 09 %	May 09 %	June 09 %	Average 1st Quarter 09/10
Vale of Leven/Lomond/Dumbarton/Helensburgh	Clyde	95.9	96.1	96.9	97.4	96.8
Inverclyde Non Acute	Clyde	97.5	97.3	97.5	96.8	97.2
Inverclyde Royal	Clyde	97.3	97.7	98.7	98.3	98.2
Dykebar/Johnstone/Merchiston	Clyde	96.3	96.5	96.1	96.5	96.4
Royal Alexandra Hospital	Clyde	95.7	95.6	96.5	96.5	96.2
Dental Hospital/Dalian	West	96.7	95.9	96.7	98.4	97.0
Blawarthill/Drumchapel	West	96.5	96.4	96.4	96.2	96.3
Glasgow Royal Infirmary	North East	95.3	95.9	95.8	95.9	95.9
Stobhill Hospital	North East	96.9	96.0	96.5	96.7	96.4
Stobhill ACAD Unit	North East				97.5	97.5
Mearnskirk Hospital	South	97.7	96.1	96.9	95.9	96.3
Langlands Unit	South	97.6	94.9	95.4	92.9	94.4
Mansion House Unit	South	97.4	98.5	98.6	98.6	98.6
Victoria Infirmary	South	97	96.4	97.2	97.3	97.0
Southern General Hospital	South	96.8	95.6	96.3	96.3	96.1
Yorkhill Hospitals	West	96.4	96.1	96.3	96.3	96.2
Western Infirmary	West	96.7	97.1	97.4	96.8	97.1
Gartnavel General Hospital	West	96.5	96.1	94.6	95.0	95.2
Lightburn Hospital	North East	94.1	95.9	91.6	93.3	93.6
PCD East	PCD	96.6	94.7	95.3	95.9	95.3
PCD North	PCD	96.3	94.8	96.5	96.5	95.9
PCD South	PCD	95.2	97.0	95.3	96.5	96.3
PCD West	PCD	96.1	95.5	97.0	96.2	96.2
Overall NHS Greater Glasgow and Clyde		96.5	96.2	96.3	96.4	96.4

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.

This is an SPC showing only Natural Variation
(*Note on this chart all the results are within the control limits*)
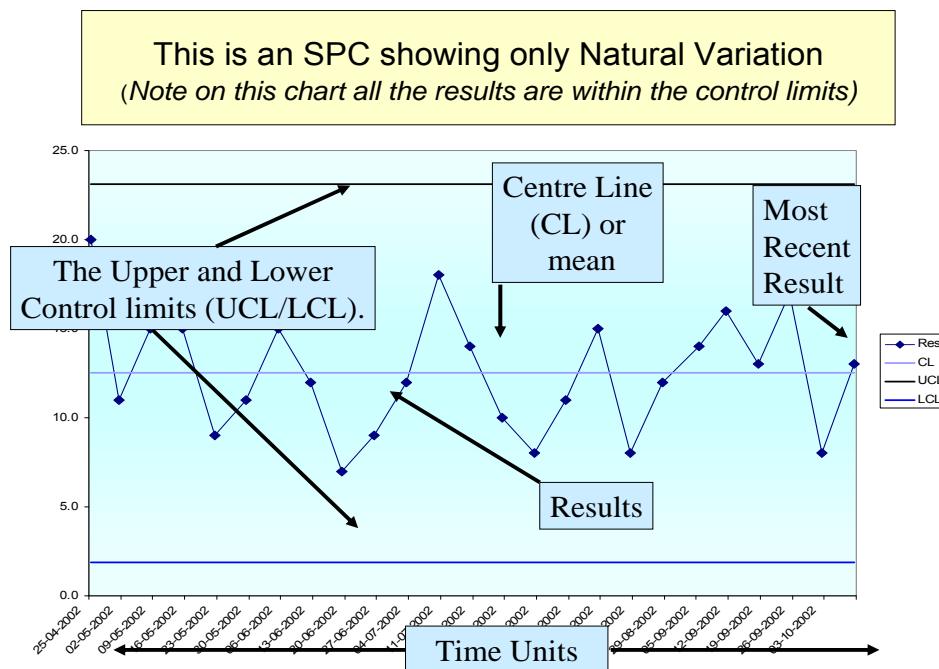
Quality Improvement

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.
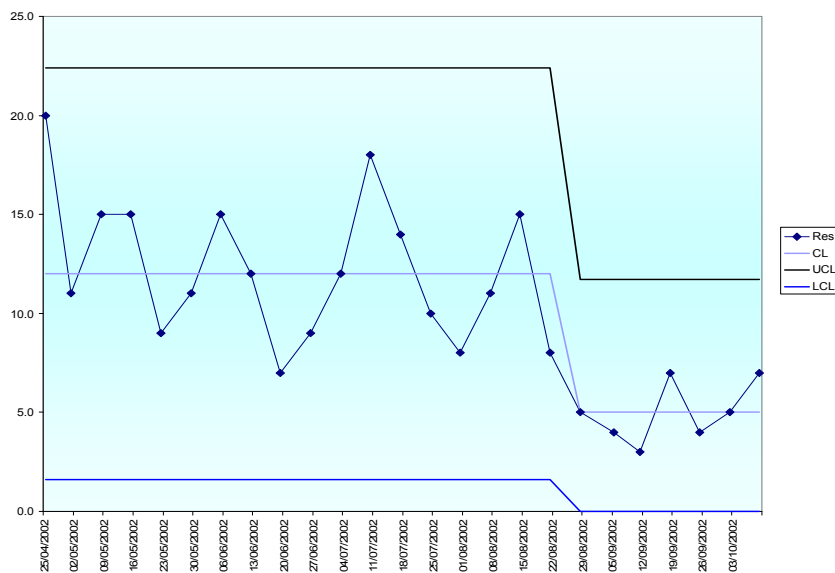
Trigger Events/Charts that Breach the Upper Control Limits

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**
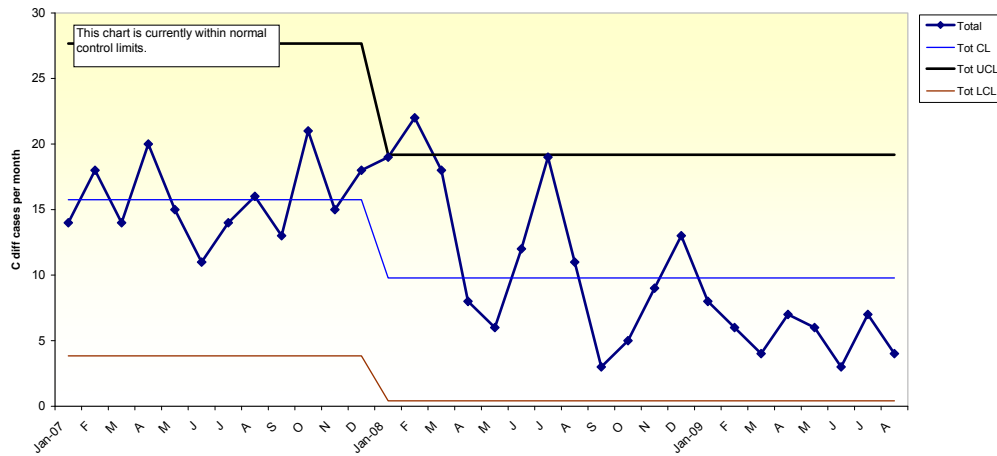
**Hospital Acquired
MRSA per month GRI 2007 - 2009**
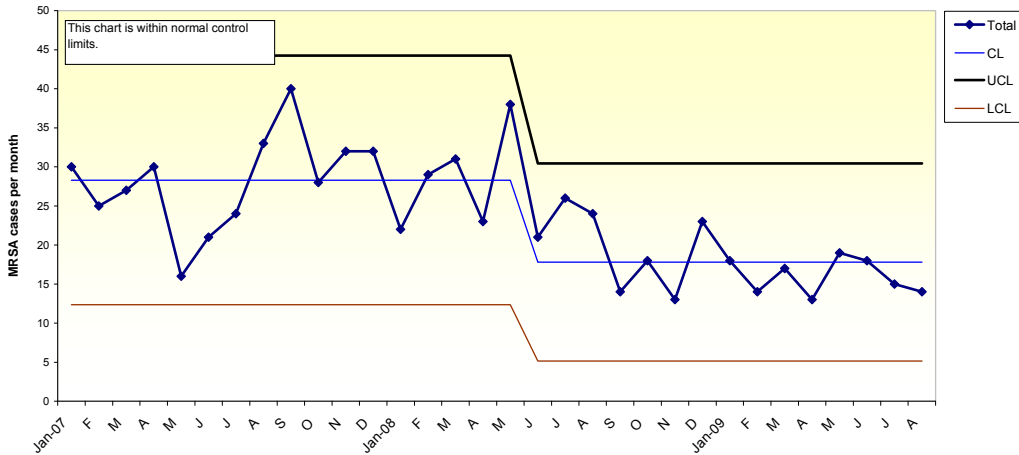
Both charts were within control limits in August 2009.

LIGHTBURN HOSPITAL

Hospital Acquired
Clostridium difficile Lightburn Hospital 2007-2009
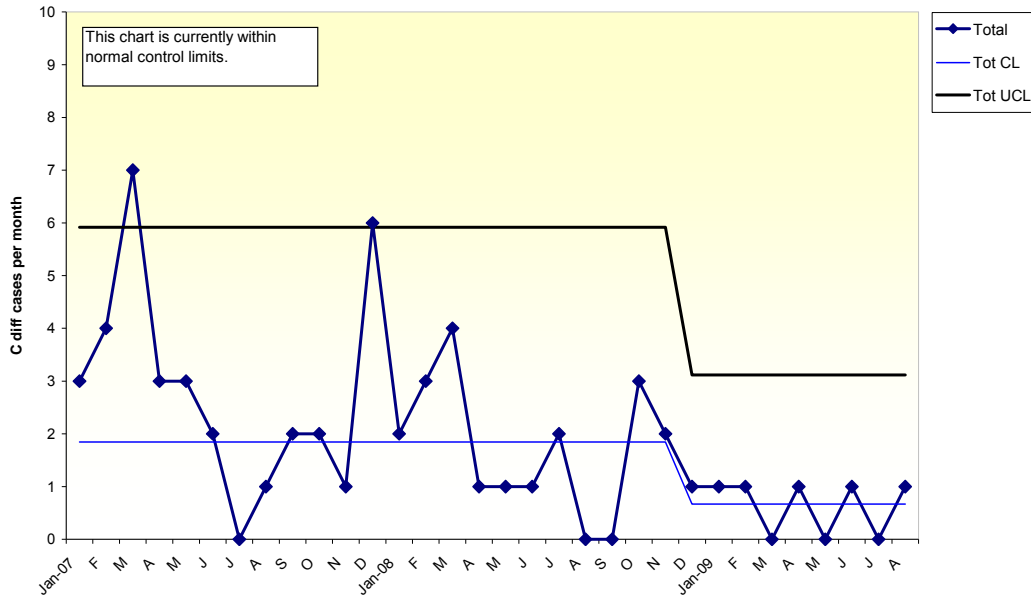
Hospital Acquired -
MRSA Lightburn Hospital 2007-2009
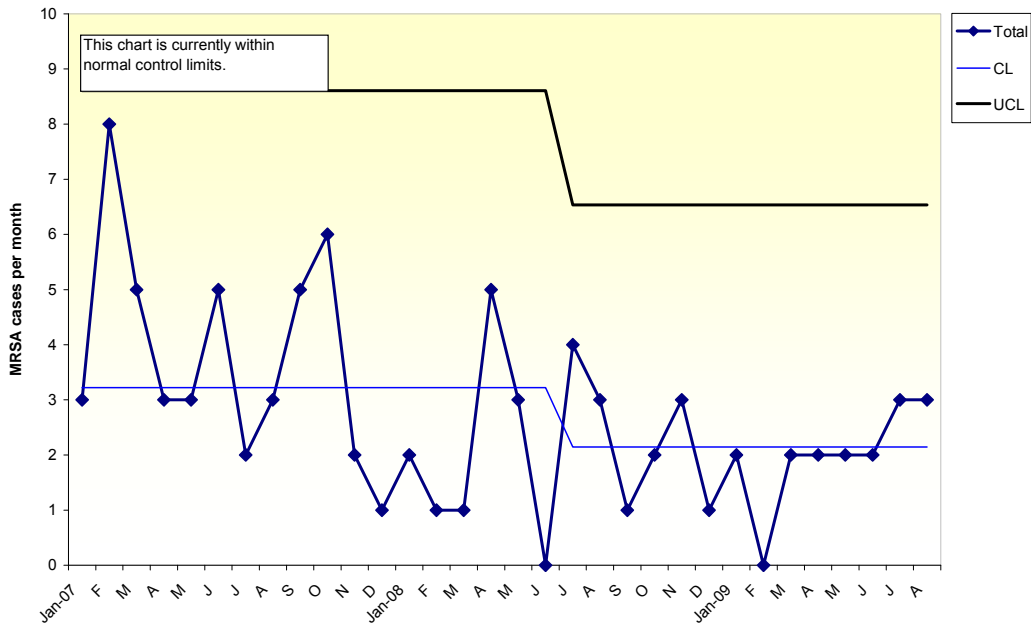
Both charts were within control limits in August 2009.

STOBHILL HOSPITAL

**Hospital Acquired -
C.difficle in Stobhill 2007-2009**

This chart is currently within normal control limits.
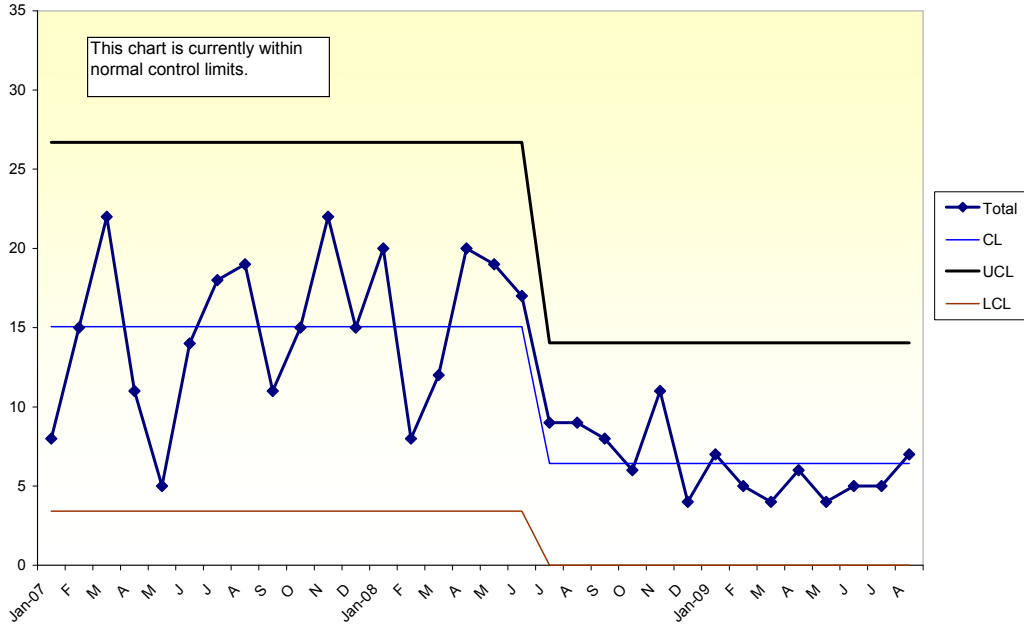
**Hospital Acquired
MRSA in Stobhill 2007-2009**

This chart is currently within normal control limits.
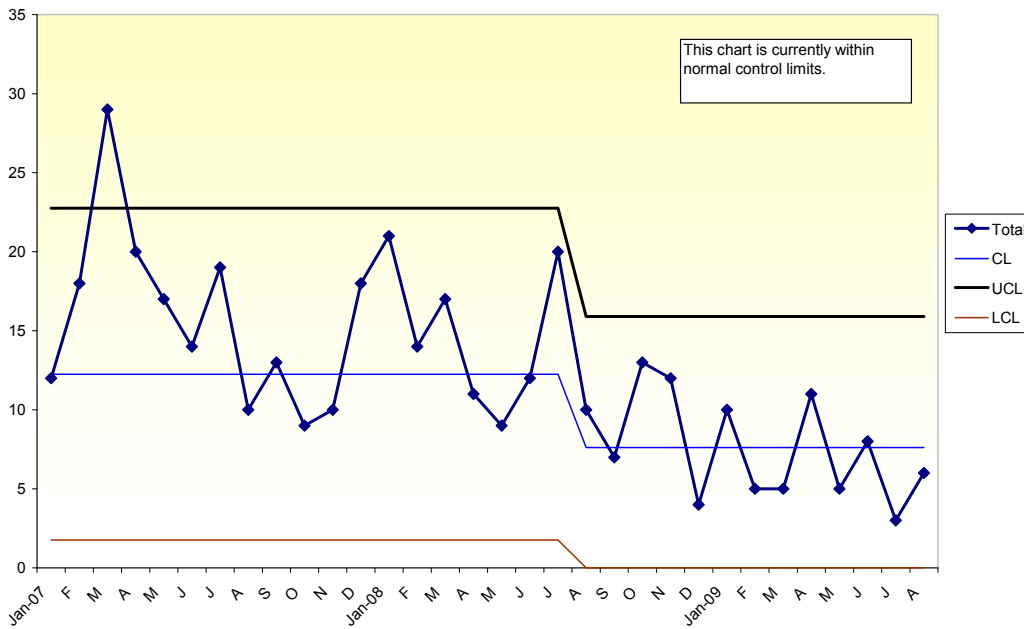
Both charts were within control limits in August 2009.

ROYAL ALEXANDRA HOSPITAL

**Hospital Acquired -
C-Diff, 2007 - 2009, RAH**
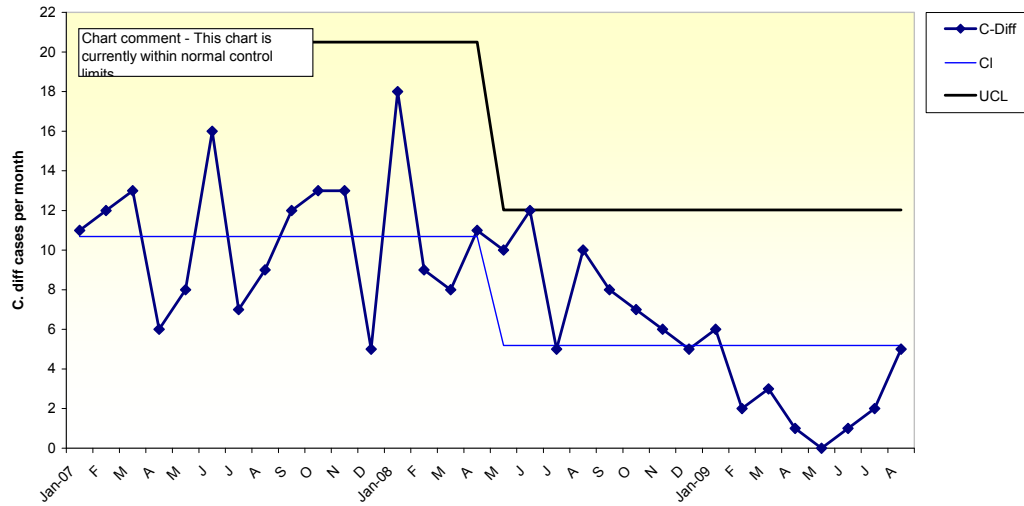
**Hospital Acquired -
MRSA, 2007- 2009, RAH**
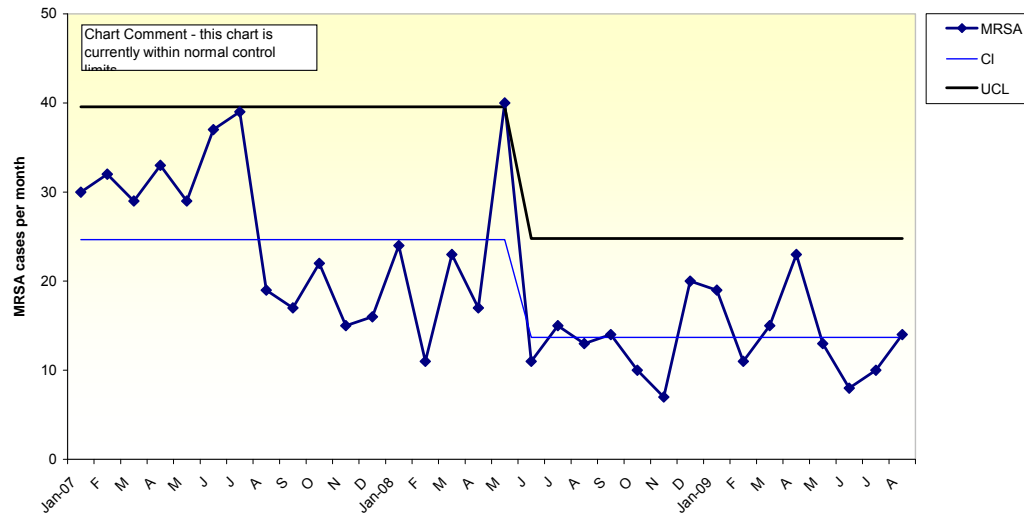
Both charts were within control limits in August 2009.

INVERCLYDE HOSPITAL

**Hospital Acquired -
C. diff 2007 - 2009, IRH**
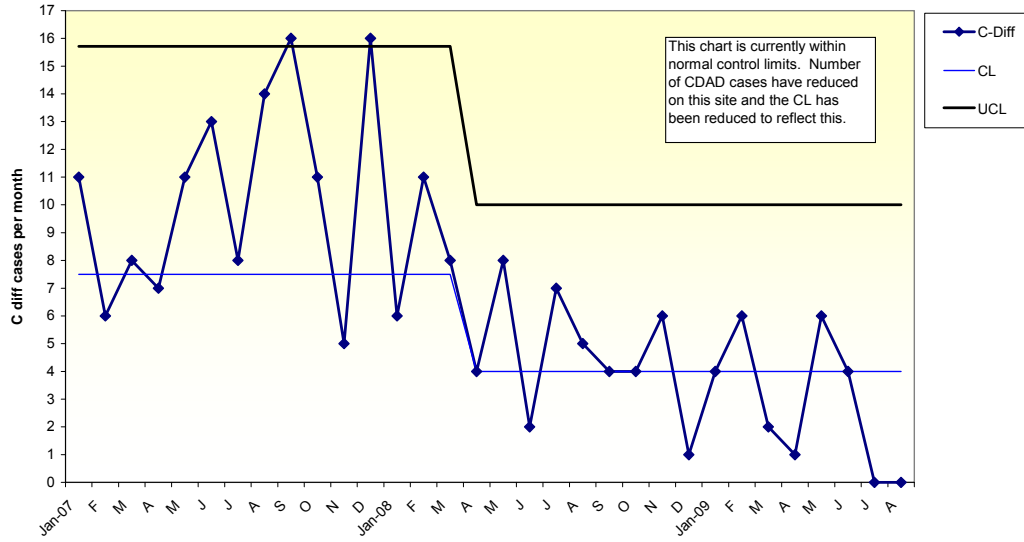
This chart is currently within normal control limits. Number of CDAD cases have reduced on this site and the CL has been reduced to reflect this.

**Hospital Acquired -
MRSA 2007 - 2009, IRH**

Chart Comment - this chart is currently within normal control limits.
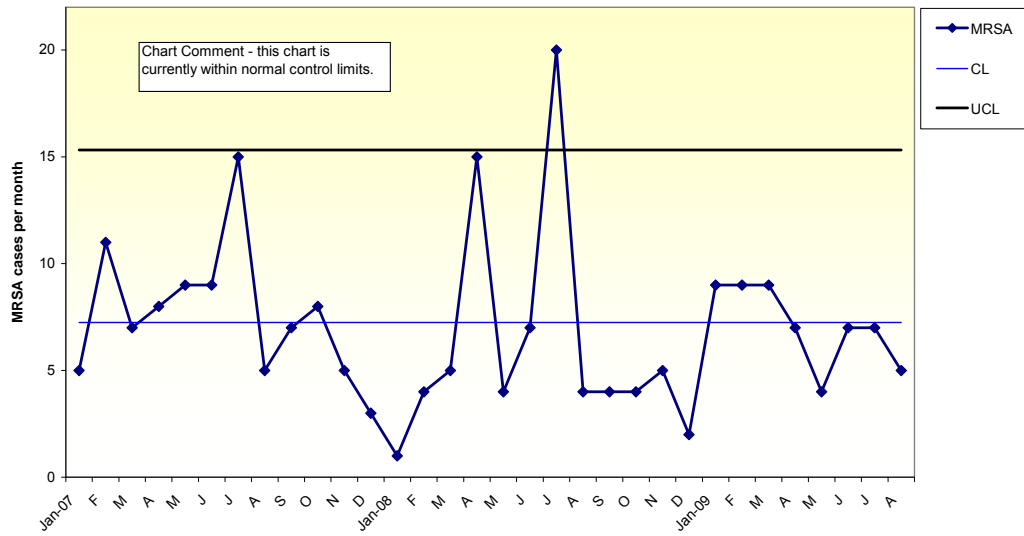
Both charts were within control limits in August 2009.

VICTORIA INFIRMARY

Hospital Acquired -
C. difficile Victoria Infirmary - All Directorates 2007- 2009
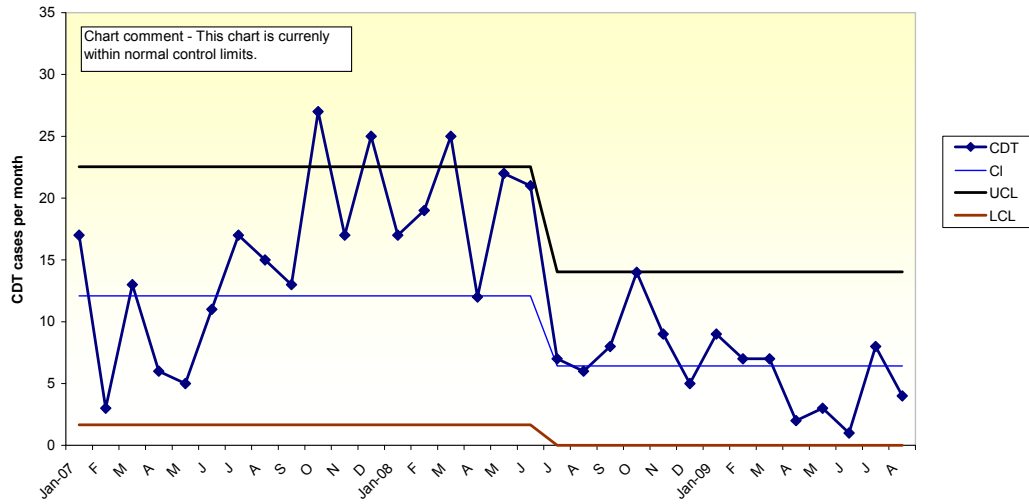
Hospital Acquired -
MRSA Victoria Infirmary - All Directorates Total 2007-2009
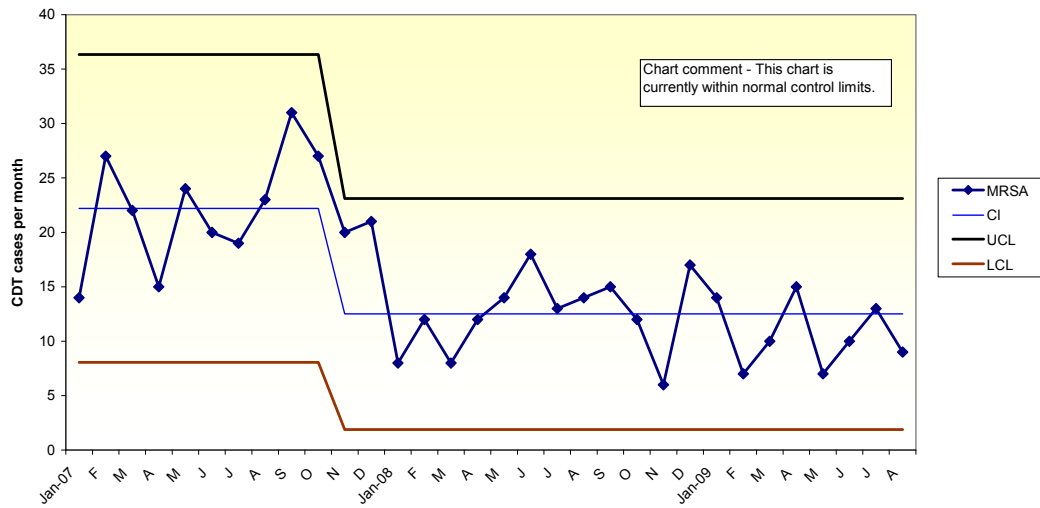
Both charts were within control limits in August 2009.

SOUTHERN GENERAL

Hospital Acquired -
C. difficile Southern General Hospital - All Directorates 2007-2009
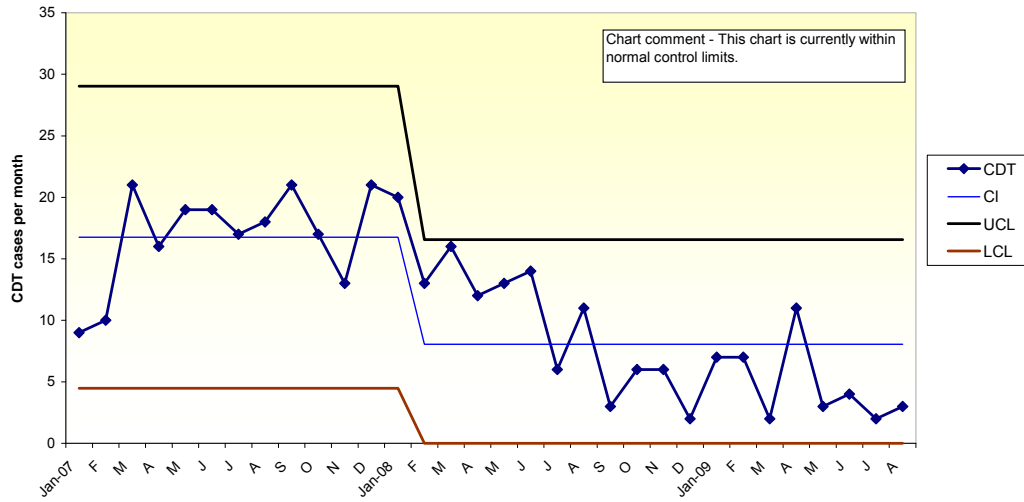
Hospital Acquired -
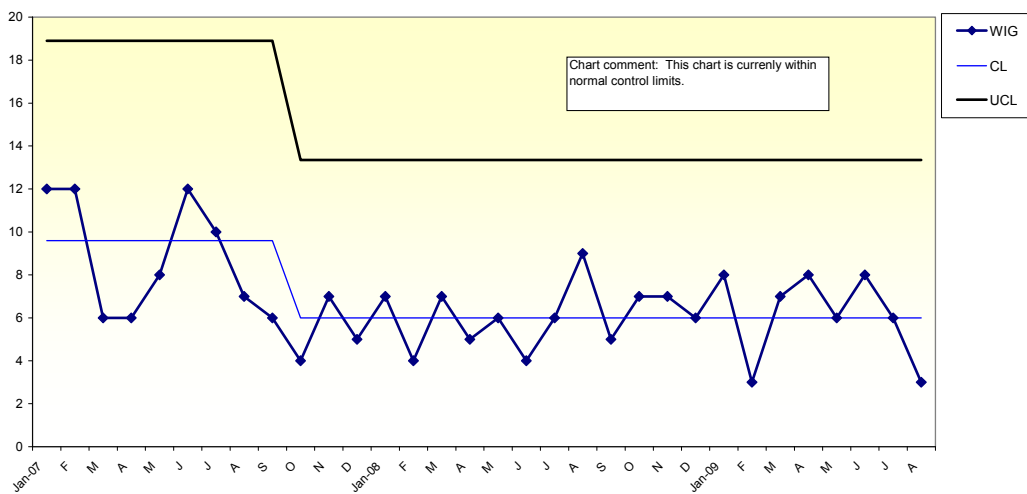**MRSA Southern General Hospital - All Directorates Total 2007-2009**
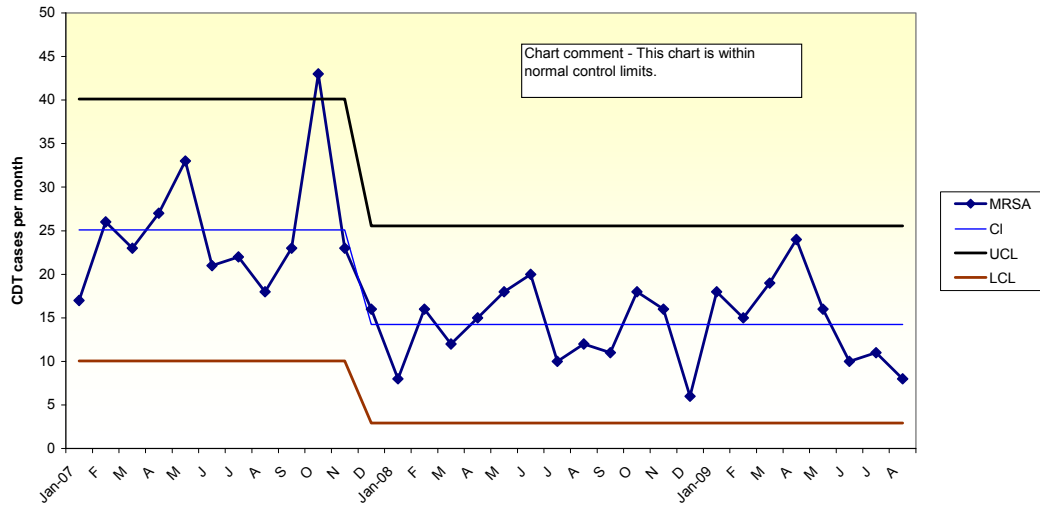
Both charts were within control limits in August 2009.

WESTERN INFIRMARY

Hospital Acquired C.diff - WIG Total 2007 - 2009
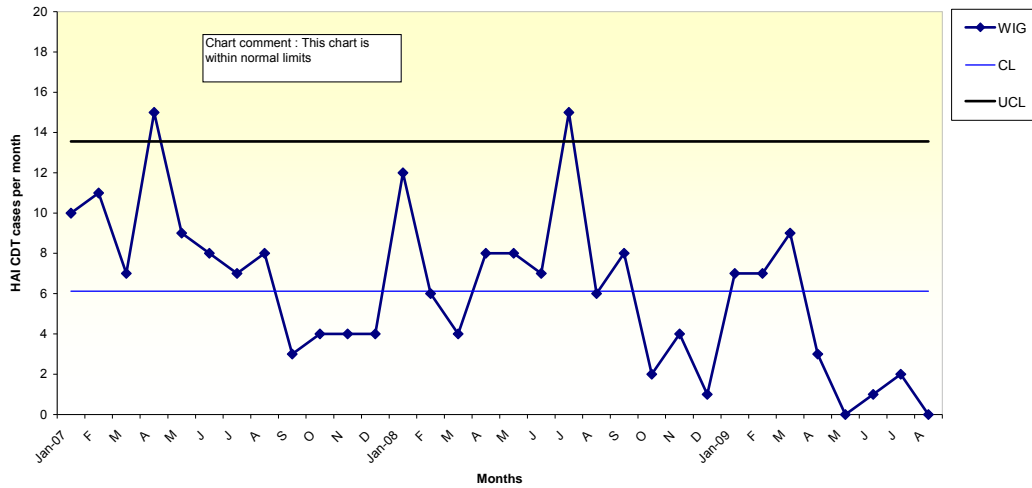
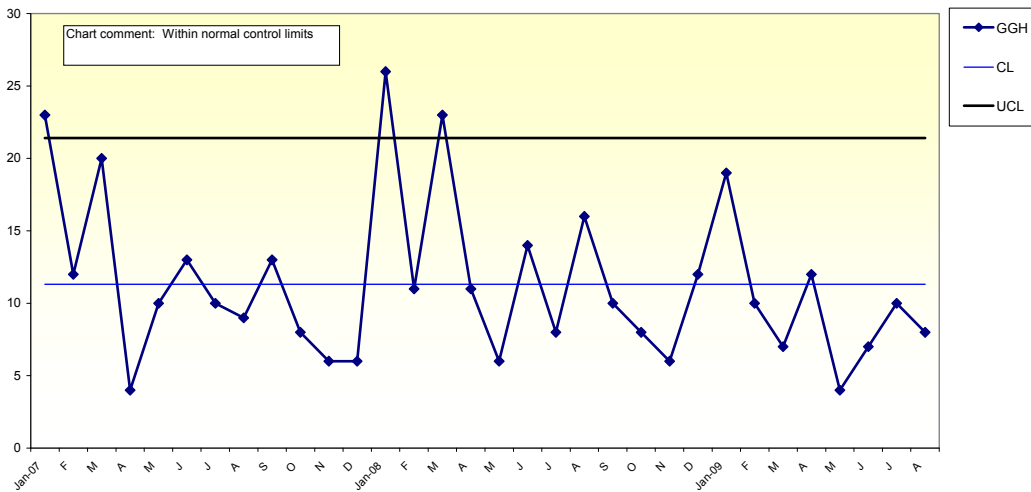**Hospital Acquired MRSA's - WIG Total 2007 - 2009**

Both charts were within control limits in August 2009.

GARTNAVEL GENERAL HOSPITAL

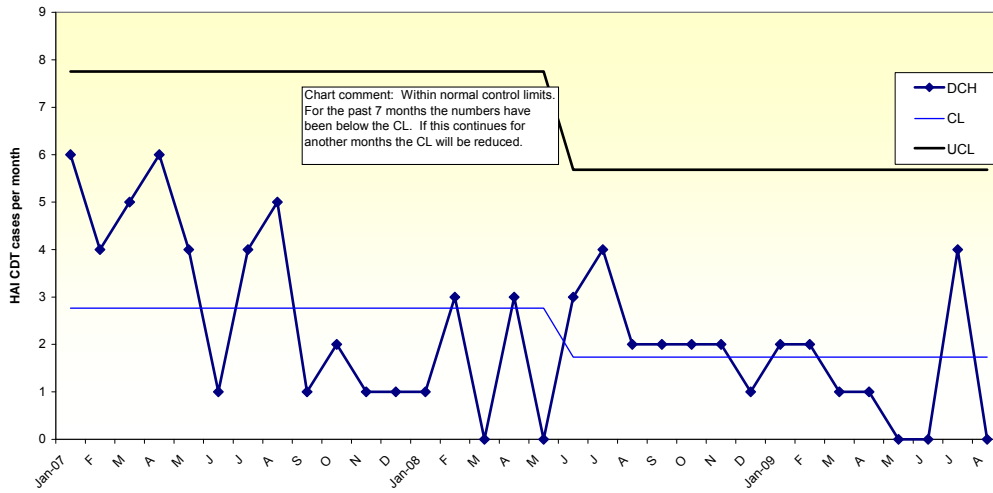**Hospital Acquired Cdiff - GGH Total 2007 - 2009**

Chart comment: This chart is currently within normal control limits.
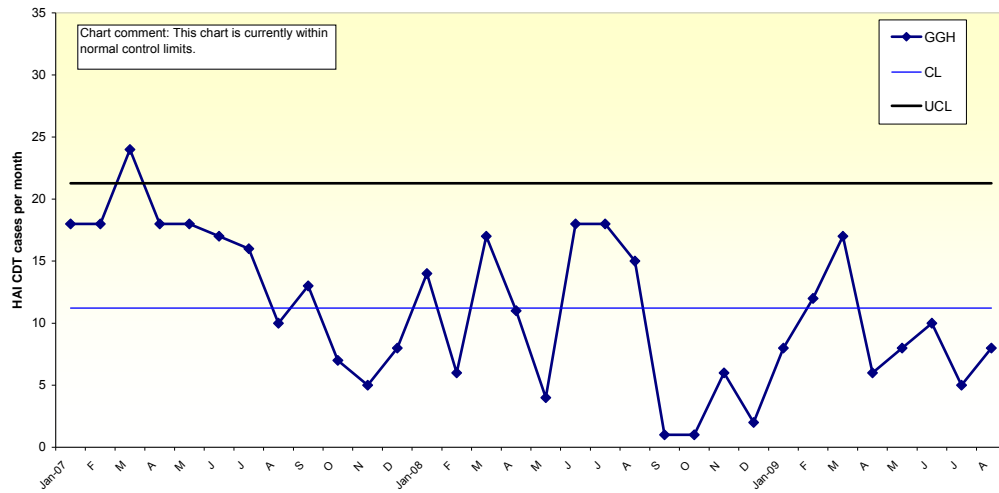
Hopsital Acquired MRSA's - GGH Total 2007 - 2009
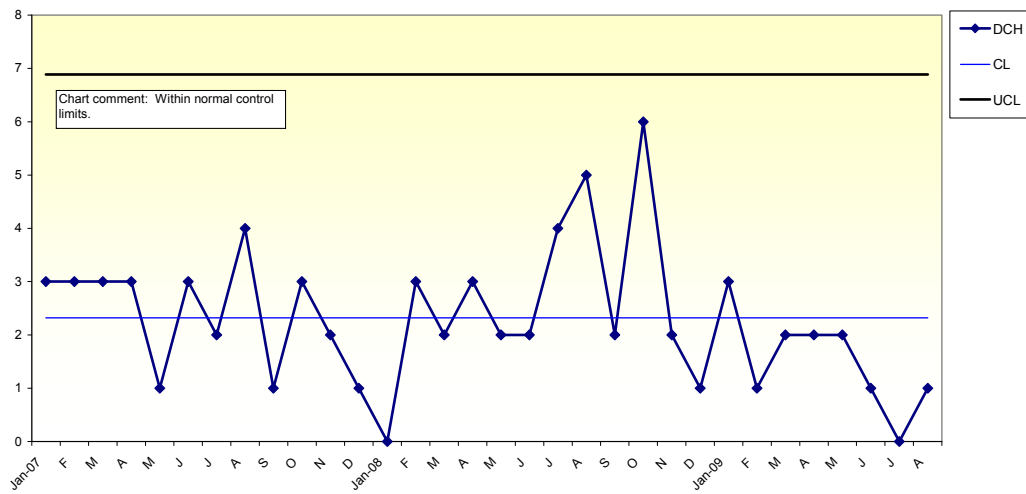
Chart comment: Within normal control limits

Both charts were within control limits in August 2009.

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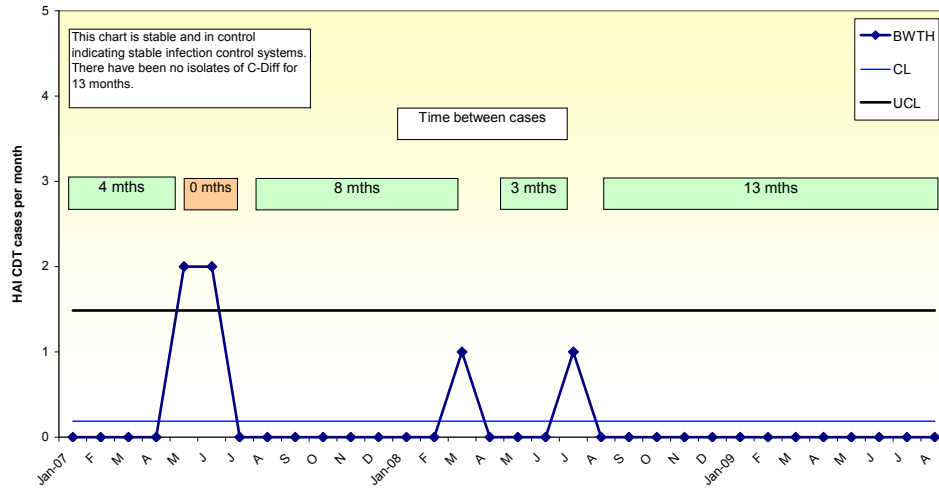
Hospital Acquired C.diff's - DCH Total 2007 - 2009

Chart comment: Within normal control limits. For the past 7 months the numbers have been below the CL. If this continues for another months the CL will be reduced.

Hospital Acquired MRSA's - DCH Total 2007 - 2009

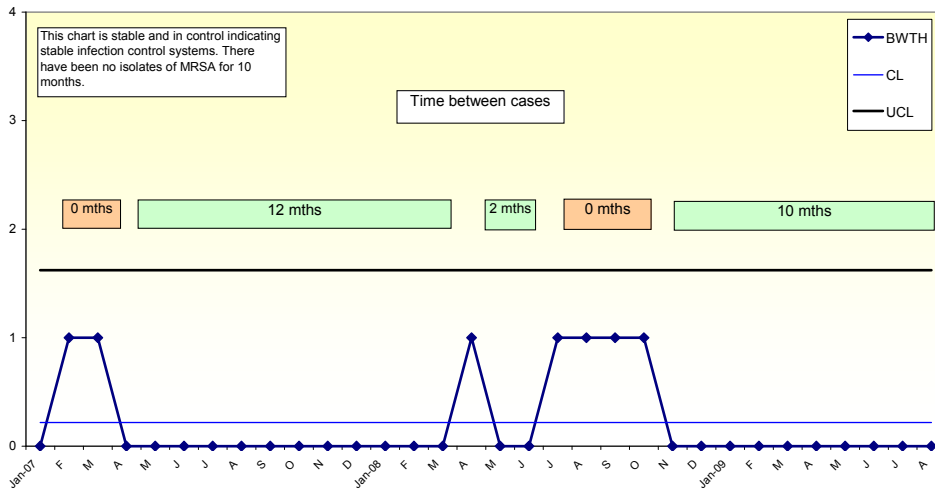Chart comment: Within normal control limits.

Both charts were within control limits in August 2009.

BLAWARTHILL HOSPITAL

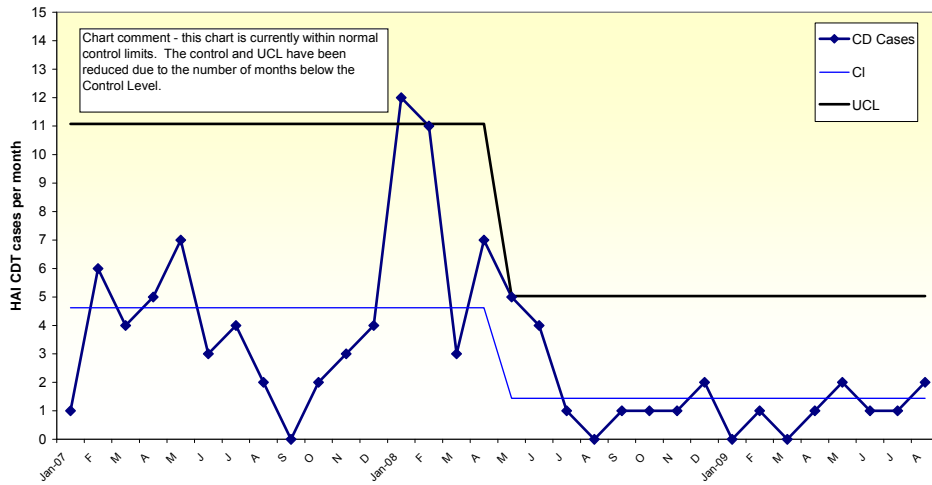**Hospital Acquired C.diff's BWTH Total 2007 - 2009**

Hospital Acquired MRSA's BWTH Total 2007 - 2009
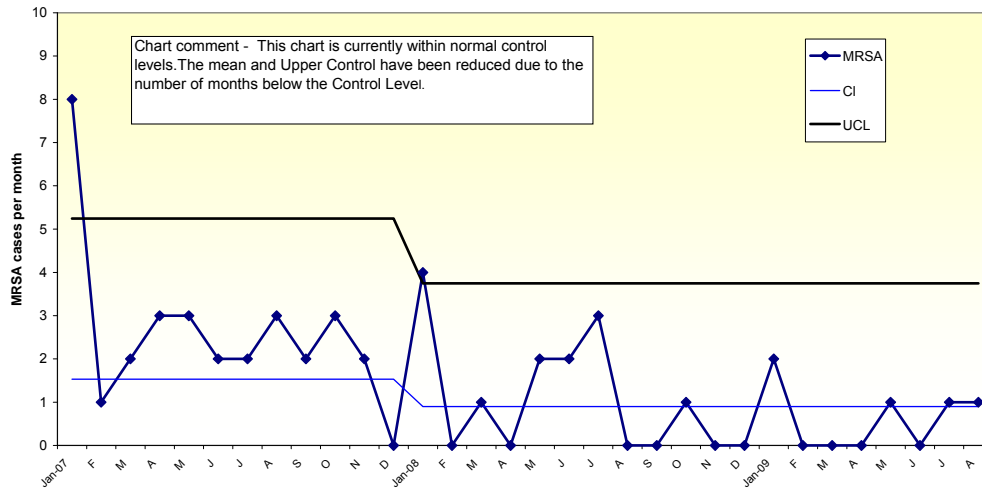

Both charts were within control limits in August 2009.

VALE OF LEVEN

Hospital Acquired C-diff 2007- 2009, VOL

Hospital Acquired MRSA 2007- 2009, VOL

Both charts were within control limits in August 2009.

Ward Based Reporting – Exception Reports

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

HOSPITAL SITE	MRSA
Inverclyde	1