The Royal Wolverhampton NHS Trust	

Trust Board Report

Meeting Date:	20th May 2013
Title:	Infection Prevention Update
Executive Summary:	• MRSA bacteraemia objective of zero for 2012-13 was breached by single case in November. • The Trust finished within its *C. difficile* objective for the year. • New record low numbers of RWT-attributable MSSA bacteraemias and MRSA acquisitions in 2012-13, but the DRHABs target was missed. • Surgical site infection project, with universal SSI surveillance, the work of the IV Team and the urinary catheters group all continue. • Compliance with mandatory training on hand hygiene and infection prevention reached the NHSLA target of 95% compliance during the year, but finished the year below this level. • Compliance with the Health and Social Care Act (2008) remains good, with 100% compliance in eight of the ten criteria.
Action Requested:	Accept the information presented.
Report of:	Infection Prevention and Control Team
Author: **Contact Details:**	Dr M Cooper, Director of Infection Prevention and Control Tel 01902 307999 ext 8250 Email mike.cooper1@nhs.net
Resource Implications:	Significant but not generally quantifiable financial savings are produced by maintaining optimal infection prevention performance.
Public or Private: **(with reasons if private)**	Public Session
References: **(eg from/to other committees)**	Infection Prevention and Control Committee
Appendices/ **References/** **Background Reading**	Appendix 1 – MRSA Bacteraemias Appendix 2 – MSSA Bacteraemias Appendix 3 – Hospital Acquired Bacteraemias (HABs) and Device-Related HABs (DRHABs) Appendix 4 - Blood Culture Contaminants Appendix 5 - MRSA Acquisitions Appendix 6 - *Clostridium difficile* Appendix 7 - *Escherichia coli* Bacteraemias

	Appendix 8 - Compliance with Infection Prevention Mandatory Training Appendix 9 - Compliance with the Code of Practice Appendix 10 - Current Projects and Norovirus Outbreak
NHS Constitution: **(How it impacts on any decision-making)**	In determining this matter, the Board should have regard to the Core principles contained in the Constitution of: - Equality of treatment and access to services - High standards of excellence and professionalism - Service user preferences - Cross community working - Best Value - Accountability through local influence and scrutiny

Background Details

1. The Trust external targets for 2012-13 were: MRSA bacteraemia - 0 and *Clostridium difficile* toxin positives - 57. These targets apply to New Cross Hospital only. Local commissioners set an additional target for West Park Hospital of 12 *C. difficile* toxin positive cases per year, which means Monitor accepted a target of 69 cases for RWT.

   National mandatory surveillance of MSSA and *E. coli* bacteraemias is undertaken, though no external targets were set for these. There was, however, an internal target for MSSA bacteraemias, along with internal targets for *C. difficile* PCR positives (which includes recently discharged patients in addition to in-patients), and device-related hospital acquired bacteraemias (DRHABs). Admission screening for MRSA carriage allows us to monitor the number of MRSA acquisitions that occur, and monthly targets are set for this for the organization, each clinical Division and every ward.

   Compliance with Infection Prevention elements of mandatory training, relevant High Impact Interventions and other measures are monitored monthly at the Infection Prevention and Control Committee.

   Compliance with the Code of Practice is monitored through 'Health Assure' (formally called Performance Accelerator).

   Details of the above can be seen in the Appendices.

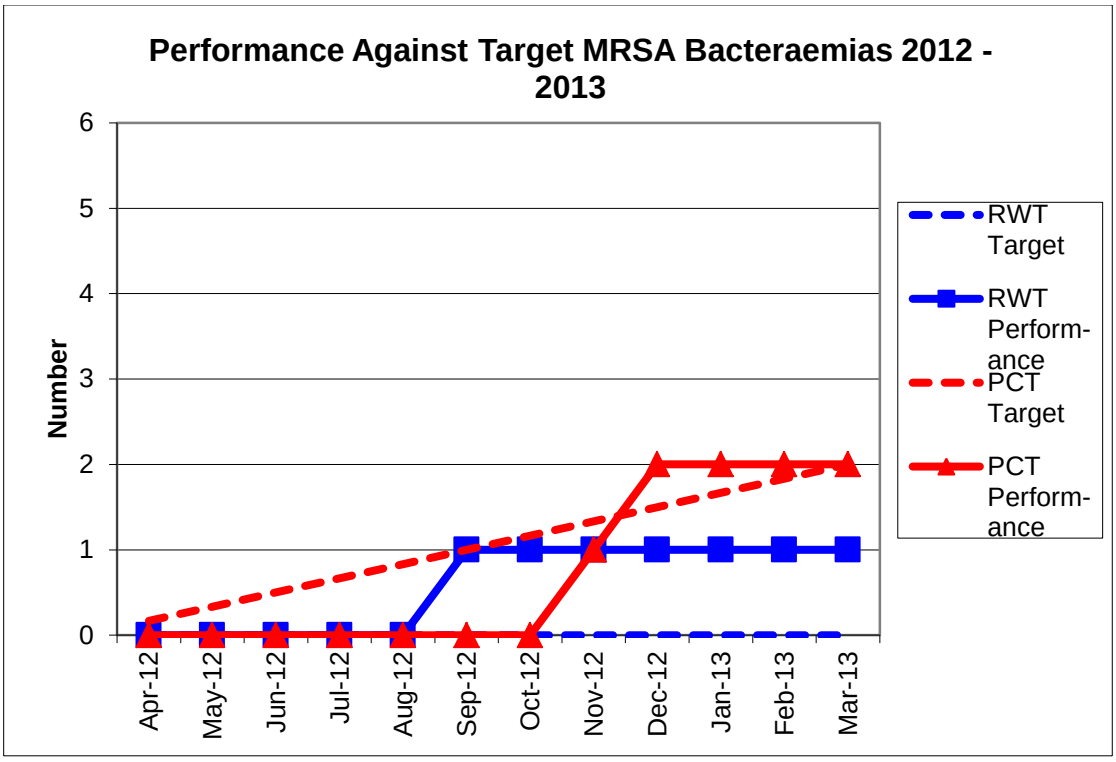
Appendix 1 – MRSA Bacteraemias

MRSA bacteraemias – monthly totals (and attributable to RWT)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
11-12 (RWT)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
12-13 (RWT)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0)	1 (1)	0 (0)	1 (0)	2 (0)	0 (0)	0 (0)	0 (0)

Annual target 2012-13 = 0 for RWHT; 2 for Wolverhampton PCT
Total for 2012-13 = 1 for RWHT; 2 for Wolverhampton PCT

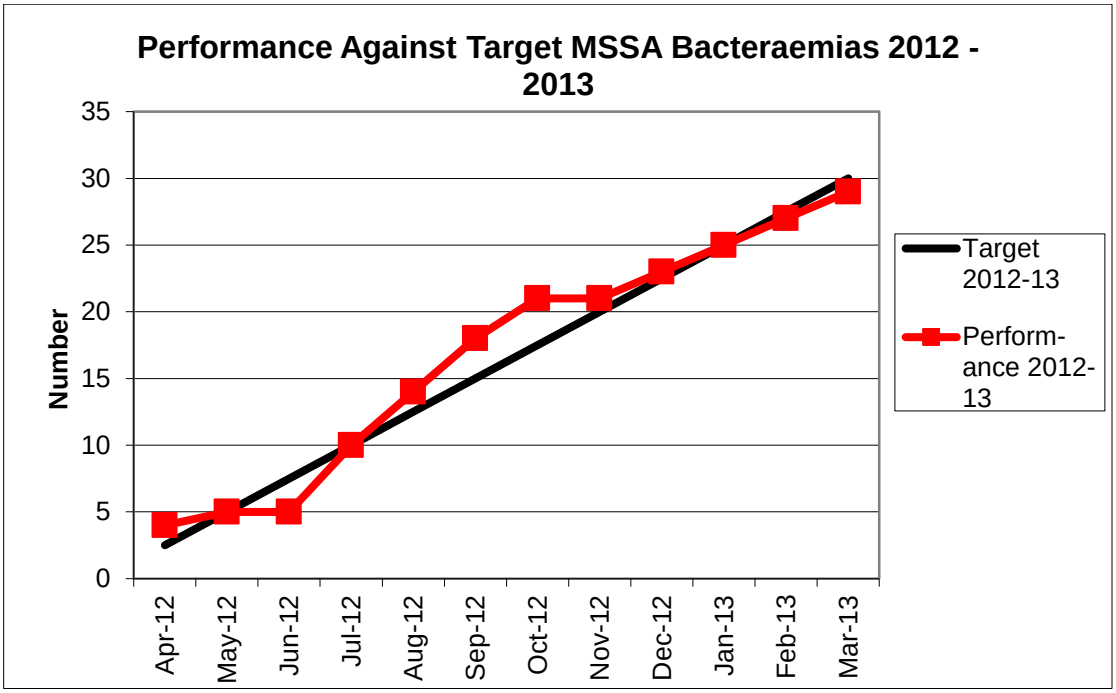
Of the six MRSA bacteraemias in the above table, five were pre-48 hour cases, but two of these were in patients who had had recent in-patient care in New Cross. The one post-48 hour cases was classified as unavoidable after an RCA was carried out.



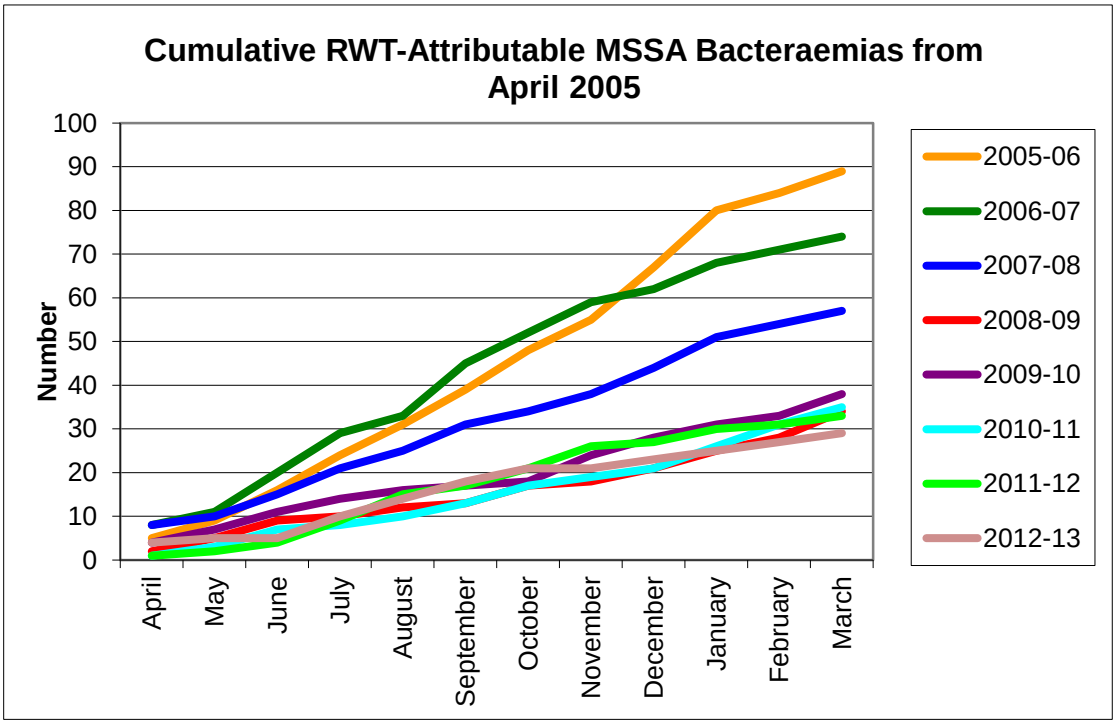
Appendix 2 – MSSA Bacteraemias

MSSA bacteraemias – totals and number attributable to RWT

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
11-12 (RWT)	2 (1)	5 (1)	2 (2)	5 (5)	6 (6)	4 (2)	8 (4)	9 (5)	2 (1)	5 (3)	3 (1)	3 (2)
12-13 (RWT)	4 (4)	3 (1)	4 (0)	8 (5)	10 (4)	6 (4)	5 (3)	4 (0)	4 (2)	5 (2)	5 (2)	4 (2)

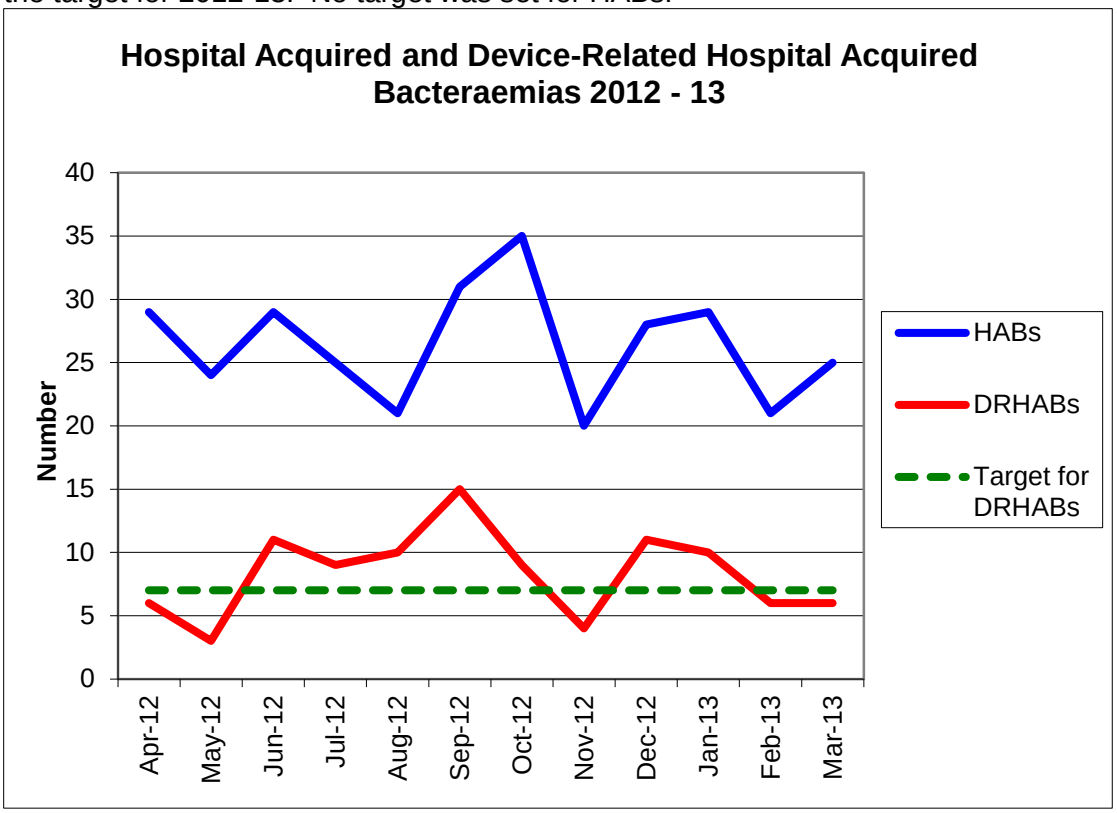


We finished within our internal target of 30 RWT-attributable MSSA bacteraemias for 2012-13, with 29, which is the lowest total since we began collecting this data. Of the 29 cases during the year, 18 were related to IV lines (seven Renal, seven Haematology / Oncology, one NNU, 1 CCU, two 'others'); eight were secondary to skin or soft tissue infections (no surgical site infections); one was related to a urinary catheter; one was a contaminant and there was one of unknown source.



Appendix 3 – Hospital Acquired Bacteraemias (HABs) and Device-Related HABs (DRHABs)

The number of HABs and DRHABs are monitored internally. We set an internal target of 84 DRHABs for the year. The graph below shows our performance against the target for 2012-13. No target was set for HABs.



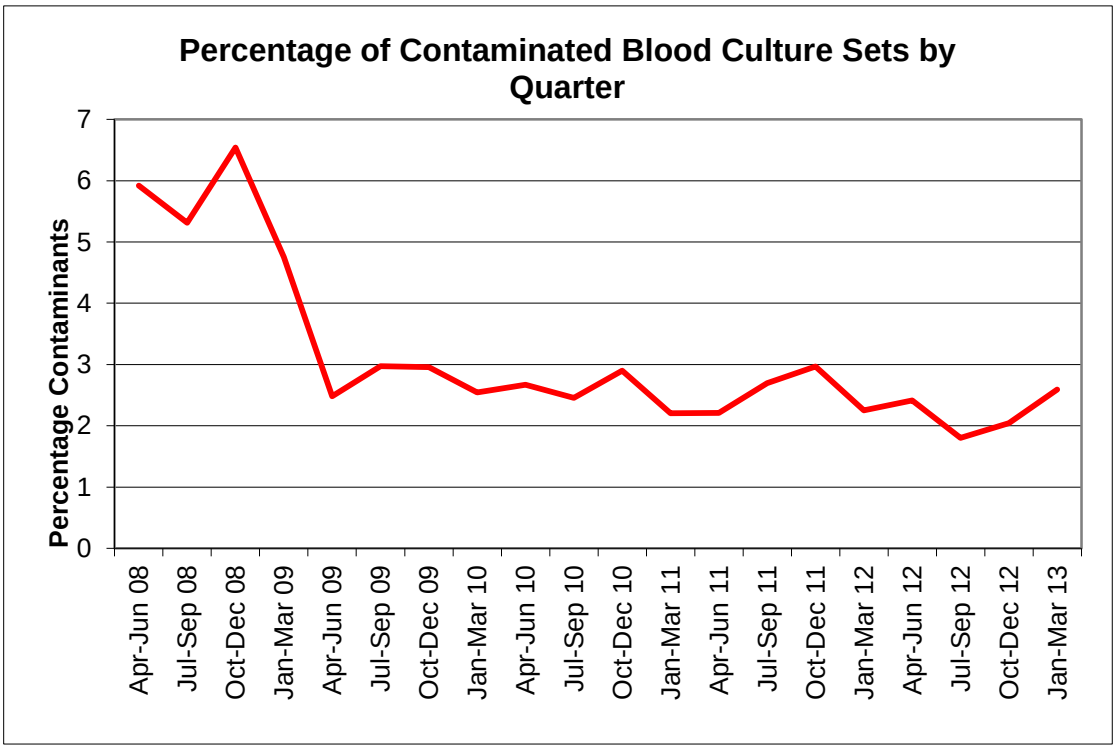
There were 100 DRHABs overall during the year, which is an increase on last year's total of 93. The sources of the DRHABs is shown in the table. The IV Team became operational in September 2012 and it was hoped that there would be a significant reduction in the number of line-associated DRHABs over the rest of the year. Unfortunately this has not yet been seen, principally because most of the line-associated DRHABs have been in areas, such as renal dialysis and Haematology, where the IV Team are not responsible for placing the lines. Work is being undertaken in these areas to try to reduce the number of such infections. The Trust had a CQUIN around urinary catheter management, and considerable work has been undertaken both in the hospital and community to reduce the number of infections related to these devices.

Devices Associated with DRHABs 2012-13

	Apr 12	**May 12**	**Jun 12**	**Jul 12**	**Aug 12**	**Sep 12**	**Oct 12**	**Nov 12**	**Dec 12**	**Jan 13**	**Feb 13**	**Mar 13**
B/C taken	966	1062	1035	1051	915	980	1052	978	1152	1107	1014	1119
B/C positives	96	99	83	88	76	80	93	72	97	93	75	98
B/C significant	67	68	69	69	60	62	70	52	74	64	56	62
Contaminants	29	31	14	19	16	18	23	20	23	29	19	36
HABs	29	24	29	25	21	31	35	20	28	29	21	25
DRHABs	**6**	**3**	**11**	**9**	**10**	**15**	**9**	**4**	**11**	**10**	**6**	**6**
IV Lines	5	2	10	7	8	7	7	2	9	5	5	6
Urinary cath	1	1	0	2	1	6	1	2	2	3	1	0
VAP	0	0	0	0	0	0	0	0	0	1	0	0
Nephrostomy	0	0	1	0	0	2	1	0	0	0	0	0
?VAP/?Line	0	0	0	0	1	0	0	0	0	0	0	0
?Line / ?PEG	0	0	0	0	0	0	0	0	0	1	0	0

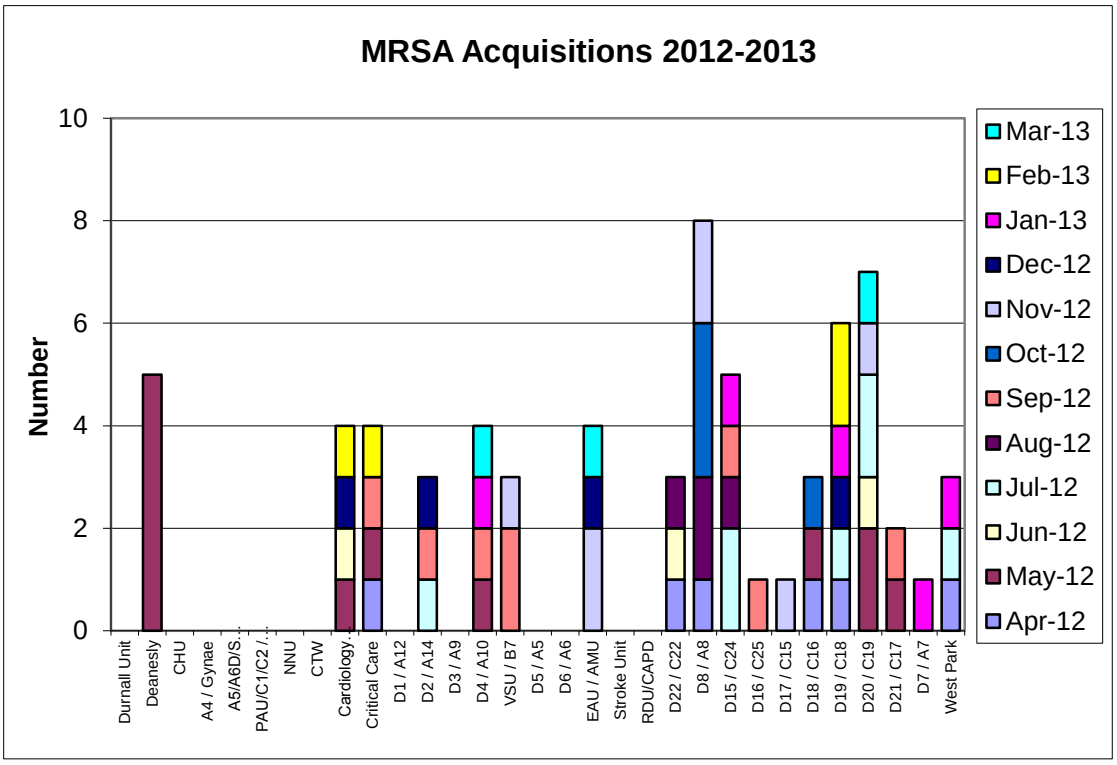
Appendix 4 - Blood Culture Contaminants

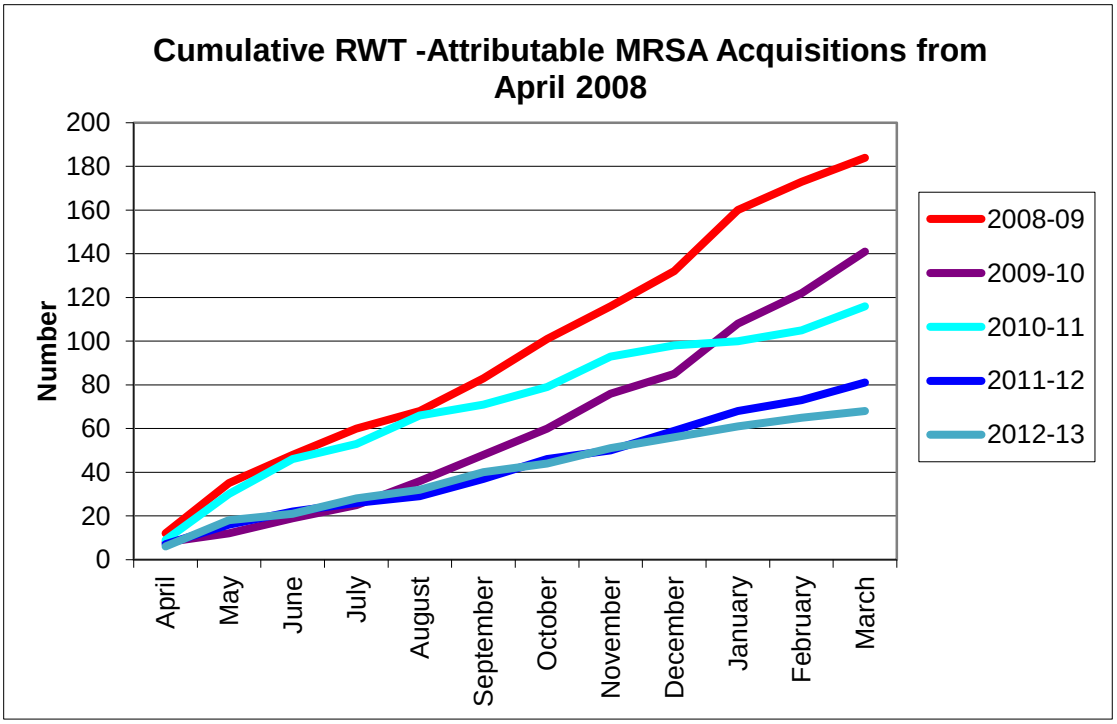
Contaminated blood cultures are a common problem which can lead to unnecessary patient investigations, prolonging the in-patient stay and wasting resources. In addition, antibiotics may be given to treat these pseudo-bacteraemias, increasing the risk of complications, such as *C. difficile*. The blood culture Phlebotomy Team enables the majority of blood cultures to be taken by dedicated staff fully trained in the necessary techniques. This has resulted in a substantial reduction in the number and rate of blood culture contaminants. In 2008-09, the average blood culture contamination rate was 5.64 percent; in 2012-13 it was 2.21 percent. There is no standard for this measure in the UK, but in the USA 3% is the generally agreed standard.



Appendix 5 - MRSA Acquisitions

The screening of all admissions to RWT has enabled the acquisition of MRSA in the hospital to be monitored. The first graph shows the wards where MRSA acquisitions were found to have occurred in 2012-13. All wards that have had clusters of cases have had meetings with and additional input from the Infection Prevention Team. This has led to a resolution of the problem in all cases. The second graph shows the cumulative MRSA acquisition numbers for the Trust over the past few years. It can be seen that a new record low total was set in 2012-13

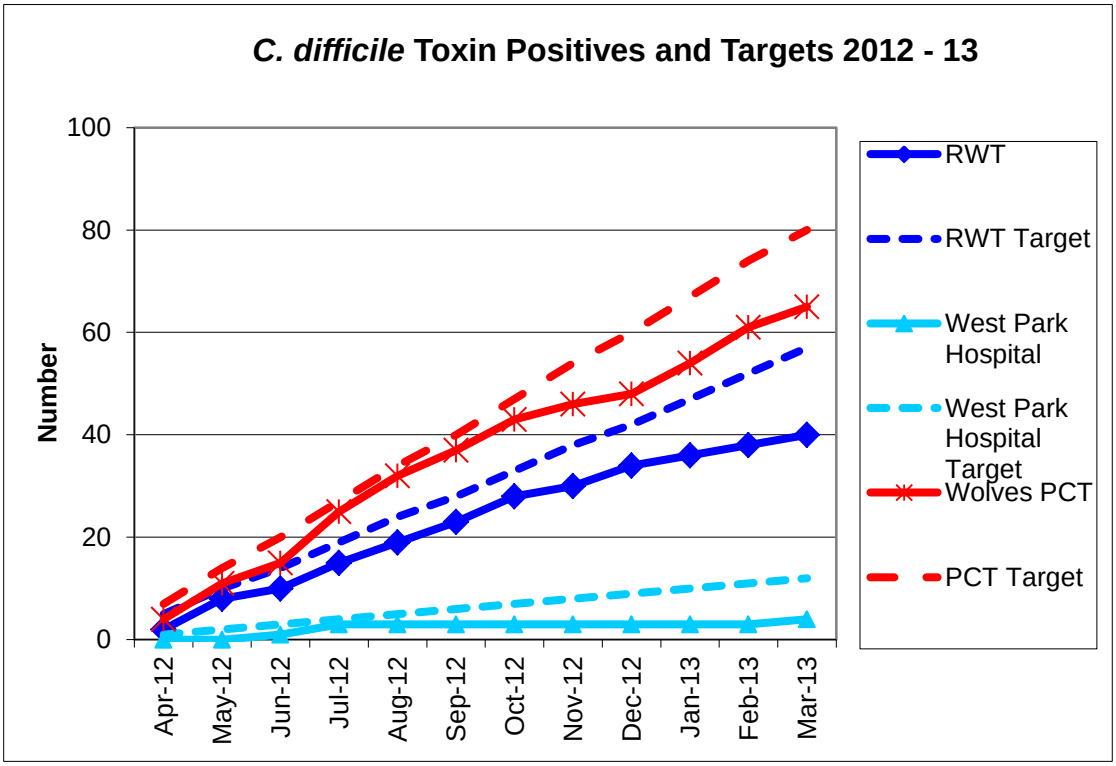




Appendix 6 - *Clostridium difficile*

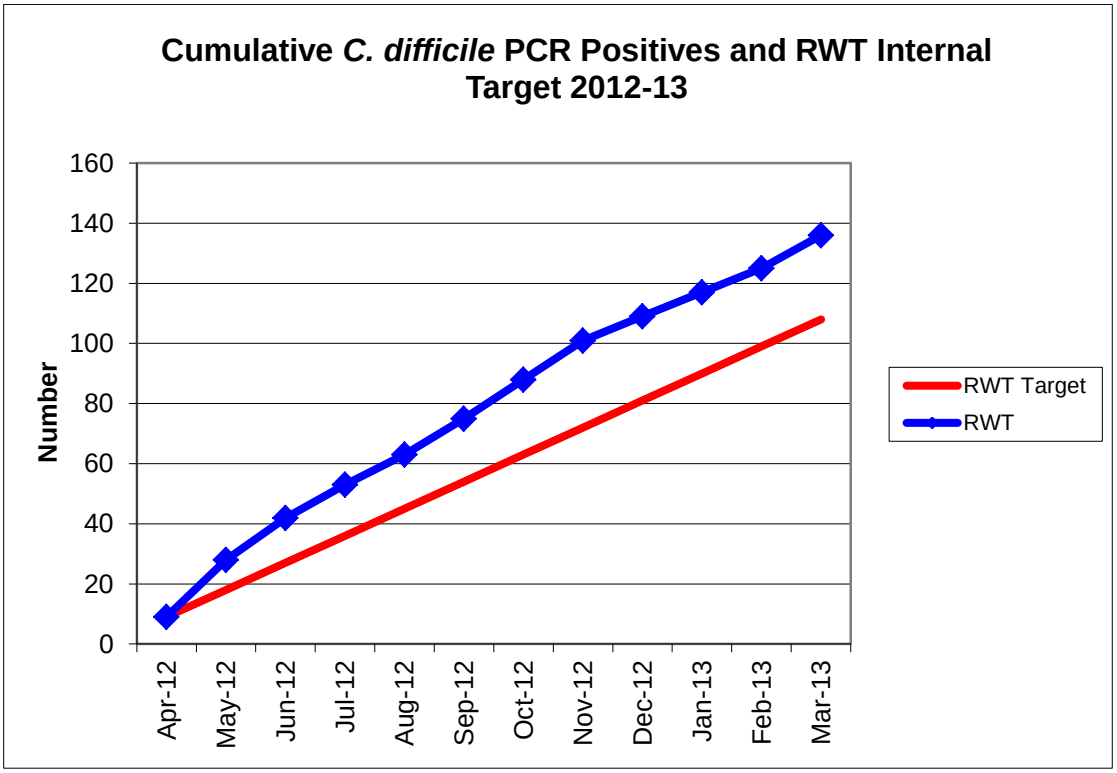
	New Cross toxin positive (target)	West Park toxin positive (target)	W'ton PCT toxin positive (target)	RWT PCR positive (target)
Apr 2012	2 (5)	0 (1)	4 (7)	9 (9)
May 2012	6 (5)	0 (1)	7 (7)	19 (9)
Jun 2012	2 (4)	1 (1)	4 (6)	14 (9)
Jul 2012	5 (5)	2 (1)	10 (7)	11 (9)
Aug 2012	4 (5)	0 (1)	7 (7)	10 (9)
Sep 2012	4 (4)	0 (1)	5 (6)	12 (9)
Oct 2012	5 (5)	0 (1)	6 (7)	13 (9)
Nov 2012	2 (5)	0 (1)	3 (7)	13 (9)
Dec 2012	4 (4)	0 (1)	2 (6)	8 (9)
Jan 2012	2 (5)	0 (1)	6 (7)	8 (9)
Feb 2012	2 (5)	0 (1)	7 (7)	8 (9)
Mar 2012	2 (4)	1 (1)	4 (6)	11 (9)
Totals (Target)	**40 (57)**	**4 (12)**	**65 (80)**	**136 (108)**

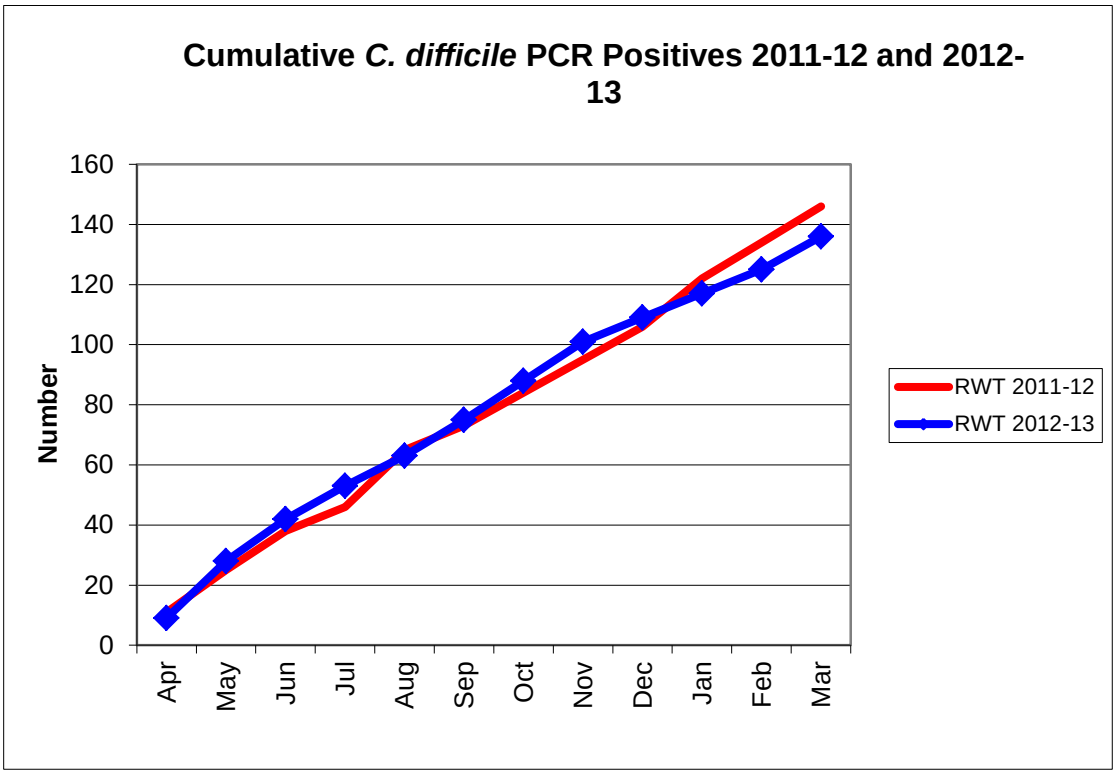
The New Cross and West Park Hospitals and PCT external targets refer to the figures based on the national definition of *C. difficile* cases introduced from April 2012. It can be seen that New Cross, West Park and Wolverhampton PCT all finished the year within their targets. The Wolverhampton PCT figure, however, does not include any patients diagnosed in other laboratories and therefore may not be complete. The targets set for the year 2013-14 are 39 for RWT (including West Park Hospital cases) and 65 for Wolverhampton CCG.



The RWHT Internal Target figure is set against our own definition of attribution which includes patients who have recently been discharged from RWT, and is based on PCR test results, which is a measure of colonisation with the organism and therefore the spread of *C. difficile*, rather than with clinical disease. The target was an ambition based on results from the previous year, when the same testing method was employed. It is a concern that this target was exceeded by over 25%. The second graph below shows the comparison between 2012-13 and 2011-12. The

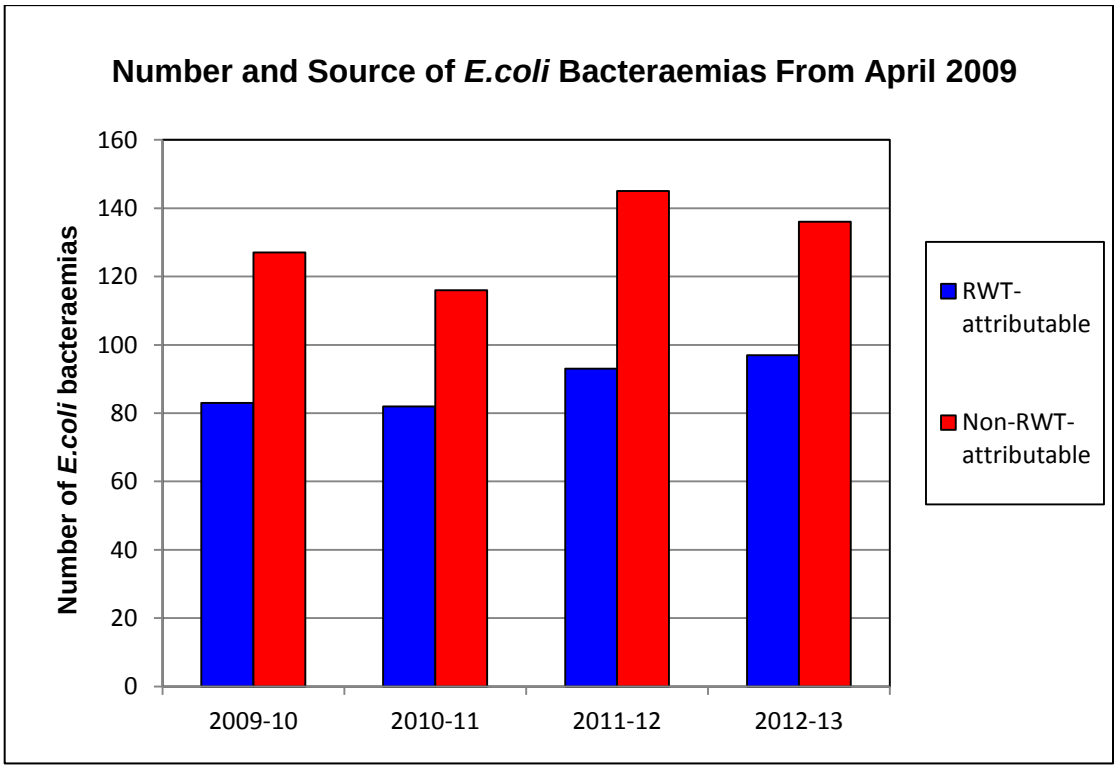
decrease in the total was less than 7%. New strategies are probably needed if this number is to be further reduced.



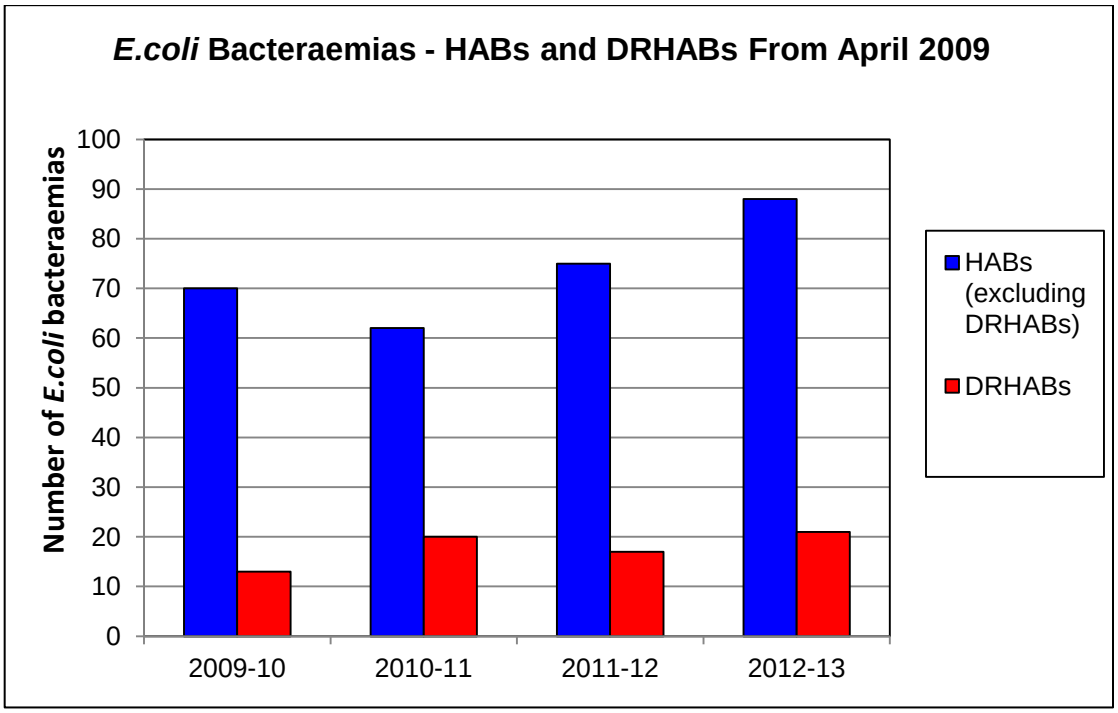


Appendix 7 - *Escherichia coli* Bacteraemias

National mandatory reporting of all *E. coli* bacteraemias began in June 2011, though locally we have robust data from April 2009. The Accountability Framework for NHS Trust Boards states that *E. coli* bacteraemias should be reported as part of each organisation's Quality and Governance indicators. The first graph below gives the annual totals for *E. coli* bacteraemias for those that occurred in RWT in-patients and for those found on admission. The majority of cases are admitted with it.

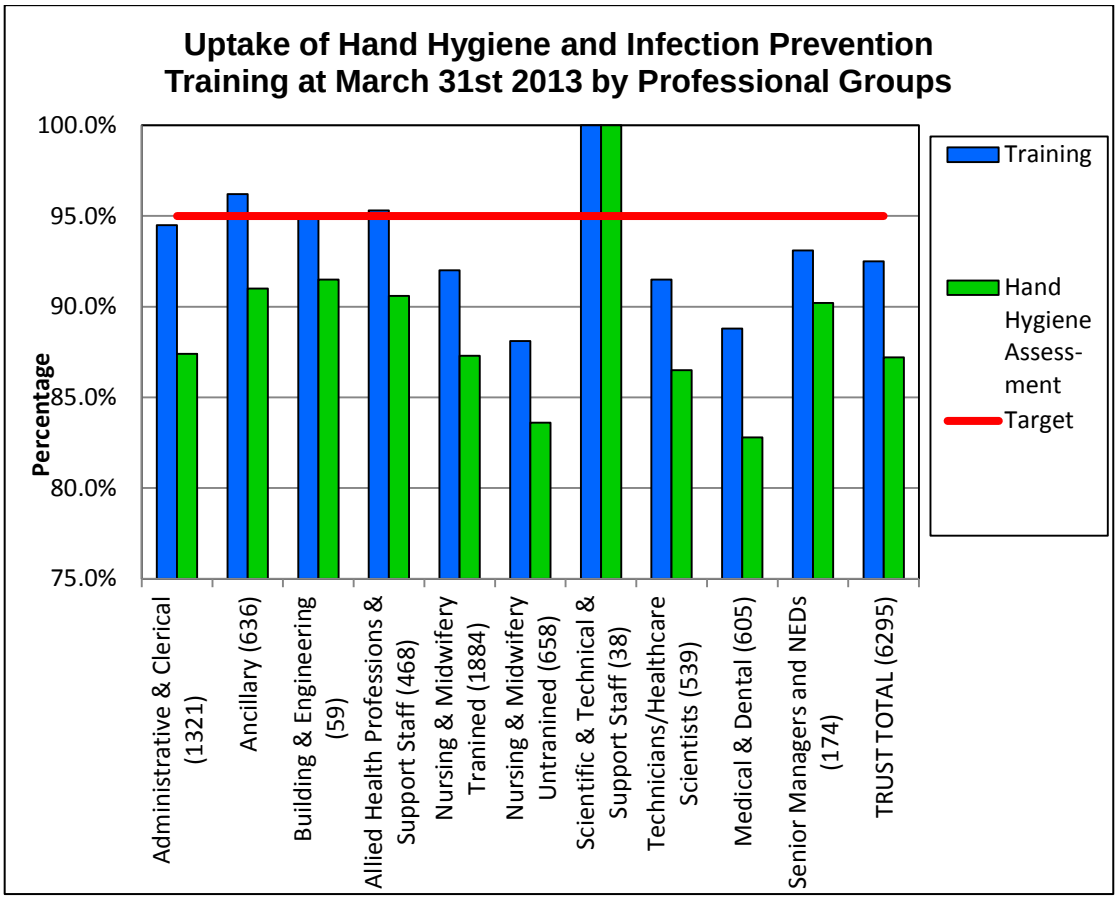


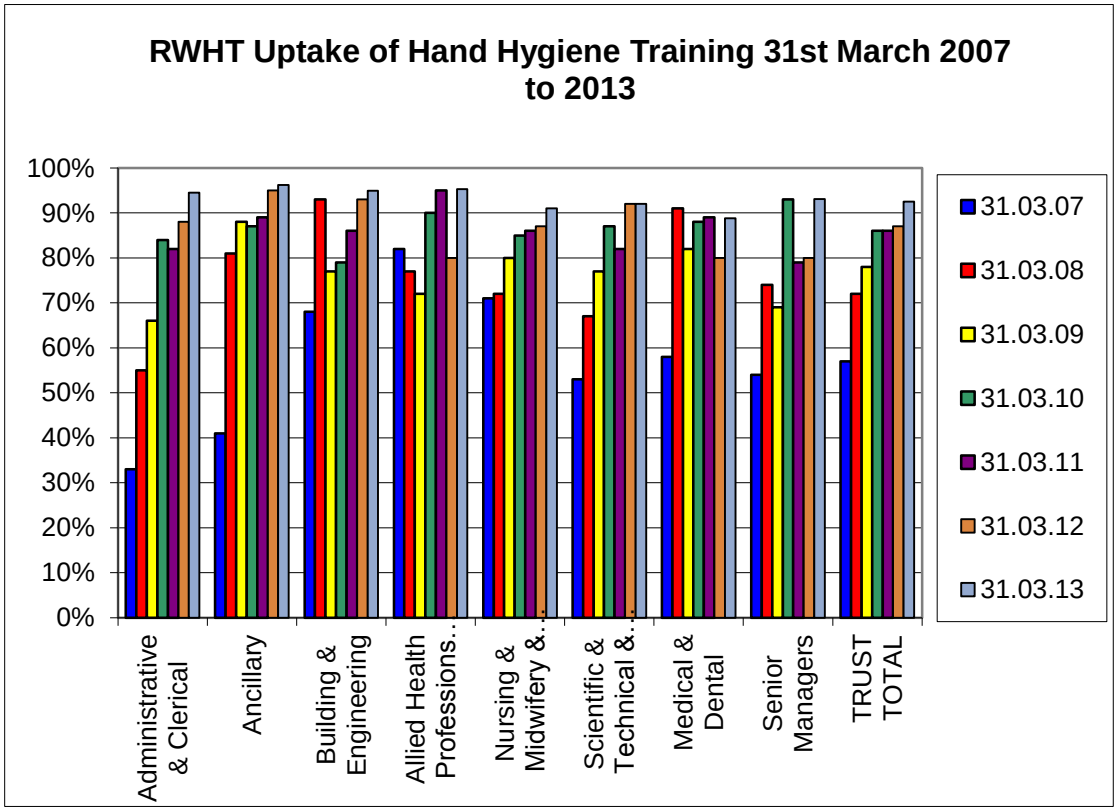
Of the RWT-attributable cases, it is likely that realistically only the DRHAB-related cases are preventable, although it is unlikely that all of these are actually preventable. The second graph shows the number of HABs (excluding DRHABs) and DRHABs for each year for the RWT-attributable cases. This suggests that overall less than 8% of *E. coli* bacteraemias are possibly preventable.



Appendix 8 - Compliance with Infection Prevention Mandatory Training

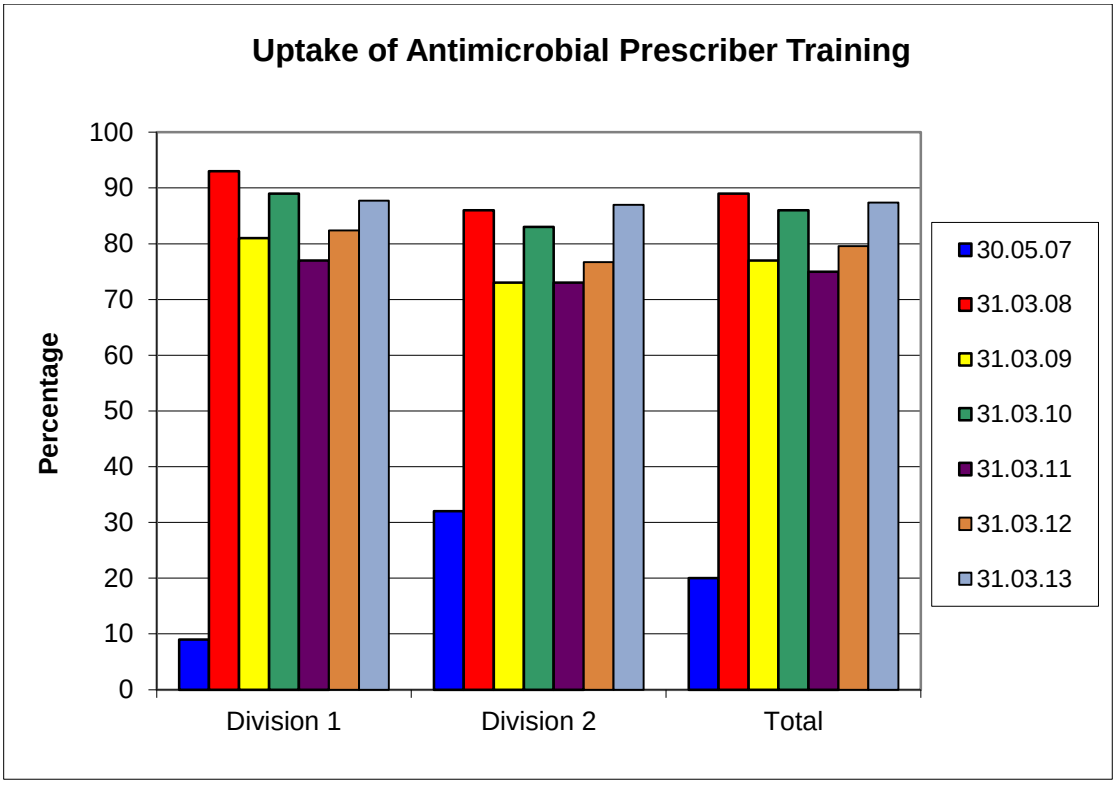
Hand Hygiene and Infection Prevention Training and Hand Hygiene Competency Assessment





NHSLA requires that hand hygiene training compliance is at least 95% to match level 3 requirements. The first graph shows that several staff groups have to improve their training compliance levels to achieve this. Overall compliance was 92.5% at the end of March, which is the lowest since July 2012 and a marked deterioration from the 95.6% achieved in October 2012. Once again, the groups that are potentially the most concerning are 'Medical and Dental' and both of the 'Nursing and Midwifery' groups; it is important the compliance of these groups improves and this improvement is maintained. The second graph, however, shows how the compliance at the end of 2012-13 was higher than has been achieved in any previous years.

Antimicrobial Prescriber Training



NHSLA requires that antimicrobial prescriber training compliance is at least 95% to match level 3 requirements. While the current compliance level is higher than at the end of either of the previous two years, it is still below the 95% target. The Antimicrobial Stewardship Group is exploring different methods of delivering training and assessing competence. Training and compliance with training was a key element of the Antimicrobial CQUIN that the Trust was set this year. The Trust achieved all of the CQIN objectives.

Appendix 9 - Compliance with the Code of Practice for the Prevention and Control of Healthcare Associated Infections (2008)

Criterion 01: Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider how susceptible service users are and any risks that their environment and other users may pose to them.	**HCAI Self Assessment Rating: Green**
Criterion 02: Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.	**HCAI Self Assessment Rating: Yellow**
Criterion 03: Provide suitable accurate information on infections to service users and their visitors.	**HCAI Self Assessment Rating: Green**
Criterion 04: Provide suitable accurate information on infections to any person concerned with providing further support or nursing/medical care in a timely fashion.	**HCAI Self Assessment Rating: Green**
Criterion 05: Ensure that people who have or develop an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of passing on the infection to other people.	**HCAI Self Assessment Rating: Green**
Criterion 06: Ensure that all staff and those employed to provide care in all settings are fully involved in the process of preventing and controlling infection.	**HCAI Self Assessment Rating: Green**
Criterion 07: Provide or secure adequate isolation facilities.	**HCAI Self Assessment Rating: Green**
Criterion 08: Secure adequate access to laboratory support as appropriate.	**HCAI Self Assessment Rating: Green**
Criterion 09: Have and adhere to policies, designed for the individuals care and provider organisations, that will help to prevent and control infections.	**HCAI Self Assessment Rating: Amber**
Criterion 10: Ensure, so far as is reasonably practicable, that care workers are free of and are protected from exposure to infections that can be caught at work and that all staff are suitably educated in the prevention and control of infection associated with the provision of health and social care.	**HCAI Self Assessment Rating: Green**

Actions are underway to achieve full compliance and it expected this will be achieved over the next three months. The areas where we are not fully compliant with relate to the Waste Policy, decontamination and the use of safe sharps.

Appendix 10 - Current Projects and Norovirus Outbreak

IV Team (incorporating OPAT – Outpatient Parenteral Antimicrobial Therapy) – intravenous lines are the single biggest risk factor for RWHT-acquired MSSA bacteraemias and DRHABs. The purpose of the IV Team is to reduce line-related infections to an irreducible minimum and eliminate all avoidable infections related to these devices. Since the introduction of the IV Team (from September 2012), most line-related infections have been in patient groups the IV Team does not directly access (Renal, Haematology and some Oncology), and the number of DRHABs related to lines has not decreased as had been hoped. The experience being gained by the line team is now being used to reduce line-associated infections in these areas. The OPAT work has been a huge success in enabling earlier discharge of patients from hospital, or admission avoidance.

Urinary Catheter Working Group - the second commonest cause of device-related bacteraemias is urinary catheters. The district-wide Urinary Catheter Group is reviewing all aspects of urinary catheter use and care. The aim of this group is to ensure these devices are only used when absolutely necessary and when they are used that they are inserted and used optimally to reduce the risk of infections. The greatest impact is likely to result from a reduction in both the number of catheters inserted and the duration that these devices are left *in-situ*.

Surgical Site Infection Surveillance - the Surgical Site Infection project is underway, collecting data from all appropriate surgical interventions in RWHT and trialling what is considered to be the optimal surgical skin preparation across almost all surgical specialties in the Trust.

Norovirus Outbreak

Norovirus outbreaks hit the UK earlier in the winter of 2012-13 than in the previous year and continued into the Spring. This pattern was seen in Wolverhampton and both RWT and local care homes experienced outbreaks of suspected and proven norovirus. Entire ward closures were rare and the number of beds blocked due to norovirus was kept to a minimum, particularly due to the introduction of in-house molecular amplification testing for norovirus. Extensive use of hydrogen peroxide environmental decontamination was also a key element in the control strategy. Through the support given by the Infection Prevention Team, admissions related to norovirus from affected Wolverhampton care homes were once again minimal this winter.