

Director of Infection Prevention and Control

Annual Report

2014 -15



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1. Executive Summary

This report aims to provide assurance that the Trust is compliant with the criteria of the Health and Social Care Act 2008; Code of Practice on the prevention and control of infections and related guidance.

2014/15 was a challenging year not least due to national Healthcare Associated Infection (HCAI) reduction targets and extended, unanticipated levels of operational activity leading to pressure on all areas of the Trust.

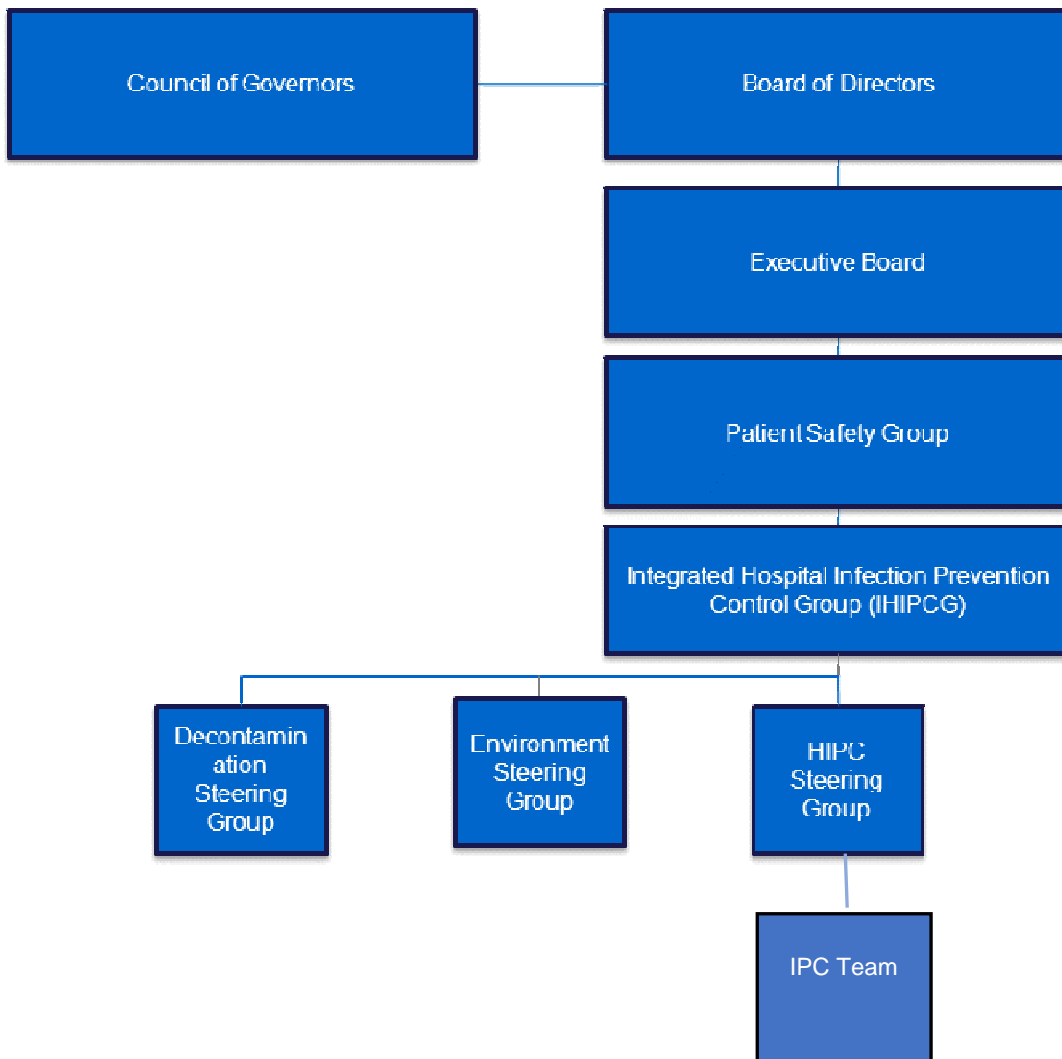
There were 59 cases of *Clostridium difficile* against a trajectory of 59 which was a significant improvement on the previous year. To not exceed this trajectory against operational and staffing pressures reflects the hard work and commitment of Trust staff who strive to deliver the trust values of providing safe care with the best outcome. However the aim in 2015/16 must be to reduce this incidence further.

Unfortunately the same improvements were not seen with MSSA Bacteraemia rates however early indications late in the year following targeted clinical interventions, training and education initiatives begin show a downward trend. There was one case of MRSA bacteraemia at the beginning of 2015 after a period of 527 days.

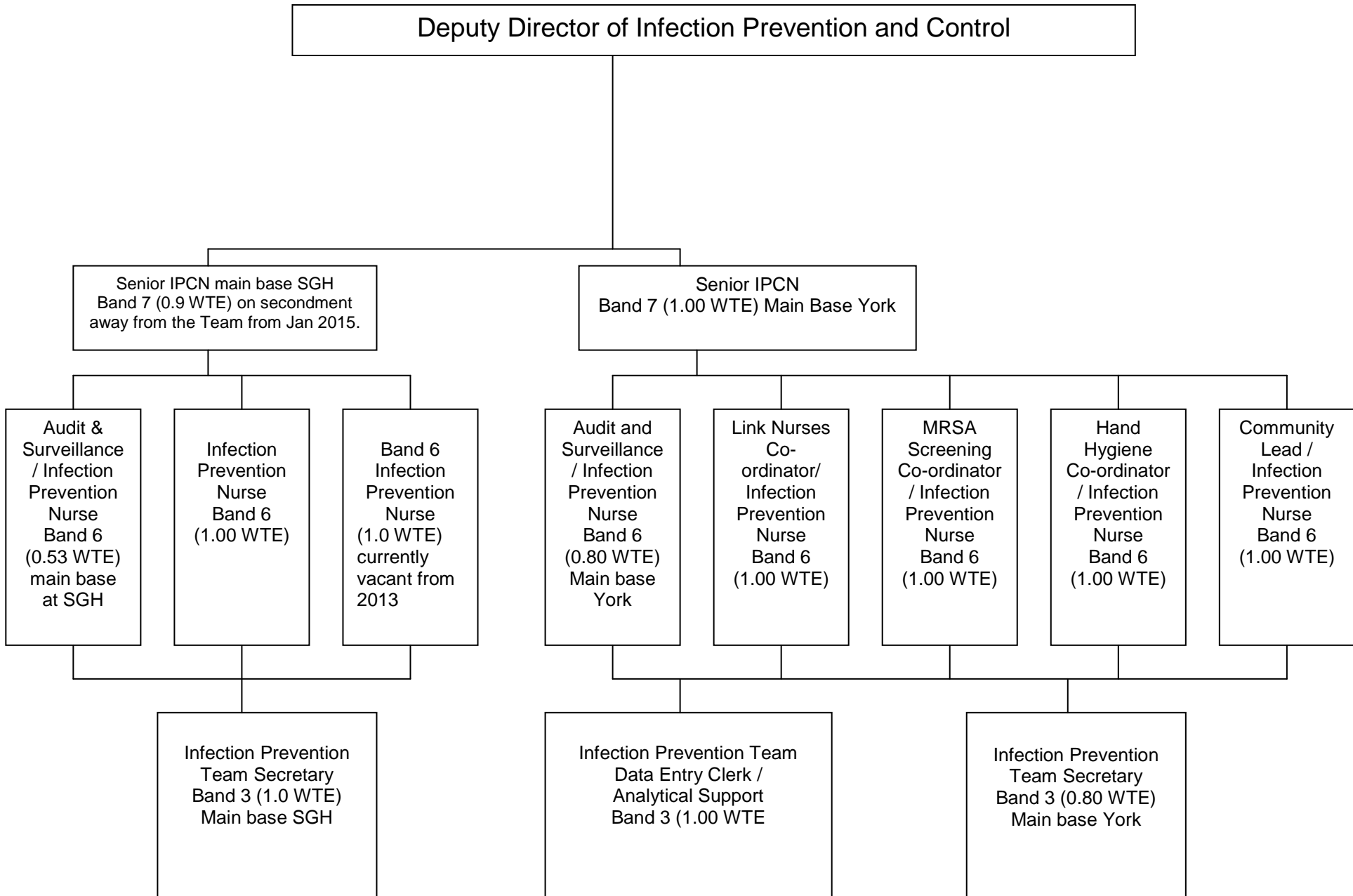
Hand hygiene compliance, following re-education of staff into the application of the WHO 5 moments has begun to establish better understanding and knowledge reflected in audit outcomes with average compliance of 93/95%.

Lack of decant space to enable deep cleaning and high level disinfection in addition to a lack of isolation capacity remain significant risks and gaps in infection in prevention and reduction.

2. Infection Prevention Reporting Structure 2014/15



Nursing Infection Prevention Team Structure 2014/15



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Team Structure

The Infection Prevention Team (IPT) provides a service across the ten Trust sites and to our community staff.

It is delivered and supported by:

Director of Infection Prevention and Control (DIPC) and Chief Nurse

Infection Control Doctor/Consultant Microbiologist

Deputy DIPC

1 Band 7 Operational Lead, Second post to be appointed.

6 Band 6 Operational IPN's

1.4 wte Audit and Surveillance IPN's

2.8 Admin and Clerical support.

The Team is supported by a Principle Pharmacist/Antimicrobial lead, Consultant Microbiologists and Link Workers across all wards and depts.

IP is represented on various forums across the Trust including Capital Planning, Estates and Facilities, Water Safety Committee, Patient Safety meeting, Performance Improvement meetings, Senior Nurse Meeting and Professional Nurse Leader's forum.

The IP Team work to an Annual Plan that incorporates requirements and recommendations of the Health and Social Care Act 2008; Code of Practice on the prevention and control of infections, NICE and relevant experts bodies.

3. HCAI Performance Summary.

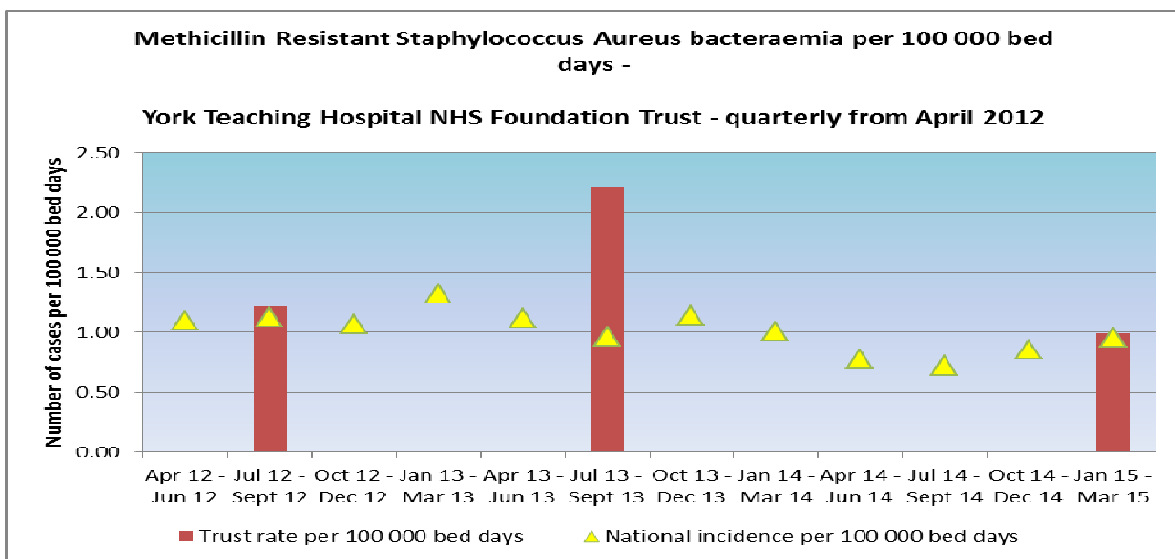
Surveillance of HCAI is carried out to meet Dept of Health mandatory reporting and commissioning requirements of:

- Methicillin Resistant Staphylococcus Aureus (MRSA) Bacteraemia – bloodstream infection*
- Methicillin Sensitive Staphylococcus Aureus (MSSA) Bacteraemia*
- Clostridium difficile infection*

MRSA Bacteraemia - In 2014/15 1 case was attributable to the Trust a reduction on the previous year. Tables 1 and 2 shows quarterly and annual incidence since 2012; Figure 1 and table 2 demonstrate comparative regional and national rates per 100.000 bed days.

| Table 1: Quarterly MRSA Bacteraemia incidence 2012/15 | Apr – Jun 12 | Jul – Sep 12 | Oct - Dec 12 | Jan - Mar 13 | Apr – Jun 13 | Jul – Sep 13 | Oct - Dec 13 | Jan - Mar 14 | Apr – Jun 14 | Jul – Sep 14 | Oct - Dec 14 | Jan - Mar 15 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Attributed to Trust | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| Trust rate per 100 000 bed days | 0.00 | 1.22 | 0.00 | 0.00 | 0.00 | 2.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.99 |
| National rate per 100 000 bed days | 1.10 | 1.13 | 1.07 | 1.32 | 1.12 | 0.97 | 1.14 | 1.01 | 0.78 | 0.73 | 0.86 | 0.96 |

Figure 1



| Table 2: Annual MRSA bacteraemia incidence 2012/15 | 2012-2013 | 2013-2014 | 2014-2015 |
|---|------------------|------------------|------------------|
| Total number attributed to Trust | 1 | 2 | 1 |
| Trust rate per 100 000 bed days | 0.28 | 0.6 | 0.26 |
| Regional rate per 100 000 bed days | 1.3 | 1.13 | Unknown |
| National rate per 100 000 bed days | 1.16 | 1.2 | 0.8 |
| | | | |

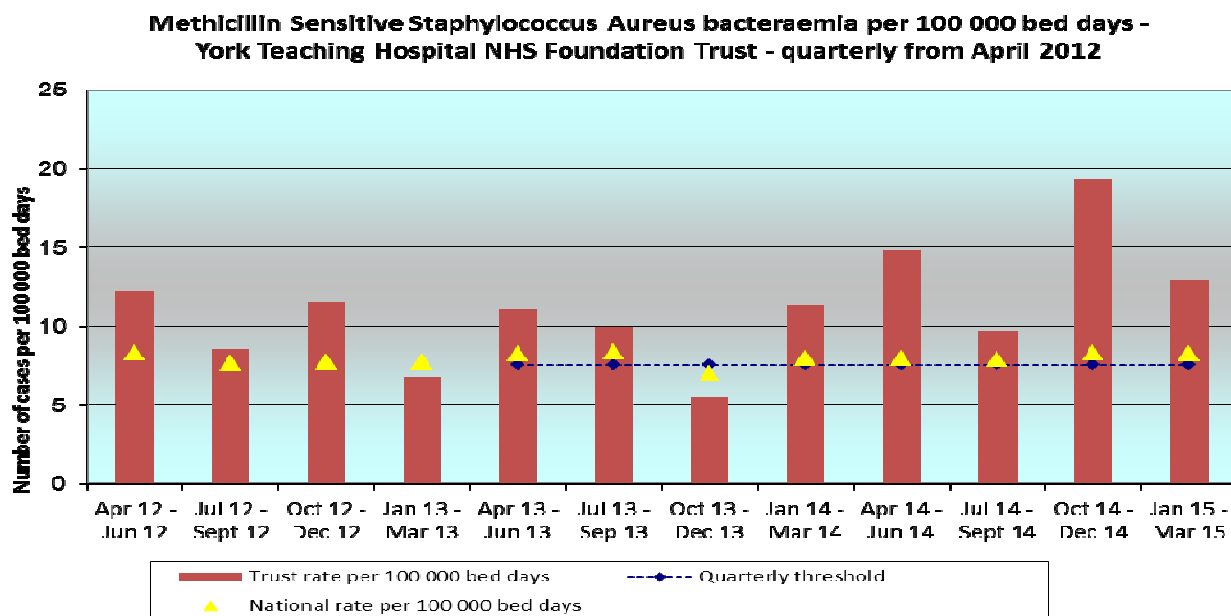
MSSA Bacteraemia – In 2014/15, 55 cases were attributable to the Trust showing an increase on the previous year. Analysis and investigation showed no link or common source however recurring theme from internal PIR carried out by infection prevention highlighted the presence of invasive devices as probable contributory factors for which a reduction strategy has been developed. Objectives focus largely on improving competence and compliance with Aseptic Non Touch Technique (ANTT) in relation to insertion and ongoing care. ANTT is the internationally accepted practice standard for invasive device management the principles of which translate into safe practice. They ensure a standardized approach that ensures best practice optimizing patient safety.

Early indications are that ANTT e-learning, now integral to Trust Statutory and Mandatory required learning for nursing and medical and a series of competency based workshops for registered staff are having a positive impact in reducing incidence.

Tables 3 and 4 shows quarterly and annual incidence since 2012; Figure 2 and table 4 demonstrate comparative regional and national rates per 100.000 bed days.

| Table 3: Quarterly MSSA Bacteraemia incidence 2012/15 | Apr– Jun 12 | Jul – Sep 12 | Oct - Dec 12 | Jan - Mar 13 | Apr– Jun 13 | Jul – Sep 13 | Oct - Dec 13 | Jan - Mar 14 | Apr– Jun 14 | Jul – Sep 14 | Oct - Dec 14 | Jan - Mar 15 |
|--|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
| Attributed to Trust | 10 | 7 | 10 | 6 | 10 | 9 | 5 | 11 | 14 | 9 | 19 | 13 |
| Trust rate per 100 000 bed days | 12.2 | 8.53 | 11.5 | 6.77 | 11.1 | 9.96 | 5.5 | 11.3 | 14.8 | 9.70 | 19.3 | 12.9 |
| National rate per 100 000 bed days | 8.29 | 7.64 | 7.71 | 7.73 | 8.26 | 8.32 | 6.95 | 7.93 | 7.95 | 7.9 | 8.3 | 8.23 |

Figure 2



| Table 4: Annual MSSA bacteraemia incidence 2012/15 | 2012-2013 | 2013-2014 | 2014-2015 |
|---|-----------|-----------|-----------|
| Total number attributed to Trust | 33 | 36 | 55 |
| Trust rate per 100 000 bed days | 90. | 10.9 | 16.6 |
| Regional rate per 100 000 bed days | 8.4 | 9.1 | Unknown |
| National rate per 100 000 bed days | 7.8 | 7.9 | 8.1 |

Clostridium difficile infection (CDI) toxin positive – A successful year in that the Trust achieved its trajectory of 59 cases, a reduction on the previous year. However, the Trust must maintain vigilance and continue to deliver improvements in hand hygiene, sampling, environmental disinfection and antimicrobial prescribing if reduction is to be maintained. Continued monitoring and identification of reduction initiatives through the CDI Operational Group and reduction strategy that consider all potential Organisational risks are key contributors to sustained reduction that remains a priority for the IP Team.

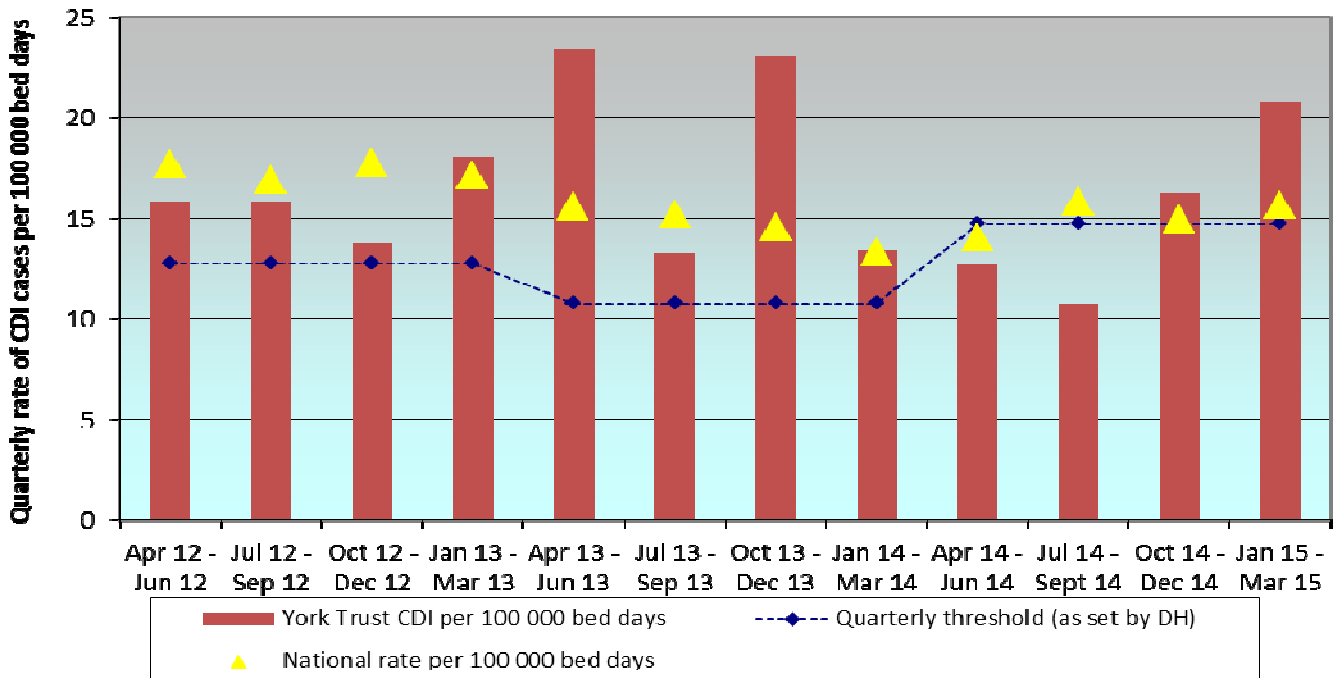
A probiotic – VSL# was introduced in August 2014 with the aim of reducing CDI incidence. The impact and benefit will be evaluated as part of Masters Degree by one of our infection prevention nurses and presented to the Antimicrobial Stewardship Team Sept/Oct 2015. The intention to publish this work will be significant contribution to an equivocal and limited evidence base in relation to the efficacy of probiotic use.

Tables 5 and 6 shows quarterly and annual incidence since 2012; Figure 3 and table 6 demonstrate comparative regional and national rates per 100.000 bed days.

| Table 5: Quarterly <i>C.difficile</i> incidence 2012/15 | Apr – Jun 12 | Jul – Sep 12 | Oct - Dec 12 | Jan - Mar 13 | Apr – Jun 13 | Jul – Sep 13 | Oct - Dec 13 | Jan - Mar 14 | Apr – Jun 14 | Jul – Sep 14 | Oct - Dec 14 | Jan - Mar 15 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Attributed to Trust | 13 | 13 | 12 | 16 | 21 | 12 | 21 | 13 | 12 | 10 | 16 | 21 |
| Trust rate per 100 000 bed days | 15.8 | 15.8 | 13.8 | 18.1 | 23.4 | 13.3 | 23.1 | 13.4 | 12.7 | 10.8 | 16.3 | 20.9 |
| National rate per 100 000 bed days | 17.7 | 16.9 | 17.7 | 17.1 | 15.6 | 15.2 | 14.6 | 13.3 | 14.1 | 15.9 | 14.9 | 15.6 |

Figure 3

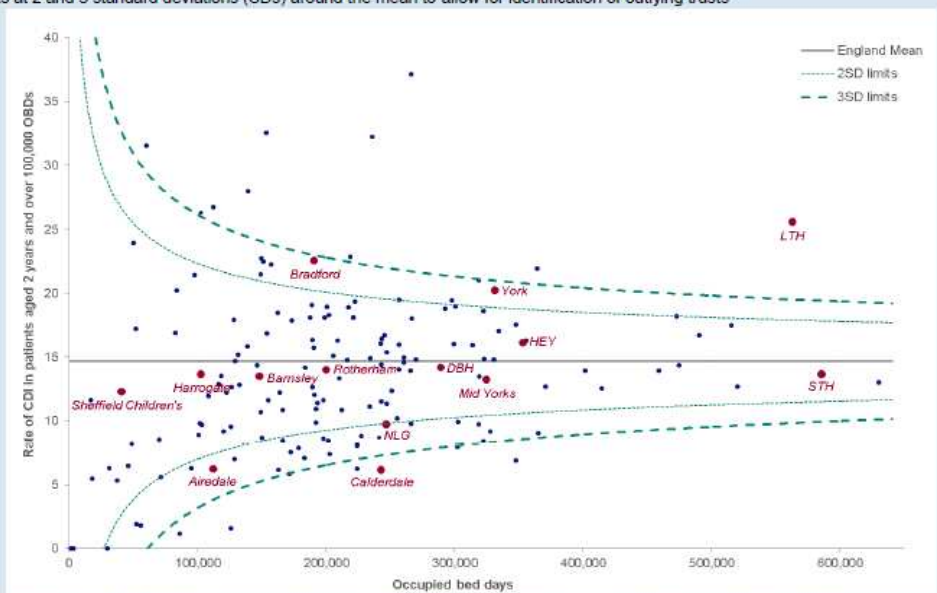
Clostridium difficile toxin positive quarterly incidence (post 3 day cases only) per 100 000 bed days - York Teaching Hospitals NHS Foundation Trust



| Table 6: Annual <i>Clostridium difficile</i> incidence 2010/2/15 | 2012-2013 | 2013-2014 | 2014-2015 |
|---|-----------|-----------|-----------|
| Total number attributed to Trust | 54 | 67 | 59 |
| Trust rate per 100 000 bed days | 15.2 | 20.2 | 17.8 |
| Regional rate per 100 000 bed days | 18.2 | 15.8 | Unknown |
| National rate per 100 000 bed days | 17.4 | 14.7 | 15.1 |

CDI data below from Yorkshire and Humber HCAI annual reports show the Trust to be 2 standard deviations from the mean in 2014/15 (draft) compared to 3 the previous year demonstrating a downward trend.

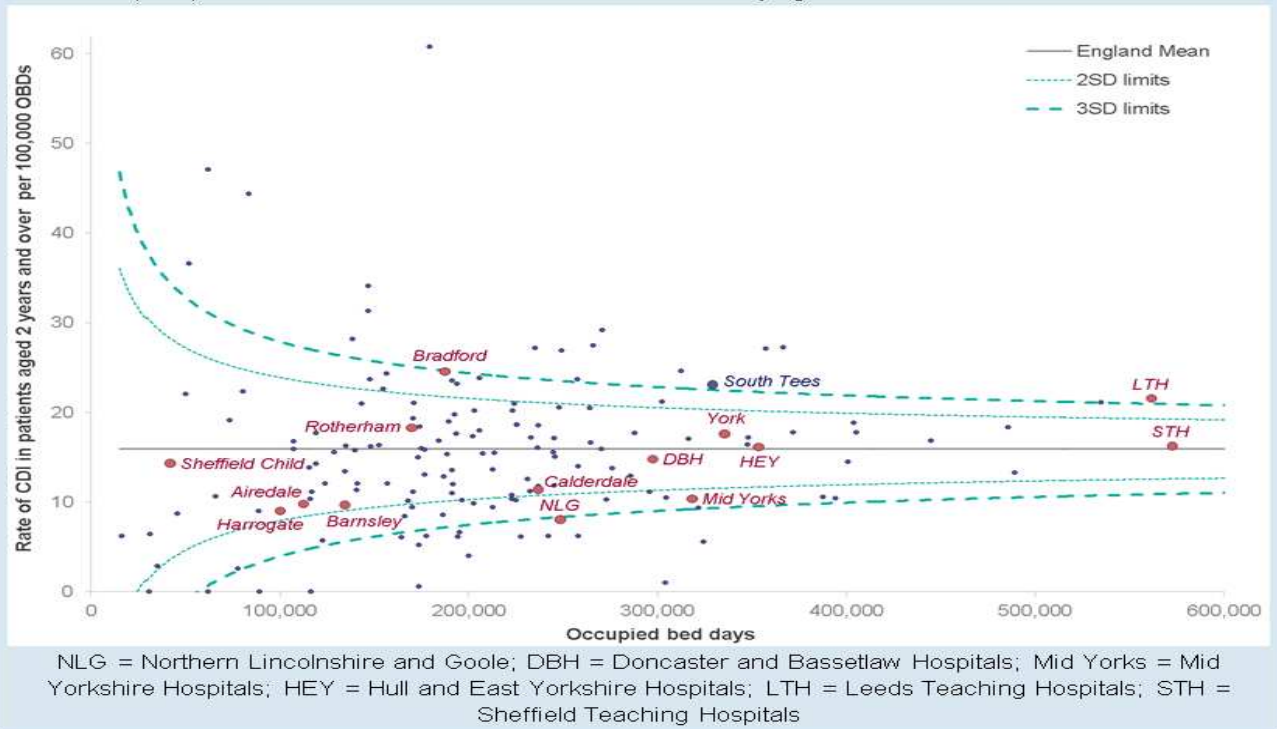
Figure 6: Trust-apportioned *Clostridium difficile* infection (CDI) rates per 100,000 bed days for all England acute NHS trusts in 2013/14
 Source: HCAI Data Capture System, May 2014; Points represent all acute NHS trusts in England. Trusts within Yorkshire and the Humber are highlighted; Dashed lines represent control limits at 2 and 3 standard deviations (SDs) around the mean to allow for identification of outlying trusts



NLG = Northern Lincolnshire and Goole; DBH = Doncaster and Bassetlaw Hospitals; Mid Yorks = Mid Yorkshire Hospitals; HEY = Hull and East Yorkshire Hospitals; LTH = Leeds Teaching Hospitals; STH = Sheffield Teaching Hospitals

Figure 8: Trust-apportioned *Clostridium difficile* infection (CDI) rates per 100,000 bed days for all England acute NHS trusts in 2014/15

Source: HCAI Data Capture System, July 2015; Points represent all acute NHS trusts in England. Trusts within Yorkshire and the Humber are highlighted; Dashed lines represent control limits at 2 and 3 standard deviations (SDs) around the mean to allow for identification of outlying trusts



Outbreaks and Clusters

Annual seasonal Norovirus (winter vomiting virus) outbreaks occurred late in the year with some, but less impact than in previous years on operational and elective capacity. The locking of connecting ward doors to prevent them being used as thoroughfares and a proactive Hydrogen Peroxide Vapour (HPV) high level disinfection programme developed and delivered using a multidisciplinary approach appear to have had significant impact. The programme enabled ward decoration and refurbishment in some areas, necessary to improve the environment and patient experience.

Figures 4 and 5 show the number of ward closures due to Norovirus for the season 2014/15

Figure 4

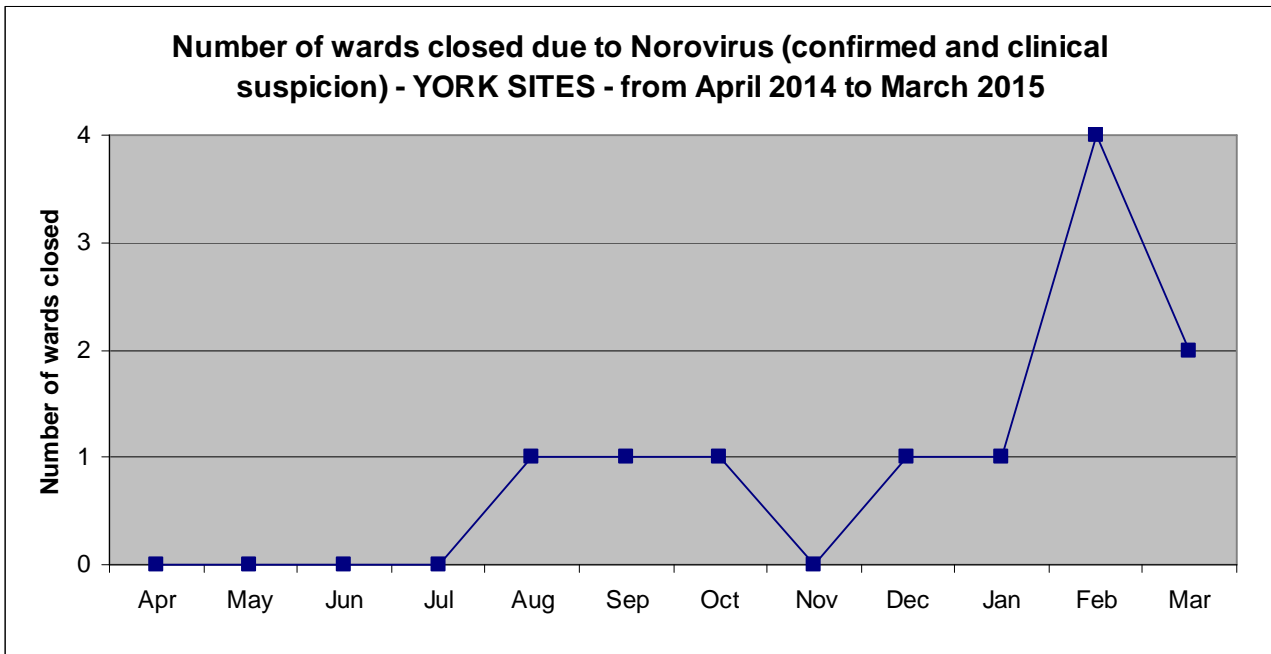
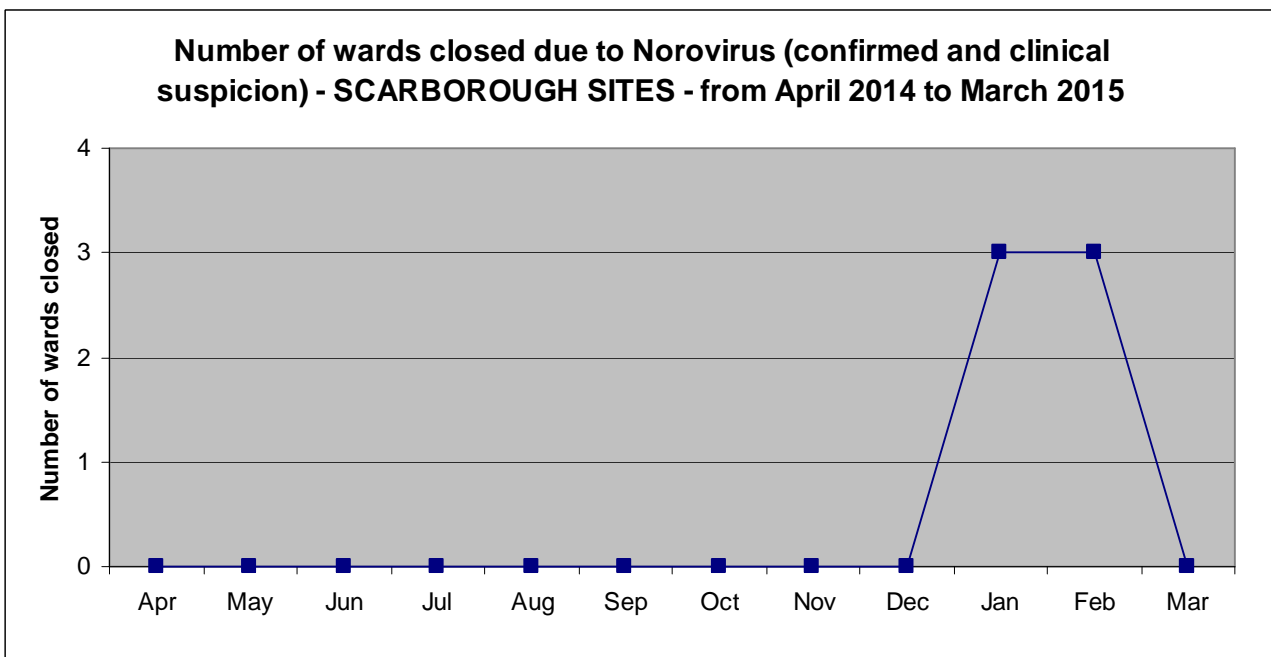


Figure 5



Post infection Review is undertaken for all cases of bacteraemia and CDI. This enables greater scrutiny of cases to identify variation in care and practice. Understanding this generates actions for improvement and quality in patient care/safety.

All patients who develop HCAI are closely monitored and followed up daily by the infection prevention nurses with nursing and when necessary, medical staff.

4. Hand Hygiene

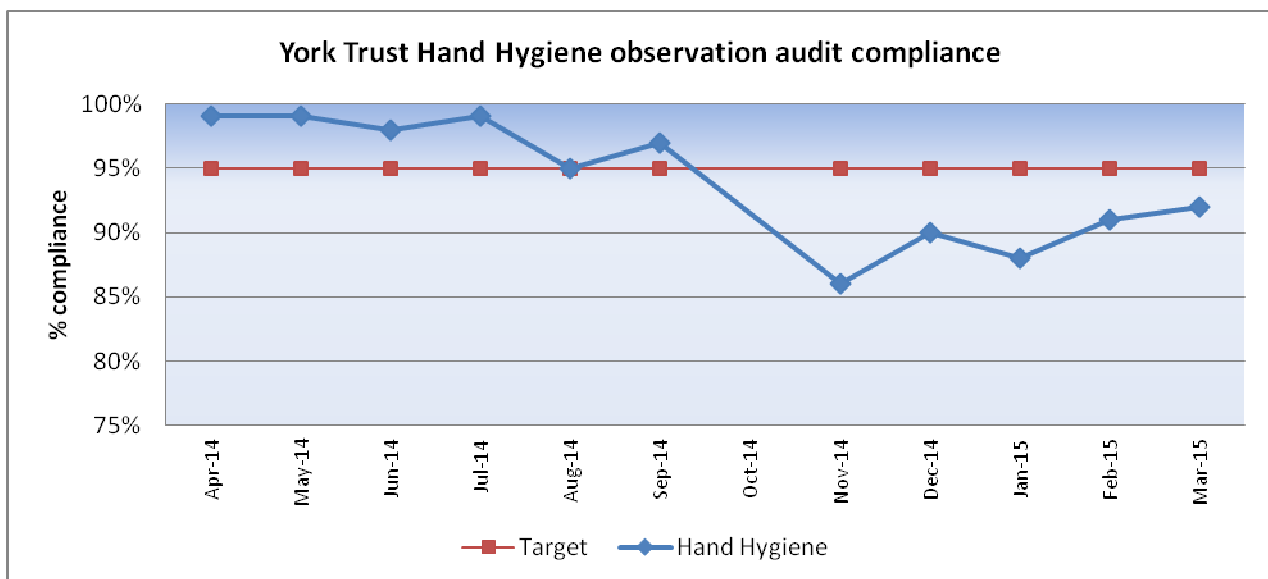
A Trust wide improvement plan implemented during 2014 has led to greater understanding of the World Health Organisation 5 moments for hand hygiene amongst clinical staff. The hand hygiene observation audits have shown consistently improved compliance and less variation in practice across all sites. Actions taken to achieve this include:

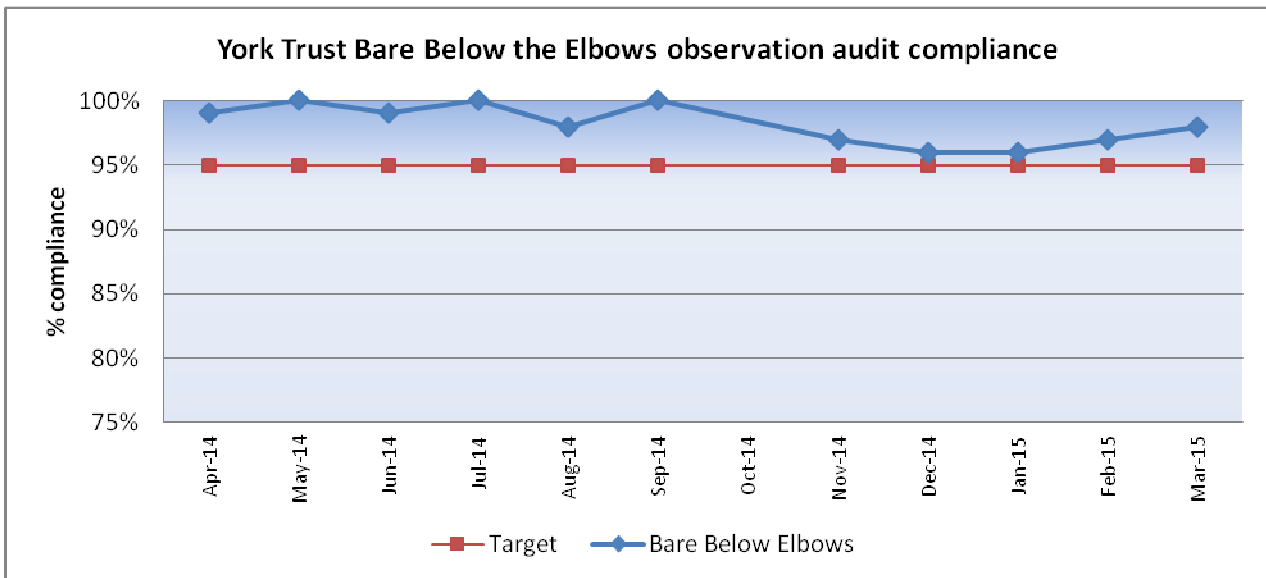
- Revision of the hand hygiene policy/ guidelines
- Revision of the observation audit tool to ensure understanding and consistency.
- Trust wide staff education programme
- Public awareness stands at Trust open days
- Posters to promote easy access to hand wash facilities and inform visitors of the availability and location of hand wash facilities throughout the Trust.

In Nov 2014 the IPT undertook validity testing of the 100% compliance with hand hygiene reporting by conducting an external review that showed actual compliance of 27 – 33%. Our response was to re-evaluate the audit tool and educate staff on how to recognize opportunities for hand hygiene, observe and report accurately.

Subsequent audits demonstrate significant improvement in the quality and accuracy of observation and recording enhancing patient safety and experience.

Data below describes improvements





5. Audit and Surveillance

Audit and surveillance activity continues to monitor and report IP performance internally and HCAI incidence against mandatory requirements of the DH and locally to Commissioners in line with contractual agreements.

IP performance is continually measured against national and local standards/guidance enabling benchmarking, comparison and improvement when required.

Audit and surveillance outcomes are fed back internally to ward/dept leads to support and inform accountability and best practice recommending change/improvement when required.

An Internal Audit Dept report into the management of CDI resulted in significant assurance against 4 key standards and objectives:

- Adequate governance arrangements in place
- Implementation of the Antimicrobial Policy/Formulary
- Implementation of CDI guideline
- Systems in place to ensure compliance is monitored and reported from Ward to Board

6. Policies and Guidelines

All policies and guidelines reflect the requirements of the Health and Social Care Act 2008 (Hygiene Code) and are up to date. Incorporating national/ local evidence, standards and guidance, implementation is by IP audited to monitor and measure compliance that is reported both to users and the Effectiveness Dept to inform change/improvement where appropriate. These are available to all Trust staff via the IP intranet webpage and to the public via the Trust internet site

7. Antimicrobial Stewardship

Monthly antimicrobial audits throughout the Trust continue to show improvement in adherence to the prescribing standards which are as follows:

- All antimicrobial prescriptions shall have an indication recorded on the prescription
- All antimicrobial prescriptions shall have a duration or review date recorded on the prescription

In March 2015 the results for these were 87% and 89% respectively, as compared to 70% and 72% in March 2014. Areas which perform poorly in these audits have had extra input from the antimicrobial pharmacy team to help improve the quality of their prescribing.

Our trial of prescribing of VSL#3 probiotics in conjunction with antibiotics in high risk patient groups is on-going and will be reviewed in Sept 2015

Weekly antimicrobial stewardship ward rounds which include members of the pharmacy antimicrobial team together with microbiology consultants/registrars have proved very successful in reviewing inpatient antibiotic prescriptions.

The Trust participated in the European Antibiotic awareness day in November 2014 with a stand in the main hospital foyer together with promotional materials such as a hospital wide screensaver, quizzes, leaflets and posters. This event was popular with both members of the public and staff and helped to promote our message of safe and effective use of antibiotics.

8. Risk Register

The IP register continues to be subject to quarterly review of risk rating and mitigation through the HIPCG and the Trust Risk Lead.

Risks of 15 and above are discussed with the DIPC via HIPCG and the Trust Risk Lead with consideration as to whether they should be considered for escalation to the Corporate Risk Register.

The most significant risks currently focus on the lack of isolation capacity and the inability to deliver an annual deep clean and proactive HPV programme due to lack of permanent decant space. The Infection Prevention and Control Risk Register can be seen in Appendix 1.

9. Clean Safe Environment

Work streams identified through the Strategic Cleaning Review are progressing and the work in relation to staffing levels and hours has progressed. Staffing have been briefed regarding potential changes to working patterns which will Work continues through the Strategic Cleaning Review reports and recommendations to ensure that available Domestic services resources are in the right place at the right time which will ensure that the Trust maintains effective and efficient cleaning arrangements throughout its properties.

An internal audit of cleaning services across the Trust was undertaken during July 2015. The object of the audit was to provide assurance to management, the Board and the Audit Committee that the Trust has effective systems and processes in place to ensure the expected standards of cleaning are met.

The audit established the Trust has effective systems and processes in place to ensure the expected standards are met.

It was acknowledged that cleaning across the Trust is currently undergoing a significant review and recommendations within the audit are being addressed as part of the review. Significant assurance was therefore given.

Facilities continue to work closely with Infection Prevention and Matrons to ensure provision of a clean and safe environment is that of every individual and is embedded as routine best practice.

The Scarborough Environment Steering Group (ESG) continues to meet and is still key to initiating significant environmental improvements to enhancing patient and staff experience.

The York ESG was reconvened prior to the CQC inspection and will continue to meet on a planned basis.

Patient Led Assessments of the Care Environment (PLACE) were undertaken on all in-patient sites between 3rd March and 17th April 2015. The National average for the cleanliness element of the assessment was 97.25%, the Trust average was 99.54%. This was 0.09% lower than 2014 however seven out of our ten sites achieved 100%.

As in 2013, the enhanced cleaning questionnaire for Domestic Assistant's was repeated. This is a set of questions aimed at assessing the knowledge and understanding of the cleaning and disinfection process by Domestic Assistant's when using Chlor clean. This was further supported by refresher training to ensure the competency and consistency of cleaning.

Working with the provider of our disinfectant wipe system IP developed and delivered the `Wipe Out` campaign to nursing and domestic staff. Aimed at improving cleaning/ decontamination processes in the clinical environment, the programme enhanced awareness of the importance of the contribution of effective cleaning in preventing environmental sources of infection.

Hydrogen Peroxide Vapour (HPV) Disinfection - During the period 01/04/2014 to 31/03/2015 **500** HPV deployments were carried out across the Trust of the 500: **285** were reactive (following infection incidents) and the remaining **215** were proactive (planned)

A fully established HPV team was in place by the end of 2014 offering 12 hour cover over 6.5 days per week (Mon - Sat + 1/2 day Sun)

Over that time successful proactive programmes have been carried out at both York and Scarborough with infection control and bed managers playing a major role in making these successful.

Maximum deployment of the service is compromised by lack of permanent decant space on both sites a resource key to maintaining high level disinfection essential to eradication of environmental reservoirs of infection.

10. Patient Information

Patient information in relation to HCAI is available on the Trust internet and intranet sites. Information leaflets regarding specific HCAI are given to patient/relatives on diagnoses fulfilling the requirements of NICE guidance and the Health and Social Care Act 2008; guidance on the prevention and control of infection

11. Education and Training

To increase uptake of training and improve access for all staff groups we have developed a set of e-learning packages. This comprises of a series of scenario based questions and rag rated answers. When a candidate responds, they are taken to a rationale of why their answer is correct (green) mostly correct (amber) or wrong (red) thus even for incorrect responses learning is taking place. We have recently been asked for permission by Corporate Learning and Development to share our particular training resource between other trusts in the region and also a hospital in Lancashire Following introduction of e-learning in 2014/15 our compliance has jumped from <50% to being in the green across the board.

| | | | |
|---|------|------|-----|
| Infection Prevention and Control Level 1 | 5104 | 4474 | 88% |
| Infection Prevention and Control Level 2 (Theory) | 4040 | 3447 | 85% |

PIR outputs:

Invasive device management and variation in compliance with antimicrobial prescribing were a recurring themes identified at Post Infection Review in relation to CDI and bacteraemia incidence. Raising awareness through ward based teaching, PNLF and F2 training days appear to be initiating a downward trend however e-learning and competency based training are being developed for early 2015/16 in relation to ANTT with the aim of expediting further reduction. Feedback of the audit of compliance with antimicrobial prescribing is generating greater awareness and engagement from clinicians in adopting good prescribing and stewardship.

12. Link Worker Network

104 staff are designated IP link workers across the Trust which includes nursing and allied health professionals.

Bi-monthly meetings continue at both York and Scarborough with an average attendance of between 6 and 12 attendees reflecting the constraints of frontline pressures acknowledged across the NHS impacting on the ability of staff to be released from clinical areas to access specialist training and educational opportunities outside of Statutory and Mandatory that support best practice and professional development. The Trust is working hard to address this through staffing and recruitment initiatives.

Topics covered

- Water Safety
- Carbapenemase Producing Enterobacteriaceae
- Respiratory virus presentation.
- Practical session on use of PPE
- Training of the GAMA Healthcare 'Wipe Out' Campaign commissioned by the IPT to update clinical and domestic staff on current best practice in relation to the systems and processes required to maintain a safe clean environment
- The Chain of Infection
- HCAI trajectories, performance and responsibilities
- Update on Hand Hygiene and revision of the WHO tool to improve understanding of and compliance with the 5 key moments.
- Update and discussion on Influenza
- Detailed discussion on ANTT practice workbook and e-learning.
- Urinary catheter management delivered by specialist company incorporating ANTT

13. Conclusion

Over the period 2014/15 we have had to adapt ever more to the changing nature of the organisation in terms of client base, activity and capacity. Our bed occupancy continues to increase, as does the number of complex procedures undertaken. Our patients are more vulnerable requiring more medical intervention and antimicrobials. We must therefore, continue to review acutely prevention and control measures and invest more in a proactive approach with regard to Infection Prevention from Board to Ward.

We also continue to reinforce good prescribing practice along with the introduction of probiotics. We continue to improve our investigative and review processes for HCAI to ensure that we can ascertain learning points and form action plans to prevent risk and variation in practice that create the potential for harm from avoidable infection.

HCAI incidence for 2014/15 was - MRSA bacteraemia 1 case against a de-minimus of 6 set by Monitor but national zero tolerance by DH; MSSA bacteraemia 55 cases against a local trajectory of less than 30 cases; *C.difficile* 59 cases against a national trajectory of 59.

Significant challenges remains in relation to isolation capacity and lack of permanent decant space on both acute sites to enable annual deep cleaning and a proactive programme of high level disinfection (HPV) to reduce and eliminate environmental reservoirs of infection. The HPV service is now fully resourced and should be facilitated and supported to deliver what is a key control measure in achieving sustainable reduction in HCAI experienced by more successful Trusts. Reactive deployments with daily review of proactive HPV opportunities by Bed Managers and the HPV team afford some degree of mitigation. Whilst risk assessment on a case by case basis when competition occurs for isolation rooms enables the planning of safe management of HCAI, it also means that patients are moved out of isolation sooner than is best practice.