

Report to Trust Board of Directors

Date of Meeting:	2 June 2015
Enclosure Number:	19
Title of Report:	Director of Infection Prevention & Control Annual Report 2014/15
Author:	Dr Clive Graham
Executive Lead:	Ann Farrar
Responsible Sub-Committee (if appropriate):	Infection Prevention and Control Committee
Executive Summary:	<p>It has been a challenging year for Infection Prevention and Control with significant norovirus outbreaks to attend to, a recall incident with Endoscopy and although we achieved our Clostridium difficile trajectory numbers were up on 2013/14 outturn.</p> <p>Appointment of the substantiate matron role has brought greater stability to the team and we need to build on the changes implemented following the norovirus outbreak to improve infection prevention standards across the Trust especially at ward level.</p> <p>The Service Improvement Plan is not included as it is elsewhere on the agenda.</p> <p>Key Risks</p> <ol style="list-style-type: none"> 1. Need to implement improvements in design/layout on Cumberland Infirmary site to mitigate risks of future norovirus outbreaks 2. Need to improve cleaning standards to implement BIS 2014 standards 3. Achieve Clostridium difficile trajectory for 2015/16
Risk Rating (high, medium, low risk) and any recommended changes to risk rating:	Medium
Board Assurance Framework Reference:	7.1

Compliance, legal and national policy regulatory requirements:	the Health and Social Care Act 2008: Code of Practice for the Prevention and Control of Infections	
Financial Implications:	None	
Actions required by the Board:	To approve:	Discussion and decision
	To note:	Where the Board is made aware of key points but no decision required
	For information:	For reading and consideration and for discussion by exception only
	To note	
Data quality:	Source:	
	Validated by:	
	Date:	

TRUST BOARD

**ANNUAL REPORT FOR
INFECTIOUS PREVENTION & CONTROL
2014-2015**

JUNE 2015

1 INTRODUCTION

High standards of infection prevention and control are a fundamental part of the care delivered within the Trust. This paper presents the annual report for infection prevention and control and highlights compliance with strategic option 1; “*ensure we provide high quality, safe and effective care for all our patients including meeting essential standards of safety and quality as set out by the Care Quality Commissions (CQC)*”.

2 COMPLIANCE WITH THE HEALTH & SOCIAL CARE ACT 2008: CODE OF PRACTICE FOR THE PREVENTION & CONTROL OF INFECTIONS

The work undertaken over the past year listed below demonstrates the Trust’s compliance with the Health and Social Care Act 2008: Code of Practice for the Prevention and Control of Infections and related guidance which includes;

- Improve governance in Estates and Facilities by using permit to work system to ensure compliance with IP precautions amongst contractors working on site
- Improved monitoring of surgical site infection through the appointment of 2 surgical site surveillance nurses
- Improved assessment of deep seated surgical site infections in orthopaedic surgery through Root Cause Analysis
- Implementation of the Acute trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae
- Improved urinary catheter and peripheral venous catheter audits using AuditR
- Greater use of Infection Prevention Society Audits to support improvement in IP practice
- Permanent appointment made to Infection Prevention matron role
- Greater use of Healthcare Assistant role in supporting audit and other activities of Infection Prevention Team
- There has been a number of development sessions for the Infection Prevention Team and there is now much greater cross site working
- Ongoing development of weekly HCAI meetings to review all *Clostridium difficile* cases and other healthcare associated infection issues
- Provide support and advice to the New Hospital project team at WCH

3 TRUST POLICIES

The following Trust policies have been updated:

- Carbapenemase Producing Enterobacteriaceae (CPE) Policy
- Immunisation of Staff
- Infection Prevention and Control Structure Policy and Procedure
- Clostridium Difficile - prevention, control and management of policy
- Infection Prevention and Control - Isolation Policy
- Infection Prevention and Control Standard Precautions Policy for NCUHT
- Aseptic Technique Policy
- Immunisation of Service Users
- Cleaning and Decontamination of healthcare Equipment

4 MRSA & CLOSTRIDIUM DIFFICILE

In terms of Clostridium difficile we have seen an increase from last year's outturn although we did achieve our external trajectory of 37 cases or less and remain at a significantly better position than we were in 2012/13. Although we had a full calendar year without an MRSA bacteraemia we had one right at the end of the financial year.

- In March 2015 we had our first Trust apportioned MRSA bacteraemia case since October 2013, it is now over 5 years since we had an apportioned MRSA bacteraemia on the West Cumberland Hospital site.
- We had an increase in the number of Trust apportioned *Clostridium difficile* infections with 36 apportioned cases in 2014/2015 against 24 cases in 2013/14 and 56 cases in 2012/2013.

5 CHALLENGES FOR 2015/2016

For 2014/2015 the IPC team have identified the following challenges:

- To have no MRSA bacteraemia cases in 2015/16
- To reduce Trust apportioned Clostridium difficile infections and meet the target set for 2014/2015 (25 cases)
- Continue to embed high standards of infection prevention within both clinical and non-clinical areas
- To ensure the IP team are a visible presence within the Trust
- To provide support to the new build at West Cumberland Hospital site including moving into the new build.
- To promote and develop a Health Economy approach to Infection Prevention and Control
- To reduce the number of Surgical Site infections
- To ensure we have high cleaning standards Trustwide
- To ensure we complete all design changes (bay doors and modification to dirty utility areas) to support high standards of infection prevention
- To continue to implement a robust antimicrobial stewardship programme

6 INFECTION PREVENTION AND CONTROL ASSURANCE ARRANGEMENTS

The Associate Medical Director (AMD) for Safety and Quality was appointed as Director of Infection Prevention and Control (DIPC) in April 2013, although the DIPC from Northumbria NHS FT temporarily took over this role, the role reverted to the AMD. The Infection Prevention Committee meets monthly and is now chaired by the Chief Executive.

Reports are received by the Safety and Quality Committee on a monthly basis, the DIPC has also reported to the Trust Board in relation to Norovirus Outbreak furthermore will be regularly reporting to Trust Board regarding the Service Improvement Plan to ensure the actions identified are implemented in a timely manner. The Safety and Quality Committee also receives reports from each Business Unit which includes information on Hand Hygiene scores and Health Care Associated Infection.

The monthly monitoring of the Trusts infection prevention and control performance was transferred to the commissioning arm of NHS Cumbria in April 2009. This has now transferred to the Clinical Commissioning Group and monitoring of the Trust's performance has been through the routes outlined below:

- Inclusion of the Infection Prevention (IP) Lead Nurse for NHS Cumbria in the circulation list of the weekly HCAI meeting
- Review of all *Clostridium difficile* cases with IP Lead Nurse for NHS Cumbria to assess if any lapses in care identified during the post infection review process
- Audits of Infection Prevention measures by IP lead during outbreak situation
- Inclusion of the Infection Prevention Lead Nurse for NHS Cumbria in the Trust Infection Prevention Committee
- Close working relationship between the Consultant Microbiologists and IPC nursing teams across the Health Economy
- Discussion and monitoring of all Post Infection Reviews (PIRs) in relation to MRSA bacteraemia for both apportioned cases and non apportioned cases.
- Escalation of all *Clostridium difficile* deaths (where listed on death certificate) to Serious Untoward Incidents.

7 MRSA

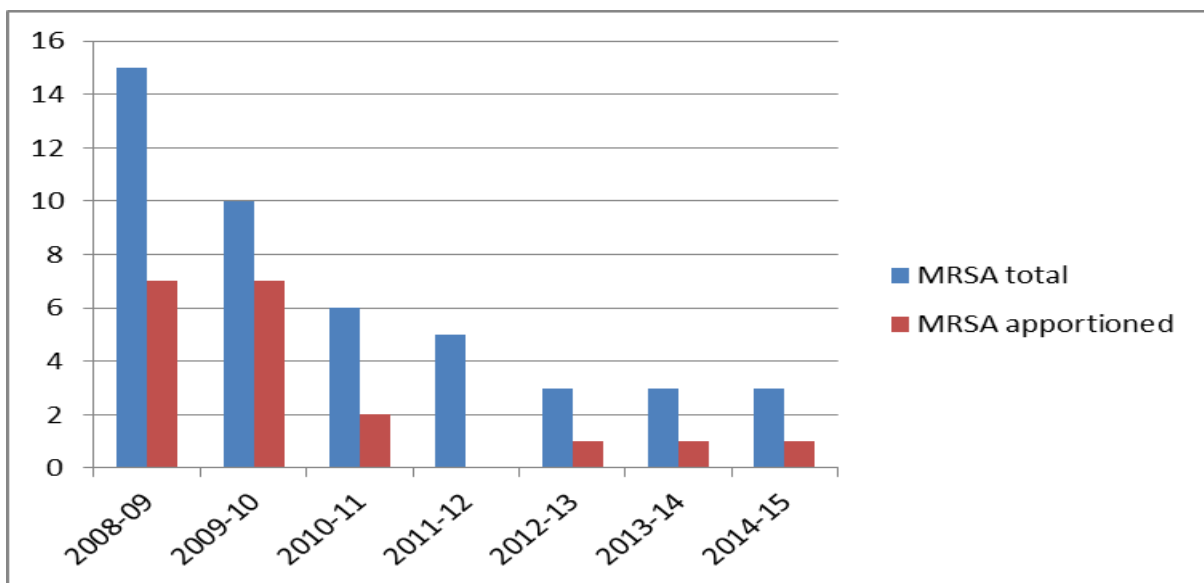
We continue to use a much more robust tracking system for MRSA screening which was noted to be an issue with the non-Trust apportioned MRSA cases furthermore an electronic alert system (SBAR) has been introduced so the Infection Prevention Team can track cases within the Trust more easily.

The trajectory figure for the Trust was to have zero apportioned bacteraemias for 2014-2015. We had a single case that occurred in March 2015, this was 18 months after our last case which was in October 2013.

The total number of cases and the number of apportioned MRSA cases remains unchanged from 2013-14. It should be noted that it is over 5 years since the last Trust apportioned MRSA bacteraemia case on the West Cumberland Hospital site.

The one apportioned case in 2014/15 has undergone a post infection review and this has been submitted to Public Health England. It involved an elderly lady who was admitted with falls probably due to postural hypotension, she subsequently was identified as having possible septic arthritis and later died due to a probable bowel malignancy. The MRSA bacteraemia was identified shortly after admission but outwith the time interval for a community-acquired case, although no contributing issues were identified other areas of improvement were identified, these included:-

- Commencing IV antibiotics prior to taking blood cultures
- Poor cannula documentation
- Failure to do hand hygiene audit
- Poor cleaning audit scores

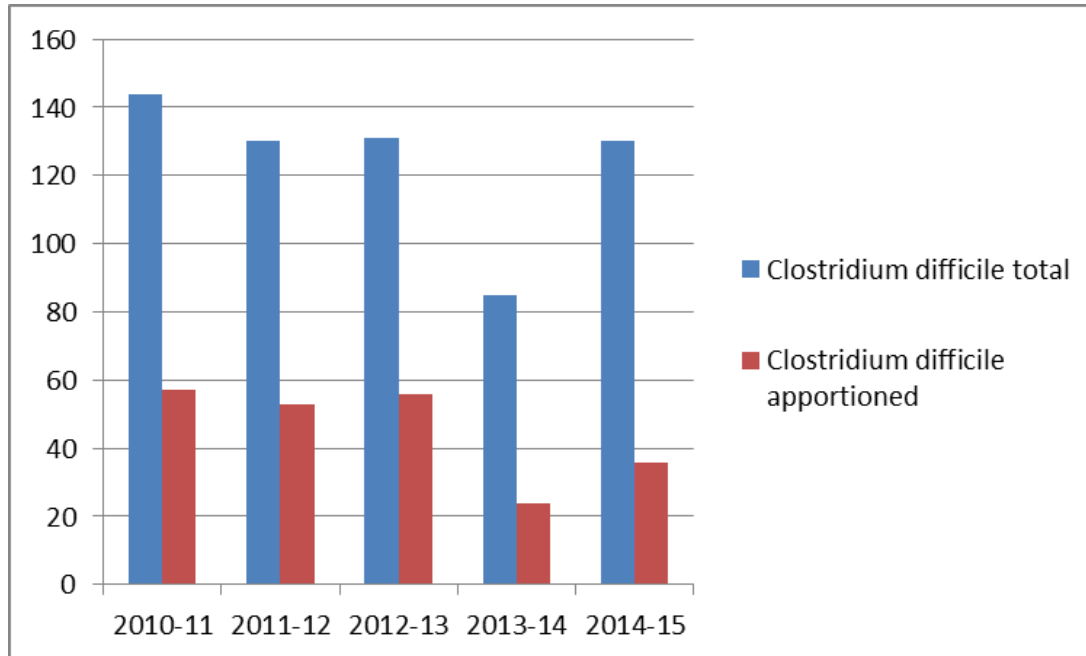


Although it is disappointing to have a single case we are likely to remain better than the national average.

Year	Number of Cases	Number of Cases by site	Rate per 100,000 bed-days	National average rate per 100,000 bed days	Performance
2012/13	1	CIC – 1	0.5	1.2	Better than national average
		WCH -0			
2013/14	1	CIC – 1	0.5	1.1	Better than national average
		WCH – 0			
2014/15	1	CIC – 1	0.5 (est)	N/A	Likely to be better than national average
		WCH - 0			

8 CLOSTRIDIUM DIFFICILE

The trajectory figure for the Trust was not to exceed 37 apportioned Clostridium difficile infections in 2014-15. This target was met with 36 Clostridium difficile infections during this time period; the number of cases has significantly fallen since the 56 cases we had in 2012-13 but is greater than the outturn for 2013-4; we also noted a 25% increase in testing in 2014-15. Our trajectory for 2015-16 has been set externally at 25.



The above figures for 2014-15 have been independently audited.

Comparative national data is given below.

Year	Number of Cases	Number of Cases by site	Rate per 100,000 bed-days	National average rate per 100,000 bed days	Performance
2012/13	56	CIC – 43	30.6	17.3	Worse than expected
		WCH -13			
2013/14	24	CIC – 21	12.6	14.7	Better than national average
		WCH -3			
2014/15	36	CIC - 27	18.9 (est)	N/A	On trajectory but worse than average
		WCH - 9			

Although part of the above increase can be explained by the 25% increase in testing we have recognised that additional control measures are required. One ward which contributed a quarter of our cases in 2014-15 is running a pilot study with a different

antibiotic policy to the rest of the Trust; patients are switched on admission to the ward if already on antibiotic therapy. There is evidence to indicate that this switch may result in a reduction in antibiotic associated diarrhoea as well as Clostridium difficile infection.

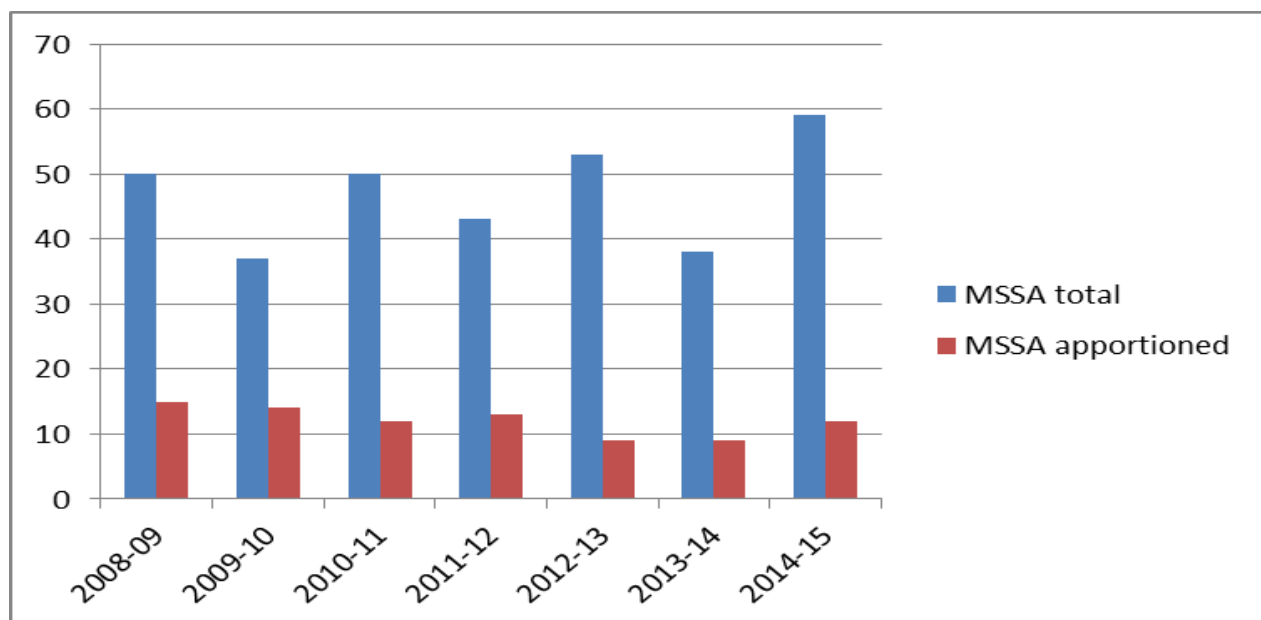
Furthermore on the back of the norovirus outbreak we have identified additional need to improve cleaning, this will be Trustwide and include rationalisation of cleaning products between sites and Trustwide standardisation to BIS 2014 standards.

Clostridium difficile outcome data

During 2014-15 there were 120 patients in total across the Health Economy (all relapses are excluded (130 episodes in total)) of these 19 died within 30 days of diagnosis (15.83 % all-cause mortality rate) which is a lower mortality rate than reported in a recent 4 centre study (16.6%) and lower rate than 2013-14 but a greater number of cases overall.

9 METHICILLIN-SUSCEPTIBLE STAPHYLOCOCCUS AUREUS (MSSA)

Reporting on MSSA bacteraemias to the Safety and Quality Committee commenced in 2010/11. This was to provide further assurance to the Committee that we were preventing a wide range of healthcare associated infections. It needs to be acknowledged that only a proportion of MSSA bacteraemias are preventable. This has also become a mandatory infection to report via the MESS system. Although there has been a downward trend over recent years there has been a slight increase in 2014-15. There is ongoing issues with documentation in relation to peripheral cannulas.



Nationally there has been a general increasing trend in the total number of MSSA bacteraemias since the initiation of the mandatory surveillance of MSSA in January 2011, Trust apportioned rates fluctuate between 6.95 and 8.43 cases per 100,000 bed days;

assuming similar bed occupancy to previous years our rate would be approximately 6.32 per 100,000 bed days so better than the national average.

10 SURGICAL SITE INFECTION SURVEILLANCE (SSI)

The orthopaedic Surgical Site Infection Group continues to review all Root Cause analysis on all deep seated infections following hip or knee replacements surgery identifying additional control measures.

The Trust has introduced MSSA screening in addition to MRSA screening along with a much more robust and complete decolonisation regimen (to all patients colonised with *Staphylococcus aureus* prior to surgery, we are currently considering extending this to additional patient groups).

Two surgical site infection surveillance nurses are in place and we have commenced collecting data on all surgical site infections (both superficial and deep) following elective hip and knee replacements as well as emergency fracture neck of femur repairs. Current data just covers a few quarters and therefore has not been included in this report.

It is anticipated that the surveillance nurses will support the maternity team in improving surveillance following caesarean section.

11 OUTBREAKS/INCREASED INCIDENCE

11.1 Norovirus

Although there was a number of norovirus outbreaks over the winter period the main body of infection was over the January-March period, a summary of the outbreak is given below as well as the outcome of the debrief meeting. Norovirus is a highly contagious enteric pathogen.

Including both acute and community hospital patients there have been 242 patients with laboratory confirmed norovirus infection during the main body of the outbreak. The majority of cases on the Cumberland Infirmary site occurred more than 48 hours after admission suggesting acquisition whilst in hospital. There are a number of contributory factors listed below but those felt to be most pertinent are need for greater monitoring and assurance regarding cleaning (which is provided at the Cumberland Infirmary through the Trust's PFI partner Health Management Carlisle Ltd) and clinical staff practice in order to re-enforce good practice and a failure to achieve high standards required during an outbreak.

The impact of the outbreak on the operational running of the CIC site has been significant with increased waits in the Emergency Department and elective procedures cancelled due to insufficient bed capacity.

OUTCOME OF DEBRIEF MEETING

A multi-agency debrief meeting has taken place with involvement of the Infection Prevention lead for the Trust Development Agency and an external Consultant Microbiologist (from University Hospital, Birmingham). They also visited a number of areas of the hospital site to witness some of the issues highlighted below.

The principle areas of concern identified are

a) SYSTEMS

- The Infection Prevention Team were too heavily involved in data collection, not with ensuring high standards of infection prevention control are being adhered to in clinical areas.
- Lack of Infection Prevention team cover at weekends

b) ENVIRONMENT

- Significant concerns regarding the layout and design of the Cumberland Infirmary site, in particular the open bay design.
- Significant concerns regarding the standard of cleanliness, in particular the reuse of mops.
- Failure to clean and remove waste to the required standard
- Failure to clean clinical areas in a timely manner
- Poor leadership and support to the cleaning and waste teams
- Poor maintenance of ventilation with a dirty utility room under positive pressure

c) PATIENT INFORMATION

- Lack of standardised, visible information for visitors and patients
- Information leaflets not adequately distributed
- Lack of provision for patient hand hygiene

d) STAFF INFORMATION

- Failure of staff to comply and understand necessary control methods

e) SURVEILLANCE

- Infection Prevention Team overwhelmed by the volume of data and reliance on paper-based methods of data collection
- No “joined-up” health economy-wide approach

f) STAFF ENGAGEMENT

- Early phase of the outbreak should have involved a wider range of staff, particularly matrons, bed managers and operational managers

g) ISOLATION

- Cubicle doors not closed for patients with confirmed norovirus
- Delay in isolating symptomatic patients

h) LABORATORY

- Lack of ability to test for norovirus 7-days a week and lack of flexibility with current system with samples arriving later in the day.
 - Over-reliance and over-use of testing where norovirus already identified in a ward or bay.
- i) POLICIES
- Use of escalation policy and definitions of roles and responsibilities needed to be more explicitly adhered to and monitored
- j) OCCUPATIONAL HEALTH
- Lack of involvement of Occupational Health in management of staff with suspected or confirmed norovirus infection

Although the above list is long the two fundamental factors that contributed to the prolonged outbreak situation are poor standards of cleaning and waste management which is being raised with the Trust's PFI partner Health Management Carlisle Ltd and a lack of ownership at ward level.

The above recommendations have been incorporated into a Service Improvement Plan which is being monitored through the Infection Prevention and Control Committee and Trust Board

11.2 Endoscopy Incident

There had been a significant issue with Endoscopy Decontamination at the Cumberland Infirmary where chemicals had been mixed up between the scope disinfection cycle and the machine disinfection cycle. The incident had been investigated as a SUI the principle findings are.

- The timeline indicated that during the procurement process the company (PuriCore) were asked specifically to state which disinfectants could be used with the machines in order to ensure that safe working practice and efficacy was maintained. The response received from the company was unspecific indicating a wide variety of chemicals but no actual details on safe working practice. Although identified as a potential risk at the time, no systematic evidence could be found that this potential risk was properly managed during the procurement process.
- A number of fundamental design faults were identified with the machines particularly when compared to the previous machine which although 12 years old, posed no opportunity to generate an imbalance in chemical usage. Prevention of chemical mix up in the new machines was based on colour coding. There was also a fundamental design fault identified with the integrated monitoring system which clearly identified where the problematic cycles were but had no actual alarm to indicate when this was occurring.

- Staff training provided by the company was also identified as inadequate and certainly did not cover the problems faced by staff in terms of this incident. The training provided also did not deal with certain Health & Safety issues such as fumes.
- Any element of human error was not helped by the design issues indicated above, as well as the fact that although new, the machines leaked which required the chemical drawer to be opened and chemicals taken out, to enable the drawer to be cleaned and dried.

As a consequence of the above incident it was agreed that we would contact patients and offer them testing for blood borne viruses as agreed with Public Health England. There would be two rounds of testing, an immediate recall and then a further test at least 6 months after the incident so that all potential cases could be detected.

In total 371 patients affected; a small number of patients were not suitable for follow up therefore 357 patient letters had been sent out: 292 patients responded by contacting the helpline plus 2 patients were contacted directly by consultants. 229 patients booked an appointment; 18 patient self-presented at the clinic without an appointment; 8 patients contacted their GP; 33 patients have made no contact despite follow up letters. There were no positive results as a direct result of this recall incident

A further round of testing occurred in January 2015, six months following the incident, 197 patients were re-tested and no positive results were obtained.

11.3 CPE incident

A patient was identified with a carbapenemase producing strain of Escherichia coli (OXA 48); clinical review of this case indicated that the patient had probably acquired this organism whilst abroad a number of months earlier. It was agreed that we should identify potential contacts and screen them for potential colonisation with this resistant organism.

In total 93 patients in total have been identified as a contact from inpatient admissions and renal dialysis between Dec 2014 & Mar 2015. All of the in-patient and dialysis patients were screened, the latter using molecular methods to enhance recovery of CPE strains, none were identified as colonised in addition 48 patients were identified as contacts but have now been discharged; alerts have been placed on the PAS system so that these patients can be identified if they are readmitted. Letters have been sent to their GP, to the patient themselves and added to their hospital case notes.

11.4 Influenza

We had a number of influenza cases over the winter months, the vast majority of these were community acquired although a number of these individuals were not isolated

promptly therefore prophylaxis had to be given to high risk contacts.> Furthermore on one occasion there was evidence of transmission of influenza to another patient within the same bay, this required the bay to be closed to admissions.

11.5 Community

There were large number of patients with Scarlet Fever in the community.

12 DECONTAMINATION

12.1 Sterile Service

North Cumbria University Hospitals Sterile Service Department (CSSD) was re audited in February 2014 and recommended for re-accreditation to ISO 9001:2008, ISO 13485 and directive 93/42/EEC commencing in April 2014. Thus the registration from MHRA continues.

The Quality system continues to be upgraded to meet the changes in the standards. The instrument tracking system is currently being implemented to include the instrument marking module to enable single instrument traceability. Medical Standards 1 is also being implemented.

A purpose built endoscope reprocessing unit has been built within the Sterile Services department, meeting current CFPP standards and recommendations from JAG, and opened in April 2014, it is planned that Sterile Services quality system will be developed to include this new reprocessing unit in its accreditation.

The new endoscopy reprocessing facility has had some teething problems including the isolation of environmental mycobacteria from some TVC samples and work has been undertaken on the machines and also with the local water supply system to rectify this problem.

The number of faults that we had when the system was originally installed has fallen significantly.

12.2 Endoscopy Unit

As stated above the endoscopy unit on the CIC site has been relocated to CSSD with the purchase of new washer disinfectors that allow pass through of instruments.

The Endoscopy Unit at CIC has been fully JAG accredited.

A procurement process has been undertaken for the Endoscopy Unit on the West Cumberland Hospital site and a new reprocessing facility will be installed in the new build ahead of occupation in October 2015. We have ensured that lessons learnt from the previous AER procurement have been learnt with a separate heat disinfection cycle used for machine disinfection cycle.

12.3 Reverse Osmosis (Renal Dialysis Water)

No significant infection prevention issues were identified during 2014-15.

12.4 Water Sampling

Water samples were taken in response to DoH guidance regarding Pseudomonas in water supplying augmented care units across the Trust, whilst significant issues have been previously identified at the CIC site, generally this was much less of a problem in 2014-15. The main water tank has been replaced on the Cumberland Infirmary site so we are now compliant with the CAS alert in relation to water tank storage.

The Water Safety Committee continues to meet has to provide greater assurance on water safety and monitoring across the Trust. As with decontamination, all key roles have been identified, individuals are in post and have been signed off as competent by our relevant Authorising Engineer

13 CLEANING SERVICES

13.1 Management Arrangements

At WCH there is a traditional cleaning service which is carried out in-house. A major service review was undertaken throughout the domestic department which commenced in October 2010 and was completed in August 2011. This resulted in a number of additional staff to ensure that the departments complied with the Specifications for Cleanliness (2007). At the Cumberland Infirmary, a PFI hospital, the services are contracted out via Health Management Carlisle Limited, with a Service Level Agreement in place however cleaning standards remain at the originally agreed 2000 level. The Trust is actively engaging with its PFI partner on this matter.

13.2 Monitoring Arrangements

Monitoring arrangements have altered over the year, at the beginning of 2014-15 the Trust was doing the Maximiser audits in line with our buddy Trust Northumbria, a business case was agreed to employ staff on both sites to continue and improve cleaning audits, these individuals are now in place and complete electronic cleaning monitoring audits.

We have a sub-group aimed at improving cleaning across the Trust in particular to implement the BIS 2014 standards.

Spray and glow testing as an assurance for cleanliness of the patient environment is now a rolling audit across the Trust. Several issues regarding cleaning responsibilities, techniques etc have come to light as a result of this and have all been addressed. Quarterly reports of these tests are reported to all staff and any urgent actions identified are addressed immediately and escalated.

14 AUDIT

The annual programme focussed on the requirements of the Health Act 2008. Audit of practice has therefore included:

- Saving Lives Healthcare Programme of 8 High Impact Interventions (HII). Each audit tool enables clinical staff to measure compliance with practice.
- There is an IP audit surveillance calendar generated each financial year.

15 TRAINING ACTIVITIES

Education and training is vital to inform, increase knowledge, understanding, and give the opportunity for discussion for both Trust staff and the Infection Prevention team.

This is completed for Trust staff through the following routes:

- All staff newly appointed to the Trust attends Corporate Induction.
- Annual Health & Safety Mandatory Infection Prevention Training either by attendance at a face to face day or through completion of a workbook. This also includes medical staff.
- Face to face training on hand hygiene
- There is also an IP e-learning package that is mandatory for nursing staff.
- IP training for 2015/16 has been updated to include specific training on Norovirus and CPE

16 ANTIMICROBIAL MANAGEMENT TEAM (AMT)

This annual report is included as Appendix 1 of this document.

Appendix 1

Antimicrobial Management Team (AMT) annual report 2014/15

1 Introduction

The AMT is responsible for developing and implementing the Trust's Antimicrobial Stewardship Programme; a key component in the reduction of healthcare associated infections (HCAI) and contributing to slowing the development of antimicrobial resistance.

2 Antimicrobial Guidelines and Policy Updates

Joint Northumbria-North Cumbria antimicrobial guidelines have been available since August 2013. Paediatric coast to coast antimicrobial guidelines have now been agreed. An antibiotic prescribing guideline for elderly care patients has been written to incorporate recommendations for prudent prescribing, probiotics, and proton pump inhibitors for patients on antibiotics.

The North Cumbria Antimicrobial Leads will be given access to edit and update the North Cumbria Antimicrobial Guidelines Intranet site following training scheduled for May 2015.

3 New drug formulary requests

1. IV Fosfomycin (for use on Microbiologist recommendation only)

Indications:

Acute osteomyelitis; complicated urinary tract infections; nosocomial lower respiratory tract infections; bacterial meningitis; bacteraemia that occurs in association with, or is suspected to be associated with, any of the infections listed above

Benefits:

Fosfomycin is a broad spectrum, bactericidal agent which inhibits bacterial cell wall production. Fosfomycin is widely distributed with good tissue penetration. Bacterial resistance levels are currently low compared to other first line agents and activity remains against ESBL and AmpC producing strains. Synergistic activity has been demonstrated with beta-lactams hence fosfomycin may be used as combination therapy for complicated infections.

2. Mycalfungin (alternative to Caspofungin)

Indications:

Treatment of invasive candidiasis; prophylaxis of Candida infection in allogeneic haematopoietic stem cell transplantation patients or those expected to have neutropenia (ANC <500 cells/ μ l) for \geq 10 days. In patients \geq 16 years: treatment of oesophageal candidiasis.

4 Surveillance of resistance in blood culture isolates

The Department of Health's UK Five year Antimicrobial Resistance Strategy and Action Plan (2013-2018) includes recommendations for monitoring success in

controlling the development of resistance by establishing the baseline and subsequent trends in key drug/bug combinations.

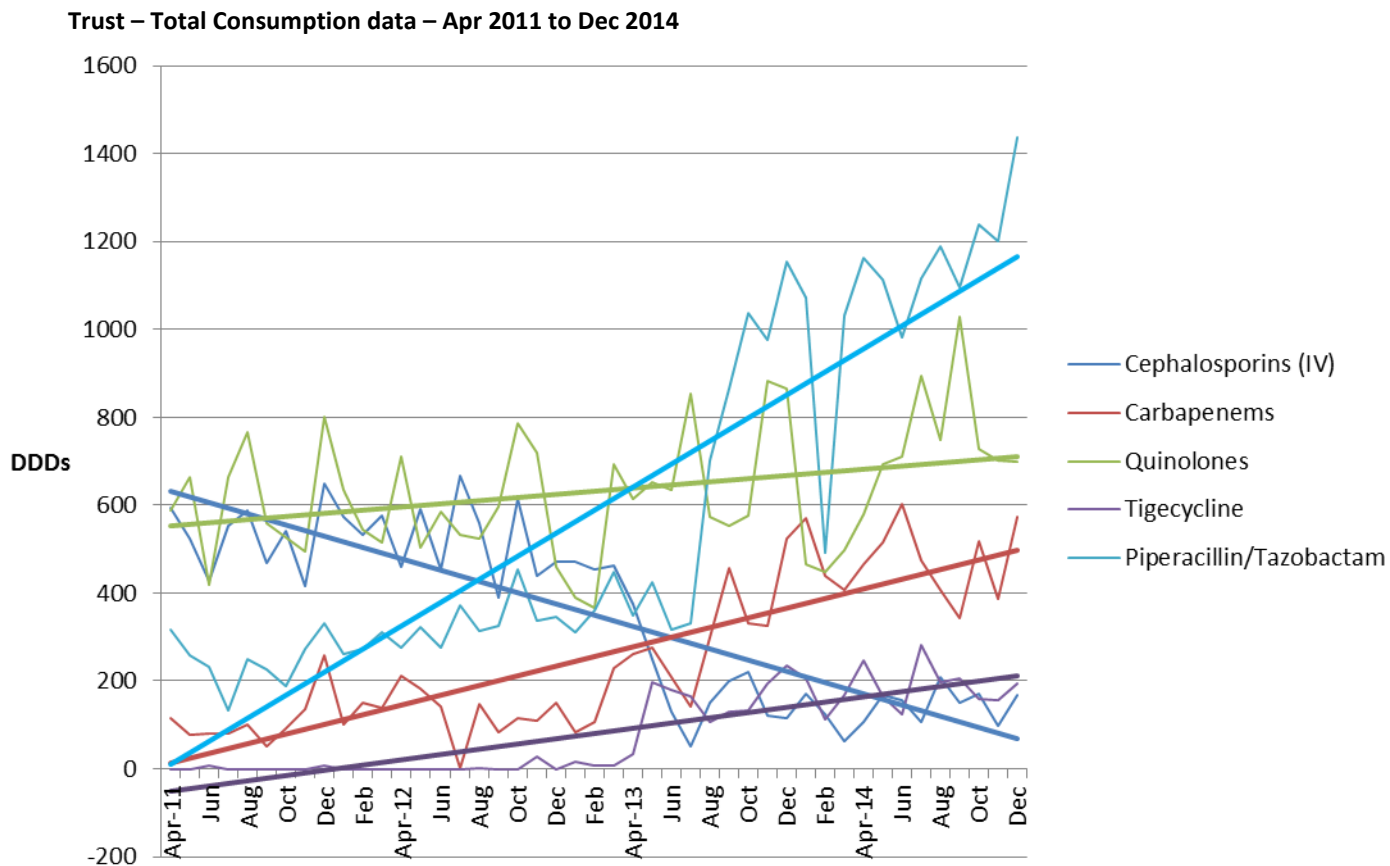
Antibacterial susceptibility testing results from significant isolates from our laboratory are submitted to a Public Health England surveillance scheme (Amsurv). Local data is accessible via “AmWeb”, which allows trend analysis and comparison with Regional data. Six year data for blood culture isolates is presented below.

Bug	Drug	% non-susceptible					
		2009	2010	2011	2012	2013	2014
Klebsiella sp.	Meropenem	0	0	0	0	0	0
Klebsiella sp.	Cefotaxime	0	6	7	6	0	0
Klebsiella sp.	Co-amoxiclav	0	0	16	9	15	45
Klebsiella sp.	Pip/tazobactam	10	0	14	0	5	20
Number of isolates*		9	17	21	22	20	21
E.coli	Meropenem	0	0	0	0	0	0
E.coli	Cefotaxime	0	9	3	7	8	8
E.coli	Ciprofloxacin	11	18	16	14	14	10
E.coli	Gentamicin	0	11	12	7	10	7
E.coli	Co-amoxiclav	6	20	29	31	33	52
E.coli	Pip/tazobactam	6	3	4	3	1	9
Number of isolates*		34	91	130	143	111	103
P.aeruginosa	Meropenem	0	0	0	0	0	0
P.aeruginosa	Ceftazadime	0	0	5	0	0	0
P aeruginosa	Pip/tazobactam	0	0	5	0	0	0
Number of isolates*		4	3	21	11	12	7
Gonococcus**	Ceftriaxone	-	0	7	0	0	0
Number of isolates*		-	23	31	32	35	11
Pneumococcus	Penicillin	0	0	0	0	0	0
Number of isolates*		8	9	22	13	12	9

*approximate (n may differ slightly according to agent tested)

**Data refers to all sample sites (no gonococcus isolated from blood cultures)

5 Antimicrobial Consumption Data



Co-amoxiclav dominates total Trust antimicrobial consumption, accounting for more than 60% of all antibiotics prescribed, and its use appears to be increasing. A considerable proportion of the co-amoxiclav use is for discharge or from the A&E department. There is a trend towards steady rise in overall piperacillin/tazobactam use. Cephalosporin, carbapenem, quinolone and tigecycline use has been stable. ITU has seen decreasing co-amoxiclav and increasing carbapenem use.

Data for NCUH Antimicrobial consumption 2013/14 was submitted to ESPAUR (English Surveillance Programme for Antimicrobial Utilisation and Resistance) in February as part of the initial protocol validation. All other acute Trusts have now been asked to submit their data. Completion of this data forms part of the quality premium for Clinical Commissioning Groups for 2015/16. PHE will publish full details of the validation in April 2016.

The antibiotic consumption targets for the forthcoming year will be aligned with the Department of Health Antimicrobial Resistance and Health Care Associated Infections (ARHAI) defined Antibiotic Prescribing Quality Measures (APQMs) applicable to secondary care:

1. Reduction in total antibiotic prescribing. This will be achieved via introduction of procalcitonin testing to aid diagnosis of sepsis; promotion and auditing of 48/72h antimicrobial review and prescribing decision; promotion and auditing of single dose surgical prophylaxis

2. Reduction in carbapenem usage to 2010 levels. Strategies include diversification of antimicrobial agents (from empirical broad spectrum agents piperacillin/tazobactam and co-amoxiclav) by ensuring antimicrobial review and de-escalation occur where appropriate, and limiting non-essential meropenem consumption by utilising carbapenem sparing agents when culture sensitivities permit (e.g. temocillin and fosfomycin)

6 Audits

Compliance with Trust Antimicrobial Prescribing Standards

The following antimicrobial prescribing quality indicators continue to be monitored monthly on all wards.

- 1 Choice of antimicrobial compliant with Trust guidelines (target 75% compliance)
- 2 Stop/review date documented on the prescription chart
- 3 Indication for antimicrobial documented on the prescription chart

Data collection has been difficult to achieve in some areas due to time pressures on the ward pharmacy teams. Available data has shown consistent improvement, although the surgical admissions unit has remained an area of concern. Issues were presented at the surgical directorate quality Improvement meeting in February.

The data collected will change from April to also include 72 hour review data and actions taken to resolve identified non-compliance.

Audit of IV po switch

IV antibiotics were audited for 43 in-patients on CIC elderly care wards during July 2014.

63% were on IV antibiotics for greater than 2 days.

9% of patients on IV antibiotics had no documented evidence of review at 48-72 hours.

30% did not follow the Trust IV oral switch guideline recommendations.

Audit findings were presented to the Microbiology and Elderly Care teams and posters with IV-oral switch guidelines have been displayed on the notice boards of doctors' offices in the wards.

7 Annual Trust-wide point prevalence survey of antimicrobial use

A Trust-wide point prevalence survey of antimicrobial use was carried out in December 2014. Compared to previous surveys, improvements were observed in the proportion of IV to oral antimicrobials prescribed and the proportion of prolonged antimicrobial courses. All prescriptions were accompanied by a reason for antimicrobials documented in the notes or chart.

The overall antimicrobial use prevalence has increased to 33.1% Trust-wide with the proportion of broad spectrum agents (piperacillin/tazobactam and meropenem) also increasing. The report highlighted the need to prioritise efforts to ensure all prescriptions are reviewed at 48/72h and a prescribing decision is made and documented.

8 Education and Training

Foundation Doctors and Nurse Practitioners

A safe antimicrobial prescribing course is an integral part of the Foundation Doctor's mandatory training programme. The course consists of two hour long sessions for F1 doctors and a two hour session for F2 doctors, followed by an optional assessment. Certificates are awarded to those successfully completing the competency assessment. Positive feedback was received for all sessions.

Mandatory e-learning

An e-learning package for antimicrobial prescribing has been developed, mapped to Department of Health Antimicrobial Prescribing Competencies. Once tested, this training will be a mandatory, 3 yearly requirement for all staff involved in prescribing, administering and dispensing antimicrobials.

C Hamson and J Forlow on behalf of the AMT, April 15