

This paper provides detail of actions to reduce the incidence of *Clostridium difficile* at Airedale NHS Foundation Trust (ANHST).

Key elements of the paper:

The paper highlights actions undertaken to date and provides details of assurance. Further enhancements are also detailed which align to the 'Action Plan to Reduce the Incidence of Healthcare Associated Infections 2012-2013'

*Clostridium difficile* cases apportioned to the Trust are detailed for quarter 1, 2 and 3 of 2012/13 including key recommendations identified through root cause analysis.

The Board of Directors are asked to note and consider the actions completed to date.

**Update on Actions to Reduce the Incidence of *Clostridium difficile* at Airedale NHS Foundation Trust**

Previous papers submitted to Executive Assurance Group highlighted actions undertaken to reduce the incidence of *Clostridium difficile* at Airedale NHS Foundation Trust (ANHST) and provided detail on assurance. Further enhancements were also detailed which align to the 'Action Plan to Reduce the Incidence of Healthcare Associated Infections 201-2013'.

To date ANHSFT have had **14** Trust apportioned cases against a threshold of **9** (de minimis limit of 12). Table 1 provides detail of cases.

**Table 1: CDI Cases Quarter 1, 2 and 3 2012/13**

Source of admission	Ward	Date of admission	Date onset symptoms	Specimen date	RCA – risk factors
Nursing Home	<b>6</b>	21/03/12	03/04/12	04/04/12	<ul style="list-style-type: none"> <li>• Cefotaxime</li> <li>• PPI – Omeprazole</li> <li>• Over 65yrs</li> <li>• Antacids</li> <li>• Sepsis</li> </ul>
Home	<b>19</b>	30/04/12	30/04/12	01/05/12	<ul style="list-style-type: none"> <li>• Non Hodgkins Lymphoma</li> <li>• Antacids</li> <li>• Amoxicillin</li> <li>• Nasogastric tube</li> </ul>
Hospital (BRI)	<b>2</b>	09/05/12	?14/05/12	17/05/12	<ul style="list-style-type: none"> <li>• History of chronic loose stools</li> <li>• Cefotaxime/Meropenem</li> <li>• Over 65yrs</li> <li>• Extended hospital stay</li> </ul>
Home	<b>1</b>	06/05/12	06/06/12	09/06/12	<ul style="list-style-type: none"> <li>• Suspected Cholangitis</li> <li>• Ciprofloxacin/Cefotaxime/ Metronidazole</li> <li>• Over 65yrs</li> <li>• Extended hospital stay</li> </ul>
Home	<b>1</b>	16/06/12	19/06/12	21/06/12	<ul style="list-style-type: none"> <li>• Amoxycillin</li> <li>• PPI</li> <li>• Over 65yrs</li> <li>• Laxatives</li> </ul>
Home	<b>7</b>	12/07/12	11/07/12	16/07/12	<ul style="list-style-type: none"> <li>• Osteomyelitis</li> <li>• Extensive antibiotic history</li> <li>• PPI</li> <li>• Over 65yrs</li> <li>• Aperients</li> <li>• Poor nutritional status</li> <li>• Extended hospital stays</li> </ul>
Home	<b>6</b>	29/07/12	02/08/12	02/08/12	<ul style="list-style-type: none"> <li>• Long term Flucloxacillin from 2010 for chronic hip wound. Amoxycillin</li> <li>• PPI</li> <li>• Inappropriate antibiotic prescribing for UTI</li> <li>• Over 65yrs</li> </ul>
Home	<b>6</b>	20/07/12	20/07/12	23/07/12	<ul style="list-style-type: none"> <li>• Sepsis ? UTI ? cellulitis</li> <li>• Gentamicin, Amoxicillin,</li> </ul>

					<ul style="list-style-type: none"> <li>Flucloxacillin, Nitrofurantoin</li> <li>Over 65yrs</li> <li>Laxatives</li> </ul>
Home	<b>2</b>	07/09/12	Before admission	20/09/12	<ul style="list-style-type: none"> <li>Infected leg ulcers, diarrhoea, malnutrition</li> <li>Co-amoxiclav, Tazocin</li> <li>Over 65yrs</li> <li>Previous admissions</li> </ul>
Home	<b>19</b>	27/08/12	05/09/12	09/10/12	<ul style="list-style-type: none"> <li>Lymphadenopathy, dysphagia, shingles, neutropenic sepsis</li> <li>Tazocin and gentamicin</li> <li>NG tube feeding</li> <li>Over 65yrs</li> <li>Extended hospital stay</li> </ul>
Home	<b>1</b>	09/10/12	09/10/12	22/10/12	<ul style="list-style-type: none"> <li>Aspiration pneumonia</li> <li>Cefaclor, Clarithromycin, Tazocin</li> <li>PPI</li> <li>Laxatives</li> <li>Over 65yrs</li> <li>Multiple hospital stays</li> </ul>
Home	<b>1</b>	05/10/12	04/11/12	05/11/12	<ul style="list-style-type: none"> <li>Sigmoid colectomy, hospital acquired pneumonia</li> <li>Amoxicillin, Metronidazole, Gentamicin, Tazocin, Pivmacillinam</li> <li>Laxatives</li> <li>Over 65yrs</li> </ul>
Home	<b>13</b>	02/11/12	08/11/12	08/11/12	<ul style="list-style-type: none"> <li>Hemi-colectomy</li> <li>Over 65yrs</li> </ul>
Home	<b>14</b>	12/11/12	09/11/12	09/11/12	<ul style="list-style-type: none"> <li>Pancreatitis ? steroid induced, diabetic, foot ulcers and osteomyelitis</li> <li>Tazocin, Cephadrine, Metronidazole, Vancomycin</li> <li>PPIs</li> <li>Laxatives</li> <li>Over 65yrs</li> <li>Extended hospital stay</li> </ul>

**NB:** 2 cases on Ward 1 occurred during an outbreak of Norovirus.

## Actions and Assurance Table

Action: Monitor and sustain reduction in antibiotic related *Clostridium difficile* infections (CDIs) – no more than 9 hospital acquired in year

**Overall leads: Dr Paul Godwin, Consultant Microbiologist / Allison Charlesworth, Matron for Infection Prevention**

Actions completed to date:	Assurance:
<p><b>Clinical:</b></p> <ol style="list-style-type: none"> <li>1. Antibiotic usage monitored by antibiotic pharmacist</li> <li>2. Analysis of hospital acquired pneumonia cases undertaken by Consultant Microbiologist</li> <li>3. Root Cause Analysis (RCA) completed for all hospital acquired cases – shared with clinical teams and key lessons discussed at Infection Prevention Assurance Meeting</li> <li>4. High Impact Intervention (HII) audit completed for all hospital acquired cases</li> <li>5. Stool samples sent to Microbiology monitored by Infection Prevention Team (IPT) to ensure they fit the criteria for testing</li> <li>6. Key points for prevention of CDI distributed to ward teams and to nursing agencies used by the Trust. Included reminders on:               <ul style="list-style-type: none"> <li>• Antibiotic treatment</li> <li>• Use of proton pump inhibitors</li> <li>• Laxatives</li> <li>• Early mobilisation of patients to reduce risk of hospital acquired pneumonia</li> <li>• Equipment cleaning</li> </ul> </li> <li>7. All hospital CDI cases followed up by IPT every weekday until 48hrs free of symptoms</li> <li>8. All previous known cases of CDI readmitted are flagged up to IPT and reviewed</li> <li>9. Blue alert stickers used in notes for all CDI cases</li> <li>10. CDI Care Pathways used for all positive inpatients</li> <li>11. IPT check bed manager admission sheets for any patients admitted with potential risk of infection e.g. diarrhoea</li> <li>12. Prompt reporting and isolation of patients with diarrhoea</li> <li>13. Ward safety briefing used to highlight patients with CDI</li> </ol>	<ul style="list-style-type: none"> <li>• Antibiotic reports</li> <li>• Antibiotic Policy</li> <li>• HII audit reports</li> <li>• RCA</li> <li>• Database</li> <li>• Algorithm</li> <li>• <i>Clostridium difficile</i> Guideline</li> <li>• Isolation Guideline</li> <li>• Standard Precautions Guideline</li> <li>• CDI Alert cards and posters</li> <li>• Key points document</li> <li>• DIPC report</li> <li>• Outbreak cleaning protocol</li> <li>• Safety briefings</li> <li>• Enhanced cleaning team schedules</li> <li>• Hand hygiene audit reports</li> <li>• Executive hand hygiene emails</li> <li>• Safety and Quality Update and Information for Doctors (SQUID) Newsletter</li> <li>• CDI Care Pathways</li> <li>• KPIs</li> <li>• Side room audit</li> <li>• IPT entries in patients notes</li> <li>• Blue alert note stickers</li> <li>• IPT Power point presentations for induction and mandatory training</li> <li>• Data Warehousing alerts</li> <li>• Environmental audit reports</li> <li>• Patient information leaflets</li> <li>• Meeting minutes</li> <li>• Rates of CDI</li> </ul>

or those at high risk of developing CDI

14. Director of Infection Prevention and Control report for April focused on CDI and prevention.
15. New national CDI guidance implemented – including ‘Algorithm for Management of a Patient with Unexplained Diarrhoea Suspected *Clostridium difficile* infection (CDI)’
16. *Clostridium difficile* Guideline updated in accordance with new guidance
17. Importance of patient hand hygiene before meals re-emphasised and help of Ward Hostesses enlisted.
18. Commode use kept to a minimum – where possible patients are taken to the toilet
19. Provision and appropriate use of personal protective equipment e.g. gloves and aprons
20. Safe disposal of soiled linen
21. New alert card information posters distributed to wards and departments.
22. New outbreak cleaning protocol implemented during last Norovirus outbreak activity
23. Environmental audit programme for 2012 2013
24. Enhanced cleaning team
25. Terminal clean
26. Executive hand hygiene walk rounds
27. Monthly hand hygiene audits
28. Annual hand hygiene audit
29. Key Performance Indicators (KPIs) used to monitor completion of Infection Risk Scores
30. Database of all hospital and community acquired cases maintained
31. Side room audit
32. CDI prevention covered at Trust induction and mandatory updates
33. Key messages and audit results communicated in medical staff SQUID newsletter
34. Early patient discharge pathways

<b>35. CDI alert on e-discharge</b>	
<b>Further enhancements being undertaken:</b> <ol style="list-style-type: none"> <li>1. Evaluation of Bioquell for decontamination (refer to appendix 3)</li> <li>2. Protocol for enhanced management of mattresses – care and storage</li> <li>3. Work with community ANHSFT staff to reduce incidence of CDI in community</li> <li>4. Work with community colleagues looking at district wide Approach to prevention of CDIs</li> <li>5. Mapping of Ribotype strains to individual wards</li> </ol>	<b>Assurance:</b> <ul style="list-style-type: none"> <li>• Bioquell quote</li> <li>• Meeting date set 26<sup>th</sup> July 2012 with community colleagues</li> <li>• Draft mattress protocol</li> </ul>

**Progress:**

- All existing key work streams detailed in previous reports continue.
- Root Cause Analysis meetings pending for the recent *Clostridium difficile* cases.
- RCA meetings key points – provision of adequate samples, priority testing in lab for CDI if small sample sent, consider pharmacy input in relation to review of laxatives and PPIs, timeliness and appropriateness of specimens, treatment of suspected urinary tract infections in absence of symptoms and continuation of antibiotic treatment when actually proved negative on culture.
- Dr Godwin has completed a benchmarking exercise and paper submitted to support discussions with ‘Monitor’.
- Action plan drafted following discussions with ‘Monitor’.
- DIPC report published in October 2012 detailed key issues around CDI risks.
- Bioquell alternatives sourced for comparison.
- Department of Health Director of Health Protection contacted re further support with actions in relation to CDIs.
- Planned performance review conference call with Monitor 9.11.12
- Training and Action for Patient Safety (TAPS) training programme continues and CDI data sets submitted.
- Matron for Infection Prevention looking at risk factors over last 2 years as part of TAPS programme.
- Patient hand hygiene audited by IPT prior to meals.
- CDI Care Pathway updated and made available of SharePoint.
- Work ongoing with feeding buddies and volunteers re hand hygiene.

- Mattress storage area to be developed on Ward 11 as part of redesign.
- CDI patient information in process of redraft by NHS Bradford and Airedale.

Progress and outcomes on key actions continue to be monitored by the Infection Prevention Team and are detailed in the 'Action Plan to Reduce the Incidence of Healthcare Associated Infections 2012-2013'. The Matron for Infection Prevention updates the plan on a monthly basis and progress is discussed at the Infection Prevention Implementation Group and the Infection Control Committee.

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