Root Cause Analysis Investigation Report

The Royal National Orthopaedic Hospital

Clostridium Difficile - Margaret Harte Ward – May 2012

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MAIN REPORT

Incident description and consequences

Incident date: 10th May 2012

Incident type: Clinical - Inpatient on Margaret Harte Ward diagnosed with Clostridium Difficile 5 days post surgery.

Specialty: Margaret Harte Ward


Pre-investigation risk assessment

<table>
<thead>
<tr>
<th>A Potential Severity (1-5)</th>
<th>B Likelihood of recurrence at that severity (1-5)</th>
<th>C Risk Rating (C = A x B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>
Background and context

Terms of reference

This investigation was undertaken using the Root Cause Analysis (RCA) toolkit. The toolkit provided a framework to ensure that relevant facts and information were collected.

The purpose of the investigation is not to apportion blame, but to reflect on this case to establish if there was anything which the organisation could have done to have prevented this case of Clostridium difficile.

The findings of this RCA will be circulated as appropriate.

The investigation team

Jackie Humphreys – Matron Theatres
Habibat Olowolusi – Ward Sister Margaret Harte Ward
Dr Damien Mack – Microbiologist, Royal Free Hospital

Scope and level of investigation

A comprehensive investigation was undertaken by the investigation team employed by the Royal National Orthopaedic hospital. This investigation and the results will be shared with the Infection Control Committee, Clinical Governance Committee, Clinical Risk Outcome Panel and the Clinical Quality Review meeting held by commissioners.

Investigation type, process and methods used.

The investigation team met up twice to review notes and to discuss the case.

Involvement and support of patient and relatives

Patient seen by medical team, microbiologist and infection control team.

Involvement and support provided for staff involved

The matron and senior sisters will feedback the findings of the RCA locally to all staff, and any training required will be addressed by the infection control team.

Information and evidence gathered

The patient’s medical and nursing notes were used to obtain the information in this investigation.

Chronology of events

5/5/12
Patient admitted for revision knee surgery onto MHW
1022 Anaesthesia commences
1030 IV Cefuroxime 750mg given.
1400 Patient returns to the ward with Epidural and IV fluids.

6/5/12 Bowels not opened.
7/5/12 Bowels not opened.

8/5/12 bowel opened twice soft large amount

9/5/12 diarrhoea *3. Medical review stool sample requested fluid chart maintained. Infection control nurse informed and patient moved to side room. 1 further episode of diarrhoea at 1900

10/5/12
0850 stool sample sent.

1550 ? overflow phosphate enema prescribed and administered

1700 abdo x-ray - large abdo filled with faecal matter.

10/5/12 Clostridium Difficile diagnosed from stool specimen.
Stop laxatives and start 14/7 metronidazole as discussed with micro biologist at Royal Free Hospital

11/5/12 watery stool twice. Hand wash daily list commenced

11/5/12 solid type 2 bowel motion

11/5/12 bowel motion twice type 7

12/5/15 bowel type 7

13/5/12 bowel type 7

13/5/12 seen by infection control nurse who gave her c. diff information

13/5/12 diarrhea stopped

13/5/12 seen by microbiologist Dr. Mack. Nil stool for 48hrs can be discharged

22/5/12 Microbiologist Dr Mack reviewed patient no further episodes of diarrhoea complete 10/7 metronidazole.

23/5/12 patient discharged home.

Detection of Incident:

10/5/12 – Clostridium Difficile diagnosed from stool specimen

Notable practice
As soon as it was evident that the patient had diarrhoea, staff on Margaret Harte Ward commenced barrier nursing.

Stool Chart commenced on the 9th May at 8.30am.
Infection Control Nurse contacted.

Care and service delivery problems
Stool sample not sent on the 9th as per instructions from team in patient notes.
No reason documented on the Stool chart record as to why sample not taken.

Had stool sample been sent at commencement of diarrhoea laxatives and enema would not have been prescribed and given.

Stool sample not sent until 10th May.

Contributory factors
Antibiotic Treatment:

5/5/12 IV Cefuroxime 1.5mg in Theatre

5/5/12 IV Cefuroxime 750mg @ 1900 on the ward

6/5/12 IV Cefuroxime 750mg @ 0300 on the ward

10/5/12 – 19/5/12 PO Metronidazole 400mg TDS

Root causes
Use of Broad Spectrum Antibiotics
Lessons learned
Continued vigilant awareness of the risks associated with antibiotic therapy.
Stool sample to be sent after episodes of diarrhoea.
Improved record keeping – documentation to show why sample not taken.

Recommendations
In order to maintain Clostridium Difficile awareness, the medical and nursing staff need to continue with vigilance and of Clostridium difficile risks as well as prudent antimicrobials stewardship.

Arrangements for shared learning
This report will be reviewed and an action plan implemented and monitored by the Clinical Governance Committee.

Distribution list
Infection Control Committee
Clinical Governance Committee

Appendices

Author     Jackie Humphreys    Job title     Matron    Date     27/6/12
Patient acquired C.difficile whilst inpatient at the RNOH.

**Patient factors:**
- Patient admitted for Revision of total Knee replacement. No documentation to suggest on antibiotics.

**Individual (staff) factors:**
- As soon as patient developed diarrhoea, stool sample should have been sent.

**Task factors:**
- Nil identified

**Communication factors:**
- Instructions to send stool sample not followed until one day after instruction issued.

**Team + social factors:**
- Ward staff did not send stool specimen as instructed.

**Education + Training Factors:**
- Use of Bristol stool chart and record keeping.
- Prescribing of cefuroxime protocol.

**Equipment + resources:**
- Nil identified

**Working condition factors:**
- Nil identified

**Organisational + strategic factors:**
- Patient prescribed 3 doses of prophylactic cefuroxime.

As soon as patient developed diarrhoea, stool sample should have been sent.
## ROOT CAUSE ANALYSIS ACTION PLAN

<table>
<thead>
<tr>
<th>Risk Description</th>
<th>Consequence (C)</th>
<th>Likelihood (L)</th>
<th>Risk Rating (C X L)</th>
<th>Action Description</th>
<th>Start Date</th>
<th>Anticipated Date Of Completion</th>
<th>Designated Lead</th>
<th>Risk Rating after actions complete (C X L including score)</th>
<th>Progress Action Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of iv Cefuroxime x 3 for prophylaxis</td>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
<td>High</td>
<td>Updated policy on antimicrobials to be ratified. Adherence to new policy audit. Review of use of iv cefuroxime x 3 doses for prophylaxis. Continue to promote antimicrobials stewardship. Repeat audit of antimicrobial usage.</td>
<td>07/12</td>
<td>10/12</td>
<td>Chief Pharmacist</td>
<td>Policy in draft form awaiting ratification at next Drugs and Therapeutics Committee</td>
</tr>
<tr>
<td>Antibiotics policy – after agreement at Septembers DTC – weak out of date policy at present</td>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
<td>High</td>
<td></td>
<td>06/12 On-going</td>
<td>02/13</td>
<td>Chief Pharmacist</td>
<td>Antimicrobial ward round frequency increased in June 2012 to twice per week</td>
</tr>
<tr>
<td>Royal Free Hospital microbiology ward rounds increase in frequency - effective</td>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
<td>High</td>
<td></td>
<td>06/12 On-going</td>
<td>11/12</td>
<td>Medical Director/Microbiology</td>
<td></td>
</tr>
<tr>
<td>Regular audit of practice and feedback – some weakness due to attendance at medical staff committee</td>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
<td>High</td>
<td></td>
<td>06/12</td>
<td></td>
<td>Chief Pharmacist</td>
<td></td>
</tr>
<tr>
<td>Medical induction includes guidance on use of antimicrobials in the surgical setting - satisfactory</td>
<td>4</td>
<td>4</td>
<td>4 x 4 = 16</td>
<td>High</td>
<td></td>
<td>Twice per year</td>
<td>10/12</td>
<td>Microbiology</td>
<td></td>
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