Root Cause Analysis Investigation Report

The Royal National Orthopaedic Hospital

Root Cause Analysis on a case of Clostridium Difficile on Margaret Harte March 2012

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MAIN REPORT

Incident description and consequences
This 77 year old lady was admitted to the Royal National Orthopaedic Hospital (RNOH) Margaret Harte Ward on the 30th March 2012 under the care of Mr Carrington for Left Total knee Replacement. Patient’s past medical history is as follows:

Right Achilles Tendon repair 1963
Elbow repair 2003
Right knee Arthroscopy 2008
Tibialis Posterior reconstruction + Calcaneal Osteotomy left foot 2009
Bilateral Grade 2 Tibialis posterior dysfunction

The patient confirmed that she had no recent history of admission into another hospital and had not been treated with antibiotics prior to this admission into RNOH which was on the 30th March
2012.

At RNOH patient was sent to theatre on the 30/03/2012.
30.03.12: It is documented that the patient had last opened her bowels on the 30.03.12
30.03.12: Returned to the ward at approx 19.00hrs. PCA in-situ + Fluids
31.03.12: No documentation of bowel movement (AM shift)
31.03.12: PM shift) Patient complained of feeling nauseated 4mg IV Ondansetron given, bowel not opened, patient drinking well, fluids discontinued.
01.04.12 No documentation of bowel movement (am shift)
01.04.12 Patient passing urine on urge, no bowel movement (pm shift)
02.04.12 13.40hrs Patient complained of nausea and pain plus poor appetite
16.00hrs Food chart commenced, bowel not opened.
03.04.12 04.45hrs Bowels opened x 2, second episode documented that stools were loose. 07.30hrs Handed-over to day shift that the patient had opened her bowels twice over-night, not diarrhoea or offensive.
10.15hrs it was discussed with the patient discharge plan for the following day
18.30hrs Documented that patient has continued poor appetite, dislikes hospital food and will eat better once home. Complained of nausea, laxatives declined, bowels opened twice.
04.04.12: 04.40hrs Offensive diarrhoea x 3 over night, specimen taken by night-staff, site manager informed, barrier nursing commenced.
09.00hrs Infection Control nurse was informed that the patient has ongoing diarrhoea, advised that the patient to be moved into a side-room, If one not available to contact Angus McKinnon Ward (AMU) where a side room maybe available.
Type 7 loose stools
Food chart commenced by am shift, patient was barrier nursed at bed-space curtains closed, trolley with gloves, apron and clinical waste bags within bed-space as was commode.
Patient informed named staff nurse that she would not be staying in hospital or transferring to another ward or into a side room and that she would be going home today as arranged. It was explained to the patient that it would be better for her to remain in hospital so that her condition can be monitored, as results of the stool sample would take 24 hours. Patient was adamant that she would be going home and if needed would self-discharge.
SHO was informed of the situation, who said that he would come and discuss the situation with the patient.
10.30hrs Patient had contacted a member of her family and stated that she would now remain in hospital. Side-room would not be available on AMU until late afternoon. Contact Infection control nurse to ask if it would be ok to transfer that patient into the side-room on MHW and move patient onto the ward.
Matron in attendance who also spoke to the patient and the SHO who had just arrived on the ward,
11.45hrs SHO said that he was happy for patient to be discharged home with a course of Metronidazole,
patient happy to do this.

14.30hrs Patient collected and discharged home.

16.00hrs phone call received from Microbiologist at Royal Free Hospital Dr Tan re: stool results, C-Diff positive patient will require 10-14 day course of Metronidazole, Dr Tan is happy for Team to call patient at home and if there are any further problems to contact Dr Tan on the mobile.

16.10hrs Infection control nurse informed of stool result and said that the patient will need to be contacted at home with result and that if she becomes unwell to contact her GP.

16.20hrs Rang patient at home informed her of results, she said that she feels well but has had two episodes of diarrhoea since returning home, advice given.

05.04.12 15.00hrs Infection control nurse rang and spoke to patient’s GP informing them C-Diff result and arranged for patient to be reviewed by GP.

**Antibiotic Treatment:**

30.04.12 IV Cefuroxine 1.5mg in theatre (stat dose)
30.04.12 IV Cefuroxine 750mg @ 22.00hrs on the ward
31.04.12 IV Cefuroxine 750mg @ 06.00hrs on the ward
04.04.12 PO Metronidazole 400mg @ 13.00hrs on the ward

Patient discharged home with 5 day course of Metronidazole, Microbiologist Dr Tan recommended 10-14 day course.

**Incident date:** 03.04.12

**Incident type:** Clinical

**Specialty:** Margaret Harte Ward

Effect on patient: Distress. Patient was more concerned that she may have to remain in hospital and was adamant that she would be going home as planned.

Severity level:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Severity (1-5)</td>
<td>Likelihood of recurrence at that severity (1-5)</td>
<td>Risk Rating (C = A x B)</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

**Pre-investigation risk assessment**

**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 shared as appropriate.

**The investigation team**

Anna Churchman – Tissue Viability Nurse  
Habibat Olowolusi – Ward Sister Margaret Harte Ward

**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 meet up twice to review the medical notes and to discuss the case.

**Involvement and support of patient and relatives**

The patient was seen by Matron and SHO and contacted at home post discharge. GP was informed.

**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 in this investigation.

**Chronology of events**

At RNOH, the patient was admitted to Margaret Harte Ward on the 30.03.12, was sent to theatre on the same day and was transferred back to the ward after surgery.

It is documented that the patient last opened her bowels on the 30.03.12.

31.03.12 no documentation of bowel movement (am shift)  
31.03.12 Patient complained of feeling nauseated 4mg Ondansetron given, bowels not opened with (pm shelf).  
01.04.12 No documentation of bowel movement.  
02.04.12 Patient complained of nausea, pain and poor appetite, bowels not opened Patient refused Senna but did take 15mls of Lactulose at 22.00hrs. Food chart was commenced.  
03.04.12 Patient had opened her bowels x 2 over night, second episode was documented that the stools were loose, handed over to day-shift that it was not diarrhoea or offensive.  
04.04.12 Offensive diarrhoea x 3 over-night, specimen taken by night staff, site manger informed, barrier nursing commenced.  
04.04.12 Infection Control Nurse informed by day shift that patient has on-going diarrhoea, advised to move patient into a side room if available.  
Stool chart commenced by day shift, patient barrier nursed at bed-space curtains closed, all equipment required kept within bed-space.  
Patient adamant that she would not be transferring to another ward or into a side-room and would be
going home as discussed.
SHO was informed of the situation.
SHO was happy for patient to be discharged home with a course of Metronidazole.
Patient was collected and discharged home at 14.30hrs
Phone call received from Dr Tan Microbiologist at Royal Free Hospital at 16.00hrs that stool sample sent is positive C-Diff and that patient will require 10-14 day course of Metronidazole.
Infection Control Nurse informed of result, patient will need to contact their GP if patient becomes unwell.
Contacted patient at home informed her of the results, she said that she feels well but has had two episodes of diarrhoea since being discharged, advice given.
05.04.12 Infection Control Nurse contacted patient’s GP informing them of the result and arranged for patient to be reviewed by GP.

Detection of incident
04.04.12 16.00hrs Stool sample result were *Clostridium difficile* positive (CDI)

Notable practice
1. As soon as it was evident that the patient had diarrhoea, staff on Margaret Harte Ward commenced barrier nursing.
2. A stool sample was collected and sent to Microbiology on 04.04.12 at 9.00hrs both routine and *C. difficile* tests requested
3. Specimen taken by night-staff, site manager informed and barrier nursing at bed-space commenced.
4. Infection Control Nurse informed, advised to move patient into side-room if available or to contact Angus McKinnon ward where a side-room maybe available.
5. Both Matron and SHO spoke to the patient, as patient was adamant that she would not be remaining in hospital or transferring to another ward.
6. Infection Control precautions adhered to.

Care and service delivery problems
There is no entry in the patient’s case notes to indicate why the antibiotics were given. Furthermore, there is no documentation to indicate that the Microbiologist was consulted for specialist advice and recommendations on the safe use of antibiotics on the affected patient.
There is a need for the Trust to form an Antibiotic Steering Group in order to facilitate compliance with antimicrobials policy and guidance.
Stool chart not commenced until the second day of reported loose stools.

Contributory factors
Antibiotic Treatment:
30.04.12 IV Cefuroxine 1.5mg in theatre (stat dose)
30.04.12 IV Cefuroxine 750mg @ 22.00hrs on the ward
31.04.12 IV Cefuroxine 750mg @ 06.00hrs on the ward
04.04.12 PO Metronidazole 400mg @ 13.00hrs on the ward
Patient discharged home with 5 day course of Metronidazole, Microbiologist Dr Tan recommended 10-14 day course.

Age of Patient (77 years old)

**Root causes**
1. Use of broad spectrum antibiotics

**Lessons learned**
1. Isolation of patients immediately after two episodes of diarrhoea and ensuring that they remain in isolation until 48 hours after passing normal stool.
2. Continued vigilant awareness of the risks associated with antibiotic therapy.
3. Education and training on the use of Bristol stool chart

**Recommendations**
1. In order to maintain *C. difficile* awareness, the medical & nursing staff need to continue with vigilance and awareness 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*
*Trust Board*

**Appendices**
Appendix 1 Action Plan

**Author** Anna Churchman  **Job title** Tissue Viability Nurse  **Date** 06.06.12
### Appendix 2

**Clostridium Difficile on Margaret Harte Ward**  
**ROOT CAUSE ANALYSIS ACTION PLAN**

<table>
<thead>
<tr>
<th>Risk Description</th>
<th>Controls Currently In Place</th>
<th>Consequenc e</th>
<th>Likelihood</th>
<th>Risk Rating ((C \times 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 \times L \text{ including score}))</th>
<th>Progress Action Taken</th>
</tr>
</thead>
</table>
| Prudent use of antimicrobials as stipulated in the national guidance and legislation and policies. | Antimicrobials Policy  
Royal Free Hospital Infection Services | 3 | 4 | High | Nursing staff must seek advice from the Infection Control Nurse regarding patient isolation during working hours (8.30-16.30). If assistance is needed after hours, Consultant Microbiologist must be contacted. Promote antimicrobials stewardship | Aug 2011 | Aug 2011 | Infection Control | 3x 4 = 12 | Ongoing |
| Medical staff to continue seeking Microbiology advice and to review antibiotics vigilantly | 3 | 4 | High | Medical staff to attend MDT meetings on Spinal Injuries Unit on Tuesdays at 12pm. | Aug 2011 | Medical Directors | 3x 4 = 12 | Ongoing |