

Brighton and Sussex University Hospitals
IC008 *Clostridium difficile* Infection

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1. Introduction

Clostridium difficile is the major infectious cause of diarrhoea that is acquired in hospitals in UK, and has public health concern due to the increased number of cases and severity of the disease¹.

The infection has been associated with all classes of antibiotics but highly related to third generation cephalosporins and fluoroquinolones.

Since the introduction of mandatory surveillance in 2006, national targets were set aiding reductions in infections.

BSUH has seen significant reductions in CDI since 2006/7 This policy reflects recent guidance² published by the Department of Health, to facilitate further reductions setting out the framework for the prevention and control of CDI.

2. Purpose

The policy sets out guidance in the management and control of patients with *Clostridium difficile* Infections and its prevention.

3. Scope

This policy applies to all staff (including agency and bank) involved directly or indirectly in the patient's care and the maintenance of their environment

4. Definitions

Healthcare associated Infection(s) HCAI

An Infection acquired via the provision of healthcare in either a hospital or community setting³.

A period of increased incidence (PII) of CDI

Two or more new cases (occurring >48 hours post admission, not relapses) in a 28-day period on a ward²

An outbreak of *C. difficile* infection

Two or more cases caused by the same strain related in time and place over a defined period that is based on the date of onset of the first case.

Outbreaks of CDI can also include increase in the proportion of cases with more severe disease, e.g. requiring colon surgery, and / or more deaths related to CDI²

5 Responsibilities, Accountabilities and Duties.

5.1 All Trust staff

Infection Control is everybody's business, and all BSUH staff are required to:

5.1.1 Comply with the trusts 'Dress Code' policy being 'bare below the elbows' to facilitate effective and hand hygiene whilst in the clinical setting.

5.1.2 Attend the yearly Mandatory Infection Control Training organised by Learning and Development.

5.1.3 Take due care of their own health, safety and welfare at work (Health and Safety at Work act 1974)⁴ and to inform their line managers if an infection control hazard is identified as a risk to themselves or others.

5.2 The Chief Executive (CE) and Trust Management Board

The CE and Trust Management Board:

5.2.1 Have overall responsibility for ensuring that the organisation has the necessary management systems in place to enable the effective implementation of this CDI policy.

5.3 The Director of Infection Prevention and Control (DIPC)

The role of the DIPC in Healthcare⁵ is to:

5.3.1 Support the processes facilitating reductions of CDI, such as antimicrobial stewardship and prescribing, RCA meetings, and, a regular attendee, chairing IPAG and HIPaCC in the absence of the CE.

5.4 The Chief Nurse / The Divisional Chief's, Deputy Chief's and the Associate Directors of Nursing

5.4.1 Responsible for overseeing the implementation of this policy amongst their teams and staff groups.

5.4.2 Take ownership ensuring appropriate antimicrobial practices becomes embedded at the patient level.

5.5 The Nurse Consultant for Infection Prevention & Control / Deputy DIPC

5.5.1 Provide specialist Infection, Prevention and Control advice in all aspect of CDI to the trust as to assist in reducing CDI.

5.6 Consultants and Medical staff

Are to:

5.6.1 Review all antibiotic prescribing during their ward rounds, stopping unnecessary prescriptions and changing those that do not comply with guidelines, teaching and training junior medical staff on appropriate antimicrobial stewardship.

5.6.2 To participate in the Root Cause Analysis of CDI and with the matrons feed back learning to IPAG.

5.6.3 Medical staff completing death certificates must ensure that they include the diagnosis of CDI in either Part I or Part II where relevant.

5.6.4 Ensure that newly diagnosed patients with CDI commence the proforma in appendix 2 and can be accessed at <http://nww.bsuh.nhs.uk/clinical/teams-and-departments/trust-wide->

[teams/infection-prevention-and-control/policies-and-guidelines/forms-and-rca-tools/?assetdetesc13436371=59218](https://www.bsuh.nhs.uk/teams/infection-prevention-and-control/policies-and-guidelines/forms-and-rca-tools/?assetdetesc13436371=59218)

- 5.6.5 Inform the IPCT (x4595) if they see patients with severe CDI diagnose toxic megacolon, or perform surgery for CDI.

5.7 Matrons

Are to:

- 5.7.1 Monitor standards of cleanliness in their clinical areas, participating in the multidisciplinary environmental audits, acting upon results within the designated time frame, leading and driving a culture of cleanliness within their clinical areas.⁶
- 5.7.2 In partnership with the patients consultant (or their representative) lead on the Root cause analysis of *Clostridium difficile* infections identified in their clinical areas, feeding back action plans to IPAG.

5.8 Ward/Department Managers

When notified of patients with CDI:

- 5.8.1 To ensure results are disseminated to the ward staff, and the patient's medical team, instigating infection control precautions, as to minimise the risk of spread to other patients.
- 5.8.2 Ensure accurate stool chart is kept, informing medical staff of changes in the patient's condition.
- 5.8.3 Ensure the patient is aware for the need to isolate and supply them and / or their relatives with a BSUH patient information leaflet.
- 5.8.4 Ensure that the housekeeping staff are aware of increase in cleaning requirements and that ward staff and decontaminating patient equipment as per decontamination policy.
- 5.8.5 To participate in the Root Cause Analysis of CDI infections and feedback when required to IPAG.
- 5.8.6 When notified by the IPC team of periods of increase incidences of CDI, to assist in audits of ward area, implementing action plans in accordance to recommendations from infection control.

5.9 Infection Prevention and Control (IPC) Team

Will:

- 5.9.1 Notify positive CDT results, (Monday to Friday 9-5) to clinical areas, via the telephone or ward visit, advising on infection control measures, recording the advice given on the IPC database
- 5.9.2 Lead on trust wide surveillance of all CDI, reporting new toxin positive

isolates to the HPA electronically via the HCAI Data capture system, and recording on Infection Control spread sheet.

- 5.9.3 Continually observe for periods of increase incidences (PII) of CDI, initiating protocol via emails to ward managers and matrons and the patients consultant recommended by the DH/HPA guidelines.
- 5.9.4 Visit all patients newly diagnosed with positive CDI or CDT positive, undertaking care bundle and feeding back results to ward manager / senior staff nurse, discussing issues as to improve patient outcome.
- 5.9.5 Ensure patients CDI information leaflet is updated in light of new evidence and available on the trust intranet
- 5.9.6 To liaise with the microbiology laboratory during investigations of PII of CDI requesting samples for ribotyping.
- 5.9.7 Participate in the RCA of all CDI monitoring and reporting trends associated with CDI to IPAG and HIPaCC.
- 5.9.8 Reviews all death certificate counterfoils monthly recording the numbers mentioning *C. difficile* in either Part I or Part II. This data is fed back at The Hospital Infection Prevention & Control Committee.
- 5.9.9 To report outbreaks of CDI the local HPU and as a Serious Untoward Incident to the SHA, copying in head of patient safety and head of Communications.
- 5.9.10 Review, develop and update this policy every two years or sooner in light of new evidence.
- 5.9.11 Keep the Hospital Infection Prevention and Control Committee (HIPaCC) informed of any issues that arise with compliance to this policy appraising, the members of any changes to local and national guidance.

5.10 Infection Control Link Practitioners (ICLP)

The Infection Control link Practitioners work with the Infection prevention Control Team to;

- 5.10.1 Lead on the High Impact Intervention Audits in their clinical areas maintaining high standards of infection prevention and control, providing data and uploaded onto the Trust Dashboards in a timely manner.
- 5.10.2 To disseminate the new and updated infection control policies and guidelines to their clinical areas and departments.

5.11 The Infection Control Doctor

Their role is to:

5.11.1 Participate with the rapid review of CDI patients, working with the patient's clinicians advising on treatment options and participating in the Root cause analysis of CDI

5.11.2 Contribute towards the updating of this policy

5.11.3 Inform and disseminate positive CDT results out of hours

5.12 Lead Antimicrobial Pharmacist

5.12.1. Develops and reviews guidelines relating to antimicrobials, monitoring antimicrobial usage & expenditure, co-ordinating audit work and overseeing the implementation of recommendations and facilitating multi-disciplinary education and training initiatives pertaining to antimicrobials.

5.12.2 Attends and contributes towards the multi-disciplinary RCA process for trust apportioned *Clostridium difficile* cases, reviewing antimicrobial prescribing and has associated responsibility for disseminating lessons learnt.

5.12.3 To receive referrals from clinicians, reviewing appropriateness of antimicrobial prescribing.

5.12.4 Chairs monthly Antimicrobial Stewardship Group, and working with the antimicrobial pharmacist to create Trust policies on the use of antimicrobials both for treatment and prophylaxis

5.13 Infectious Disease Team at RSCH / Medical team caring for patient at PRH

5.13.1 To assess newly diagnosed CDT positive patients, assessing disease severity, prescribing treatment and monitoring progress of the patients, and assess their suitability for Grant Ward.

5.13.2 Weekends the covering physician will perform this duty

5.14 Role of Grant ward - See appendix 2

5.15 Consultant in Communicable Disease Control

Their interest and role:

5.15.1 Contributes a wider community perspective of CDI, during HIPaCC, assisting reductions of CDI towards the development and monitoring of the Trusts Infection Control Policies.

5.15.2 Works with the IPC team in the management of outbreaks of infections occurring in the community setting which may have potential impact

upon BSUH and, vice versa.

5.16 The role of the Primary Care Trust

The PCT are fully committed to the prevention of infections, their role is to:

5.16.1 Liaise with, and work in partnership with the trust aiming to reduce HCAI, participating and leading on the management and timely feedback Root Cause Analyses of *Clostridium difficile* infections, sharing actions plans and lessons learned to IPAG.

5.17 Hospital Infection Prevention and Control Committee (HIPaCC).

Will be responsible for:

5.17.1 Ratifying and approving this policy.

5.18 Facilities

5.18.1 To ensure that deep cleans are carried out as per policy, reducing the risk of onward transmission to other patients

5.18.2 To ensure that standards of cleanliness is maintained within the hospital environment, providing reassurance to visitors, patients and other hospital staff.

5.19 Estates

5.19.1 Have systems in place maintaining good state of repair of the environment. To attend HIPaCC discussing issues, updating upon the progress of estates

5.20 Microbiology Laboratory

5.20.1 To perform CDT tests daily on all liquid stools / or stools that take the shape of the container as per standard operation procedures.

5.20.2 To ensure all CDT positive faecal samples are frozen and kept for 12 months and during periods of increase incidence of CDI, or when requested, to send CDT positive samples for ribotyping.

5.20.3 To report all CDT positives samples to HPA electronically

5.21 Role of the pathologist

The pathologist will inform the IPC team if they come across patients undergoing colectomy for CDI cases where the patient died with the infection

6 **Policy**

6.1 **Introduction**

6.1.1 *Clostridium difficile* is an anaerobic bacterium which can cause infection in the colon leading to diarrhoea (CDI). The bacterium produces toxins which damage the colonic mucosa causing illnesses of varying severity. Although some people, including babies, may carry the bacterium without symptoms, some people go on to develop diarrhoea, which in severe cases leads to colitis (inflammation of the colon) and occasionally death.

6.1.2 There are certain groups of people who are particularly at risk of developing CDI such as older people, those who have recently undergone surgery, and people with serious underlying disease, all in association with the recent use of antibiotics. Certain broad spectrum antibiotics are detrimental to the bacteria normally found in the gut, which can increase the risk of CDI. It is not unusual for CDI to recur. This may be a new infection or a failure of resolution of the original infection.

6.1.3 Under certain conditions the *C. difficile* bacterium produces spores, which are excreted in the faeces. These spores are highly resistant to heat, drying and some cleaning agents and can survive in the environment for long periods of time. The hospital environment can become contaminated with spores from patients who are already infected and this places other patients at risk of acquiring the infection.

6.1.4 CDI is diagnosed by detecting the toxins (CDT) produced by the organism in the patient's faeces.

6.1.5 *C. difficile* can cause outbreaks of infection as well as being present at a background level in most hospitals.

6.2 **Prevention of *Clostridium difficile* Infection (CDI) General principles**

6.2.1 **Cleaning the Environment and Equipment**

The patient's environment should be kept as clean and as uncluttered as possible. Particular attention should be paid to toilets and commodes. Chlorine containing disinfectant (Tristel Fuse®) must be used to clean horizontal surfaces daily as part of routine cleaning. Ward staff are to use the Clinell® sporicidal wipes for cleaning all equipment where the patient has been diagnosed with unexplained diarrhoea or CDI.

6.2.1 **Antibiotic Use**

The Trust antimicrobial prescribing guidelines are available on the Intranet and should be followed. The basic principles are that antibiotics should only be used where clearly indicated, the narrowest

possible spectrum antibiotic should be used and the course should be of the minimum necessary duration. Stop dates should be documented when prescribing the course. Advice can be obtained from microbiology/infectious diseases and the antimicrobial/ward pharmacist.

6.2.3 Hand Hygiene

Hands must be washed with soap and water after contact with a patient with known CDI or symptoms suggestive of such. All staff should be 'bare below the elbows'. Watches MUST NOT be worn when giving care and only a plain wedding/civil partnership ring is allowed. Other jewellery MUST NOT be worn. Alcohol gel is ineffective against spores and should not be relied upon when dealing with patients infected with CDI or any diarrhoea that could be infectious in origin.

6.2.4 Isolation of Patients with Diarrhoea

All patients who have diarrhoea that could be infectious in origin should be isolated without waiting for a microbiological diagnosis. They should be placed in a single room with their own toilet or commode. If no single room is available please contact the IPC team for advice.

6.3 Diagnosis of CDI

6.3.1 Laboratory Diagnosis and stool sampling

When clinical staff think that a patient may have infective diarrhoea, only Bristol stool type 6 & 7 should be sent to the laboratory requesting CDT and MCS. The full guidelines for the testing of stool samples can be found on the BSUH Trust intranet at this address:

<http://nww.bsuh.nhs.uk/EasysiteWeb/getresource.axd?AssetID=117682&type=Full&servicetype=Attachment>

6.3.2 The assessment should also involve senior member of nursing staff to discuss other causative factors for diarrhoea such as laxatives, recent enteral feeding and melaena.

6.3.3 If the initial toxin test is negative but CDI is clinically suspected, a further two specimens may be sent for repeat toxin testing. There is no need to retest positive patients in order to demonstrate clearance of toxin.

6.4 Management of the patient with confirmed or suspected CDI

Patients diagnosed with CDI will be taken over by, or managed jointly with the infectious diseases team, depending on the patients other clinical needs and whether they are managed on Grant ward or elsewhere – (see appendix 1).

6.4.1 Isolation

Patients with confirmed or suspected CDI should be isolated in a single room with their own toilet or commode. Some patients will be cohort-nursed on Grant ward.

- 6.4.1 a) Commodes must be thoroughly cleaned and disinfected all over after each use with Clinell® sporicidal wipes.
- 6.4.1 b) Transfer to departments for necessary investigations is appropriate but the ward staff should inform the receiving department of the patient's condition. There may be a shortage of single rooms. The Infection Control Team (ICT) should be contacted for advice about prioritising the use of single rooms. Cohorting of CDI patients may be necessary.
- 6.4.1 c) Patients may be released from isolation when they have been free of diarrhoea for a minimum of 48 hrs **or when, the patients stools have returned to their normal** Do not send specimens for repeat faecal toxin testing as toxin may be present in the bowel for some time after the diarrhoea has resolved.
- 6.4.1 d) Patients with active infection should not be transferred to other wards/hospitals unless clinically essential. This is to avoid spreading the infection to other areas. If in doubt about transferring a patient, the ICT should be contacted for advice.
- 6.4.1 e) When a doctor or nurse discharges a patient, who is recovering from CDI, the GP, nursing home or any other receiving institution must be informed of the diagnosis. This is in case relapse occurs and should be communicated using the appropriate methods including paper and electronic discharge summaries.

6.4.2 Patient equipment disinfection

The environment will be routinely cleaned each day using a Chlorine based disinfectant (Tristel® Fuse). Ward staff will clean all patient equipment using the Clinell® sporicidal wipes. (See Infection Control Policy ICO22 – Decontamination) The curtains will be changed at the terminal clean stage.

6.4.3 Standard Precautions

Staff caring for patients with CDI must wear gloves and disposable plastic aprons. Once the caring activity has been completed gloves and aprons must be removed and hands thoroughly washed with soap and water.

6.4.4 Hand Hygiene

Staff must wash their hands at the 5 moments of care:

- i) before patient contact
- ii) before an aseptic procedure
- iii) after contact with blood / body fluids
- iv) after patient contact

- v) after contact with the patient environment

Patients and visitors should also be encouraged to wash their hands with soap and water. Alcohol gel is not effective against *C. difficile* and so soap and water should be used.

6.4.5 Increased frequency & Terminal Cleaning

The ICT will recommend enhanced cleaning of the isolated patient's environment using Tristel® Fuse and Clinell® sporicidal wipes. (See Infection Control Policy IC022 – Decontamination for further information).

6.4.5a There must be a high standard of cleaning should be carried out during patient's stay, paying particular attention to areas that collect dust (corners, ledges and horizontal surfaces)

6.4.5b On discharge terminal cleaning is required when a CDI patient vacates a single room or designated bay/ward area which has been used for cohort nursing

6.4.5c The Nurse in Charge has responsibility for contacting the Domestic Supervisor to request terminal room cleaning in these situations
The components of terminal cleaning are:

- i) All disposable items should be discarded into a clinical waste bag
- ii) Laundry should be managed according to Trust protocol
- iii) Curtains should be changed
- iv) All horizontal surfaces i.e. window-sills, blinds, table tops, bed-side cabinets, mattresses, bed frame, cotsides, poles and the floor must be cleaned following the Trust's decontamination and bed cleaning policy.
- v) The room should be left to dry before it is used for another patient

6.5 Outbreaks of CDI

The principles of outbreak management are defined in the Major Outbreak Policy (see Infection Control Policy IC005 - Major Outbreak Plan).

The following topics are of specific relevance to *Clostridium difficile* infection:

An increase in the proportion of cases with more severe disease, e.g. requiring colon surgery

More deaths related to CDI

If clinical staff suspect that any of the above may be occurring they should inform the ICT. The ICT may suspect the presence of an outbreak from their surveillance activities (see below).

6.5.1 Outbreak Control Measures

These may include isolation/cohorting of cases, closure of the affected ward, enhanced cleaning, review of antimicrobial prescribing (including

the possible restriction of certain drugs) and re-education on standards of hand hygiene. The IPC team to advise on individual situations

6.6 Period if increase incidence (PII)

If a PII is detected then in accordance with DOH guidance (2008) the following recommendations are initiated by the infection control team:

Recommendation
Urgently inform the clinical director, matron, ward manager and directorate manager
Conduct a weekly <i>C. difficile</i> ward audit using the DOH HII tool by ICN until the score is >90% in three consecutive weeks and there have been no further >48 hour cases of CDI on the ward in that period. Feed back results to matron or ward manager
Carry out weekly antibiotic review on ward using local tools
Clean the whole ward with chlorine-containing agent until no further symptomatic patients are present on the ward. Emphasise that each bed-space needs to be cleaned separately with separate cloths
Use HPA CDRNE to undertake PCR ribotyping
ICT should carry out an automatic review of ward PIIs each week
AN incident meeting should be held as determined by the size and rate of growth of the PII by assessment of the situation by the DIPC and/ or the duty microbiologist with the clinical director and consultants, depending on the number of cases

7. Training Implications

7.1 All new Trust employees and all current Trust staff are required to undertake a Mandatory Infection Control Training, recommended by the Health and Social Care Act 2008 and led by the Learning and Development Department.

7.2 The trust training needs analysis is reviewed yearly by Infection Control and Learning and Development and it is outlined in the policy on Mandatory Training policy

8. Monitoring Arrangements

The DIPC and Nurse Consultant / Deputy DIPC are responsible for continually monitoring the appropriate implementation of Infection Control Policies.

The HIPaCC supports this with a range of information sources such as meeting, audits, surveillance and other relevant reports summarised in the table below:

Measurable Policy Objective	Monitoring / Audit Method	Frequency	Responsibility for performing monitoring	Where is monitoring reported and which groups / committees will be responsible for progressing and reviewing action plans
Incidence of CDI	Surveillance	Daily	ICT	ICT weekly & monthly meetings, IPAG, HIPaCC
Acquisition of CDI, PII & Outbreak recognition	Surveillance	Daily	ICT	ICT weekly & monthly meetings, IPAG, HIPaCC
Root Cause Analysis	RCA documentation	All BSUH acquired CDI	ICT/ Matrons	IPAG
Antimicrobial usage	Usage data	Monthly	Antimicrobial pharmacist	Antimicrobial Stewardship Committee (monthly), IPAG (quarterly)

9. Equality Impact Assessment

An initial screening reveals that this policy does not discriminate against any groups on the basis of race, ethnic origin, nationality, gender, culture, religion or belief, sexual orientation, age or disability.

		Yes/No	Comments
1.	Does the document/guidance affect one group less or more favourably than another on the basis of:	No	
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Gender Identity	No	
	• Marriage and Civil Partnership Status	No	

	<ul style="list-style-type: none"> • Pregnancy and Maternity status 	No	
	<ul style="list-style-type: none"> • Disability - learning disabilities, physical disability, sensory impairment and mental health problems 	No	
2.	Is there any evidence that some groups are affected differently and what is/are the evidence source(s)?	No	
3.	If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable?	No	
4.	Is the impact of the document/guidance likely to be negative?	No	
5.	If so, can the impact be avoided?	No	
6.	What alternative is there to achieving the document/guidance without the impact?	No	
7.	Can we reduce the impact by taking different action and, if not, what, if any, are the reasons why the policy should continue in its current form ?	No	

If you have identified a potential discriminatory impact of this policy, please refer it to [Angeline Boorer, Lead Infection Prevention Control Nurse x 3658], together with any suggestions as to the action required to avoid/reduce this impact. For advice in respect of answering the above questions, please contact [Lead Infection Prevention Control Nurse x 3658].

10. Links to other Trust policies

IC001 – Organisation Framework for Infection Prevention and Control
<http://nww.bsuh.nhs.uk/EasysiteWeb/getresource.axd?AssetID=129776&type=Full&servicetype=Attachment>

IC002 - Standard (Universal) precautions
<http://nww.bsuh.nhs.uk/EasysiteWeb/getresource.axd?AssetID=113614&type=Full&servicetype=Attachment>

IC003 - Hand hygiene <http://nww.bsuh.nhs.uk/clinical/teams-and-departments/trust-wide-teams/infection-prevention-and-control/policies-and-guidelines/policies/>

IC004 – Isolation <http://nww.bsuh.nhs.uk/clinical/teams-and-departments/trust-wide-teams/infection-prevention-and-control/policies-and-guidelines/policies/>

IC 005 – Major Outbreak
<http://nww.bsuh.nhs.uk/EasysiteWeb/getresource.axd?AssetID=84414&type=Full&servicetype=Attachment>

IC022 – Decontamination <http://nww.bsuh.nhs.uk/clinical/teams-and-departments/trust-wide-teams/infection-prevention-and-control/policies-and-guidelines/policies/>

RM 27 - Waste management
<http://nww.bsuh.nhs.uk/search/?q=waste+management>

C907 – BSUH Patient Transfer Policy
<http://nww.bsuh.nhs.uk/EasysiteWeb/getresource.axd?AssetID=128942&type=Full&servicetype=Attachment>

HR17 Dress code
<http://nww.bsuh.nhs.uk/search/?q=dress+code>

11. **Associated Documentation**

BSUH - Our Priorities 2010 – 2011 accessed at
<http://www.bsuh.nhs.uk/about-us/our-priorities/>

12. **References**

1. Investigations into outbreaks of *Clostridium difficile* at Stoke Mandaville Hospital, Buckinghamshire Hospitals NHS Trusts. Healthcare Commission July 2006 available at:
http://www.cqc.org.uk/db/documents/Stoke_Mandeville.pdf
2. Department of Health *Clostridium difficile* Infection. How to deal with the problem [online] 2008 available at:
http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1232006607827
[accessed 24.03.2011]
3. Department of Health. The Health and Social Care Act code of practice for health and adult social care on the prevention and control of infections and related guidance. 2008 available at:
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_110435.pdf
4. Health and Safety at work Act 1974 accessed at
<http://www.hse.gov.uk/legislation/hswa.htm>
5. Department of Health. Winning ways. Working together to reduce Healthcare Associated Infection in England. Report from the Chief Medical officer. 2003. Available at:
http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/fs/en?CONTENT_ID=4095070&chk=J9Gyqw

6. Department of Health. Towards cleaner hospitals and lower rates of infection: A summary of action. 2004. Available at:
<http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/HealthcareAcquiredInfection/HealthcareAcquiredGeneralInformation/fs/en>

Appendix 1

Admission Criteria for Grant Ward (Isolation Ward)

1 Transfers from wards within RSCH site

1.1 Patients will be considered for transfer into the cohort bays from wards within the RSCH site if they have active diarrhoea AND positive *Clostridium difficile* toxin (CDT) test.

Diarrhoea clarification:

Type 6 or 7 on the Bristol Stool Chart

1.2 Patients with active diarrhoea but no positive CDT test will be managed according to current infection control practice (ideally nursed within a side room, or cohort nursed in a bay in the absence of a side-room) but will not be eligible for routine transfer to the Isolation Ward.

1.3 Patients otherwise eligible for transfer to the isolation ward who require specialist medical or nursing skills not available on Grant ward, or who, during their admission to Grant ward, develop conditions requiring specialist medical or nursing skills not available on Grant ward, will be managed on an appropriate specialist ward. Examples of conditions which may require specialised care include tracheostomy, decompensated liver disease, total parenteral nutrition, and unstable coronary artery disease. This is not an exhaustive list. It is the responsibility of referring wards to disclose all aspects of patients' conditions to Grant ward at the time of referral to allow the suitability of patients to be assessed. Where there is uncertainty whether a patient can be safely managed on the Isolation Ward, one of the consultant physicians for the Ward will make the final decision in consultation with senior nursing staff.

1.4 Patients with diarrhoea who have a very strong clinical suspicion of *Clostridium difficile* infection (e.g. presence of pseudomembranous colitis on sigmoidoscopy) but who have no positive CDT results may exceptionally be transferred to the Isolation Ward at the discretion of the consultants in charge and with the prior agreement of the infection control team. Such patients may not be admitted to the cohort bays, but would have to be admitted to a side room, and such transfers would only be permitted if there were sufficient side rooms for recovering patients.

- 1.5 Patients who have been discharged from the isolation ward and have suffered a relapse may be considered for readmission to the isolation ward with or without further CDT testing at the discretion of the Consultant in charge and the ICT.

2 Direct admissions from Emergency Department or General Practitioners

- 2.1 Patients diagnosed with CDI in the community may be eligible for direct admission to the isolation ward and should be discussed with the infectious diseases SpR in the first instance.

3 General considerations

Admission to Grant ward must be approved by the Ward Consultant and Infection Control. Out of hours admission must be approved by on call medical team, nurse in charge on the isolation ward and clinical site manager.

4 Ward stay and discharge criteria

- 4.1 Patients will remain on the ward for as long as they have persisting diarrhoea, and require in-patient treatment of a level that can be given on Grant ward. If a patient requires therapy of a type that cannot be delivered safely on Grant ward they should be transferred to an appropriate clinical setting, with appropriate infection control practice to limit the spread of *Clostridium difficile* to other patients.
- 4.2 If a patient's condition improves such that they can be discharged from Grant ward to their own home or to another community setting this discharge can proceed.
- 4.3 Once a patient has remained free of diarrhoea for 48 hours and passed normal stool they may be transferred to an appropriate ward under the care of the team initially responsible for their care.

Appendix 2

Name:

DOB:

Unit Number

Date:

***Clostridium difficile* Infection (CDI) is defined by the presence of diarrhoea (>2 loose stools per 24 hour period) and *Clostridium difficile* toxin (CDT) in the stool.**

ASSESSMENT OF PATIENTS WITH DIARRHOEA FOR POSSIBLE CDI

- CDI should be suspected in any hospitalised patient passing >2 loose or liquid (Bristol Stool Chart 6 or 7) stools per day.
- Stool should be sent for CDT testing within 24 hours of CDI being suspected.
- Three CDT-negative stool samples are required to exclude CDI.
- Where there is a strong clinical suspicion of CDI empiric therapy may be indicated before stool results are available. This should be discussed with micro / ID.

MANAGEMENT OF PATIENTS WITH CDI

All patients in the Trust with a diagnosis of CDI should be managed according to this pathway irrespective of whether they are on Grant ward or not. They should remain on this pathway until 48 hours after cessation of diarrhoea.

The pathway consists of:

- **This front sheet**
- **Immediate care checklist**

- **Severity and risk assessment guidelines**
- **Management guidelines**
- **Daily record sheets**

Immediate Care

Each of the following should be actioned and signed off.

Nursing Care

	Sign	Date
Patients must be referred for nutritional assessment on the first working day following CDI diagnosis		
Patients must be referred for wound-care assessment on first working day following diagnosis		
Patients must be started on a fluid chart.		
Patients must be started on a Bristol stool chart.		

Medical Care

	Sign	Date
All patients must have a full clinical examination at the time CDI is diagnosed. This should include the examination of the central nervous system and a 30 point mental test score, assessment of hydration status, swallow and skin, especially pressure areas.		
Bloods must be sent for FBC, U+Es, LFTs and CRP within 24 hours of diagnosis		
Assessments of CDI severity and risk of progression to severe disease (see below) must be carried out on the day of diagnosis.		
Antibiotics other than for the treatment of CDI must be stopped or reviewed in conjunction with micro / ID and the source clinical team.		
The need for drugs which increase risk of CDI should be reviewed, in particular drugs which raise gastric pH, especially PPIs and antiperistaltic agents (e.g. loperamide)		
Specific therapy for CDI must be started on the day of diagnosis.		
Patients with any markers of severity should be discussed with the consultant covering Grant ward.		
Resuscitation status must be reviewed within 24 hours of CDI diagnosis.		

CDI RISK AND SEVERITY ASSESSMENTS

Patients should have assessments of CDI severity and risk of progression (to severe disease) on the day of diagnosis of CDI and each day thereafter until cessation of diarrhoea.

Patients will be categorised as:

- Non-severe CDI, low risk of progression
- Non-severe, high risk of progression
- Severe CDI

Severity assessment

- Patients should be considered as having severe disease if any of the following apply
 - Stool >5 per 24 hours
 - Bloody stool
 - Temp <36 or >38.5°C
 - Pulse >100 <60 (unless other likely causes exist)
 - MAP <100 (unless other likely causes exist)
 - Abdominal pain / distension
 - Signs of peritonism or ileus
 - WBC >15 / <5
 - Albumin <25
 - Acutely rising creatinine (>50% above base-line)

Risk assessment

- Patients should be considered as low risk of progression to severe disease if all of the following apply
 - No NG / PEG tube
 - No recent surgery
 - No immunosuppressive Rx
 - No known malignancy
 - Normal renal function
 - Not diabetic
 - HIV negative

CDI TREATMENT

First and second line treatment regimens for CDI are as per BSUH guidelines on the intranet. The following guidelines clarify and extend these to the management of patients with complex or severe disease.

- The standard duration of CDI treatment is 14 days. Treatment may be discontinued at 10 days provided there has been no diarrhoea for 48 hours.

First line therapy

First episode of proven (CDT positive) diarrhoea AND non-severe CDI AND low risk of progression

- **Metronidazole orally 400mg tds**
- For patients whose oral route is compromised (e.g. nil-by-mouth, vomiting, large aspirates), use **Metronidazole IV 500mg tds** (convert to oral as soon as practicable).

Second line therapy

Failure of first line therapy (no improvement after 3-5 days) OR severe CDI at any stage OR at risk of CDI progression

- **Vancomycin orally 125mg qds** and discuss with the infectious diseases team*
- For patients with ileus or toxic megacolon, a combination of **Metronidazole IV 500mg tds & intraluminal vancomycin[§]** should be considered in discussion with the infectious diseases team*.

- Increase to vancomycin 250mg qds in those failing on vancomycin 125mg qds therapy (no improvement after 3-5 days)
- Patients unable to take oral medication should be considered for nasogastric / PEG tubes

§ - Vancomycin 1g in 1L of sodium chloride 0.9% instilled rectally via flexi-seal or 3-way 18G foley catheter with 30mL balloon and clamped for 60 minutes every 4 – 12 hours.

Random vancomycin levels should be monitored every 48 hours

Relapsing disease

- **First relapse** should be treated with vancomycin as per second line therapy
- **Second relapse** should be treated with **vancomycin orally 500mg qds and discussed with the infectious diseases team***.
- Patients on vancomycin 500mg qds should have **random vancomycin levels** monitored every 48 hours (reduce dose to 250mg qds if >15mg/L).

Life-threatening disease

Patients considered to have life-threatening disease should be started on **vancomycin orally 500mg qds** and discussed with the infectious diseases team*

<p>* The infectious diseases team may be contacted during normal working hours on bleep 8012 (F1) or 8045 (Registrar). Out of hours contact the microbiology and infectious diseases on-call via switchboard.</p>
