Policy Objective

To provide Healthcare Workers (HCW) with details of the care required to prevent cross-infection in patients with Clostridium difficile Infection (CDI).

This policy applies to all staff employed by NHS Greater Glasgow & Clyde and locum staff on fixed term contracts and volunteer staff.

KEY CHANGES FROM THE PREVIOUS VERSION OF THIS POLICY

- Additional reference
- Addition to Stool chart:

Document Control Summary

<table>
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<tr>
<th>Approved by and date</th>
<th>Board Infection Control Committee 18th May 2015</th>
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<tr>
<td>Date of Publication</td>
<td>18th May 2015</td>
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<tr>
<td>Developed by</td>
<td>Infection Control Policy Sub-Group 0141 201 3839</td>
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<tr>
<td>Related Documents</td>
<td>Standard Infection Control Precautions (SICPs) (HPS National IPC Policy)</td>
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<td>NHSGGC Hand Hygiene Policy</td>
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<td>NHSGGC Outbreak Policy</td>
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<td>NHSGGC Personal Protective Equipment Policy</td>
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<td>NHSGGC SOP Cleaning of Near Patient Equipment</td>
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<td>NHSGGC SOP Terminal Clean of Isolation Rooms</td>
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<td>NHSGGC SOP Twice daily Clean of Isolation Rooms</td>
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<td>Implications of Race Equality and other diversity duties for this document</td>
<td>This policy must be implemented fairly and without prejudice whether on the grounds of race, gender, sexual orientation or religion.</td>
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<tr>
<td>Lead Manager</td>
<td>Board Infection Control Manager</td>
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<td>Responsible Director</td>
<td>Board Medical Director</td>
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The most up-to-date version of this policy can be viewed at the following website:
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1. Responsibilities

**Healthcare Workers (HCWs) must:**

- Follow this policy.
- Inform their line manager if this policy cannot be followed.
- Must ensure leaflets and infection control care plans are available at all times.
  1. *Clostridium Difficile – Information for Patients and Carers*
  2. *Clostridium Difficile – Some Facts*
  3. *Clostridium Difficile – Care Plan*

**Senior Charge Nurse (SCN) must:**

- Ensure that the care plan is in place.
- Ensure that written information is available for patients and relatives.

**Managers must:**

- Support HCWs and Infection Control Teams (IPCTs) in following this policy.
- Cascade new policies to clinical staff after approval by the Board Infection Control Committee (BICC).

**IPCTs must:**

- Keep this policy up-to-date.
- Provide education opportunities on this policy.
- Monitor epidemiology of *Clostridium difficile* Infection (CDI) within facility(ies) and advise on infection control precautions as necessary.
### 2. General Information on *Clostridium difficile* Infection (CDI)

| **Case definition** | A case of *Clostridium difficile* Infection (CDI) is defined as any patient in whose stool *C. difficile* toxin has been identified at the same time they have experienced diarrhoea not attributable to any other cause; or from patients whose stool *C. difficile* has been cultured at the same time as they have been diagnosed with pseudomembranous colitis (PMC). Health Protection Scotland (2009)

A severe case of CDI is defined as any patient with CDI who:

- was admitted to ICU for treatment of CDI or its complications;
- had endoscopic diagnosis of PMC with or without toxin confirmation;
- had surgery for the complications of CDI (toxic megacolon, perforation or refractory colitis);
- had persistent CDI where the patient has remained symptomatic and toxin positive despite two courses of appropriate therapy;
- has died within 30 days following a diagnosis of CDI where it is recorded as either the primary or a major contributory factor on the death certificate.

All cases defined as severe must have a sample sent to the CDI Reference Laboratory.

*NB*: The normal bowel pattern of patients with chronic bowel conditions may be loose and *C. difficile* should be considered if changes in clinical presentation dictate*.  

| **Communicable Disease/ Alert Organism** | *C. difficile* is a Gram positive, anaerobic, spore-forming organism implicated in CDI and PMC. The overgrowth of the organism within the large intestine and toxin production causes cellular damage and increased fluid accumulation in the gut. The main predisposing factors for CDI in adults are acquisition of the organism and exposure to antibiotics; notably with cephalosporins, clindamycin, broad-spectrum penicillins and fluoroquinolones. *C. difficile* is part of the... |
normal flora of up to 3% of the adult population and up to 20% in hospital populations.

### Clinical Condition

Clinical onset of CDI often occurs when patients are on antibiotics, or within 4 weeks and up to 12 weeks of finishing a course of antibiotics.

Patients may be colonised with *C. difficile* without symptoms.

- **CDI** may present with malaise, abdominal pain, nausea, anorexia, watery diarrhoea, low-grade fever, and a peripheral leukocytosis. Colonoscopy reveals a non-specific diffuse or patchy erythematous colitis without pseudomembranes.

- **Pseudomembranous colitis (PMC)** Sigmoidoscopy reveals raised yellow/orange plaques from 2-10mm in size scattered over the colorectal mucosa. Patients with PMC have a more serious illness than CDI. Diarrhoea may also contain blood and mucous.

- **Relapse** of CDI occurs in 15-20% of patients after discontinuation of treatment. One study reported 33% was due to re-infection with a new strain and 67% due to relapse with the original strain. Relapse can occur up to three months after the initial infectious episode.

**NB:** Life-threatening symptoms develop in 1.2-3.2% of patients with CDI. This disease is a very important co-morbidity in frail, elderly patients and can have high in-patient mortality.

### Mode of Spread

There is evidence of both direct and indirect spread through the hands of HCWs and patients; and environmental contamination via equipment and instruments, e.g. commodes, bedpans and washbowls. *C. difficile* produces spores which can survive for long periods in the environment. Environmental cleaning is paramount.

**NB:** Studies have shown CDI may be present on toilets, bedpans, floors, telephones, call buttons, scales, fingernails, fingertips.

### Incubation period

Up to 12 weeks.
### Clostridium difficile Infection (CDI) Transmission Based Precautions

#### Notifiable disease
No.

#### Persons most at risk
- Patients currently on antibiotics or patients who have had antibiotic therapy within the last 8 weeks.
- Increased age (over 65 years).
- Prolonged stay in healthcare settings.
- Serious underlying disease.
- Surgical procedures (in particular bowel procedures).
- Immunocompromised conditions.
- Use of proton pump inhibitors, e.g. omeprazole, lansoprazole.

#### High-risk environment
Adult wards where antibiotic use is high.

#### 3. Transmission Based Precautions for CDI

<table>
<thead>
<tr>
<th>Antibiotics</th>
<th>Antibiotic prescribing should be in accordance with the NHSGGC Infection Management Guidelines. Prescribing should be regularly monitored and feedback should be returned to prescribers as appropriate.</th>
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</table>
|             | - [NHSGGC Antimicrobial Prescribing Policies](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)  
|             | - [The Management of Suspected Clostridium difficile Infection (CDI) in Adults](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control) |

<table>
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<tr>
<th>Care Plan available</th>
<th>Yes. <a href="http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control">Clostridium difficile Care Plan</a>.</th>
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<tr>
<th>Clinical Waste</th>
<th>As per NHSGGC Waste Policy.</th>
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<tr>
<th>Contacts</th>
<th>No specific contact category. As normal send faecal specimens for C. difficile detection from any patient who has, or develops loose stools.</th>
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<tr>
<th>Crockery / Cutlery</th>
<th>No special requirements.</th>
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The most up-to-date version of this policy can be viewed at the following website: [http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)
**Clostridium difficile Infection (CDI) Transmission Based Precautions**

The most up-to-date version of this policy can be viewed at the following website:

### Domestic Services/ Facilities

Domestic Assistants to clean single isolation rooms and/or bed space equipment twice daily using chlorine based detergent and dedicated cleaning materials, ensuring that all surfaces are cleaned with colour coded disposable cloths.

Domestic Assistants must wear plastic apron and gloves for duties in single rooms. Gloves and apron to be discarded as clinical waste on completion and hands to be washed on leaving the single rooms. Refer to [SOP Twice Daily Clean of Isolation Rooms](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control).

If domestic staff share a DSR consideration should be given to separating or moving cleaning equipment into the closed ward to avoid sharing equipment with other wards.

### Equipment & Patient Environment

To minimise the risk from contaminated environment or equipment, all equipment and the environment must be kept thoroughly clean and decontaminated with chlorine based detergent and dried.

Patient equipment, e.g. commode, BP cuff, washbowl should be allocated to the affected patient until the patient is no longer considered infectious. Consider single-use or single patient use equipment. Commodes should be decontaminated after each use with chlorine based detergent.

Please refer to the following:

- [NHSGGC SOP Cleaning of Near Patient Equipment](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)
- [NHSGGC Decontamination Policy](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)
- [NHSGGC SOP Twice Daily Clean of Isolation Rooms](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)

Staff should pay particular attention to frequently touched surfaces, e.g. door handles, bed tables, call bells. These surfaces should be decontaminated twice daily or if visibly soiled, with chlorine based detergent.

Domestic staff should be informed by the nurse in charge of the ward if there is a patient in isolation/ bed space that requires twice daily cleaning.

### Exposure

HCWs must avoid exposure by wearing Personal Protective Equipment (PPE), i.e. plastic aprons and gloves, to prevent contact with faeces or contaminated environment/ equipment. Refer to the NHSGGC [Hand Hygiene Policy](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control) and [PPE Policy](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control).
**Hand Hygiene**

Alcohol gel hand rub and chlorhexidine are not effective against CDI: Soap and water must be used for all patients with loose stools. Particular attention should be paid to hand washing of patients following the use of the toilet, after an incontinent episode and before meals.

Visitors should also be instructed to wash their hands with soap and water after visiting a patient with CDI.

Hands are the most important means of transmission of CDI from patient-to-patient. Hands must be decontaminated before and after each direct patient contact, before an aseptic task, after exposure to blood or body fluids and after contact with the environment regardless of whether PPE is worn.

**Health Protection Scotland (HPS) Trigger Tool**

The Health Protection Scotland (HPS) Trigger Tool must be completed by the ICT and Clinical Staff within the area CDI was acquired if there are two cases of HAI CDI in a ward or area in a two-week period. The antimicrobial pharmacist will be asked to conduct a review of antimicrobial prescribing within the area as part of this process.

**Isolation**

Allied Health Professionals (AHPs) visiting the areas should be informed as soon as possible of patients in isolation. A side room is required for all patients. If a side room is unavailable the ICT will undertake a risk assessment and advise where to nurse the patient.

In some instances the patient’s clinical condition may not support the placement of patients in a side room; if this is the case the ICT should be informed and the reasons documented in the infection control notes. Clinical staff within the clinical area must also document the reasons in the patient’s clinical notes/ case notes. ‘Bed blocking’ may be considered by the ICT based on a local risk assessment. If for clinical reasons the patient’s door is left open then a risk assessment with regards to this must also be recorded in the patient’s clinical notes.

Precautions should continue until the patient has been asymptomatic for 48 hours and bowel movements have returned to normal or, on the advice of a member of the ICT.

Cohorts should only be arranged once decision has been made by the ICT based on diagnosis. Doors should be closed. If possible you should consider continuing isolation until the patient has been discharged from hospital.

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| Last Offices | No special requirements. See SOP for Last Offices. |
| Linen | Treat as fouled/infected. Place in a water soluble/alginate bag then into a clear plastic bag and then into a laundry bag. Clean linen should not be stored in the room. |
| **Moving between wards, hospitals and departments (including theatres)** | Except in clinical emergencies, transfer of patients who have not been symptom-free for 48-hours is not advisable without prior consultation with the ICT. Prior to approved transfers, inform nursing and medical staff in the receiving department of the patient’s condition. Please follow SOP Terminal Clean of Isolation Rooms. |
| Notice for Door | Yes. In Mental Health Services (MHS), on advice of ICT. |
| Outbreaks | Outbreaks are likely if these infection control precautions are not followed. Refer to the NHSGGC Outbreak Policy. |
| Patient Clothing | Whilst patients are symptomatic they should be advised to wear hospital gowns. If relatives or carers wish to take personal clothing home, staff must place soiled clothing into a domestic alginate bag and staff must ensure that a Home Laundry Information Leaflet is issued. Nursing staff should also refer to the following document: Patients Clothing Bags for Contaminated Laundry – Information for Clinical Staff |
| **NB:** It should be recorded in the nursing notes that both the advice and information leaflet has been issued. |
| Patient Information | Inform the patient or the patient’s relative/carer of their condition and the necessary precautions if required. Answer any questions and concerns they may have. Patient Information Leaflets are available from the ICT and can also be downloaded. |
| **NB:** It should be recorded in the nursing notes that the information leaflet has been issued. ICTs are available to speak to patients or relatives/carers if required. |

The most up-to-date version of this policy can be viewed at the following website: [http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control)
## Personal Protective Equipment (PPE)

Disposable plastic aprons and gloves should be worn for direct patient contact; handling blood and body fluids; and contact with contaminated environment/equipment. Ensure hand hygiene is performed using liquid soap and water before donning and after removing PPE.

## Precautions required until

Precautions should continue until the patient has been asymptomatic for 48 hours and bowel movements have returned to normal or, on advice of a member of the ICT.

If symptoms recur, reinstate precautions immediately and send further specimens.

## Procedure Restrictions

None. See moving between wards, hospitals and departments (including theatres).

## Reporting of Severe Cases of CDI

### Deaths due to CDI (Underlying or Contributing)

Infection Control Nurses (ICNs) will check daily (Monday - Friday) on the condition of patients with CDI until discharged from infection control and thereafter weekly via the patient administration system. Patients who have died will have their cause of death reviewed as soon as possible via the ward death certificate records.

If death certificate records are not available, the lead ICN will contact the General Manager (GM) for the service, and advise them that the records are not available. The Co-ordinating Infection Control Doctor (CICD), Infection Control Manager (ICM), Assistant Director of Nursing Infection Control (ANDIC) and; GM, Clinical Services Manager (CSM) and Lead Nurse for the area must be informed of all patients who died in hospital who are or who have been positive for CDI during their current admission, and the cause of death if available.

Medical staff completing a death certificate in which CDI is noted (part 1 or 2) should discuss this with the consultant in charge of the patient’s clinical care and refer case to the Procurator Fiscals Office. If CDI is placed on part 1, medical staff should inform the CSM and GM for the area.

Medical staff should familiarise themselves with NHSGGC Guidance on the Completion of Medical Certificates of Cause of Death.
### Risk Assessment required

Yes. A risk assessment of patient and environment will be undertaken by the ICT.

### Clinical Review

A Clinical Review is required if the patient:

- was admitted to ITU for treatment of CDI or its complications
- had endoscopic diagnosis of pseudomembranous colitis with or without toxin confirmation
- had surgery for the complications of CDI (toxic megacolon, perforation or refractory colitis)
- died within 30 days following a diagnosis of CDI where it is recorded as either the primary or a major contributory factor on the death certificate
- had persisting CDI where the patient has remained symptomatic and toxin positive despite two courses of appropriate therapy

Referral of severe cases onto Datix is the principle responsibility of ICTs however if a clinician suspects a severe case of CDI they can also log this onto Datix for review.

### Screening Staff

Patient to HCW spread is unlikely however HCWs with diarrhoea should not attend work. Faecal specimens should be submitted to their GP.

### Severity Assessment

Patients should have severity assessment carried out daily by medical staff until patient is asymptomatic for 48 hours and has passed a normal stool.

Severity markers include:

- Temperature of >38.5°C
- Suspicion of PMC, toxic megacolon, ileus
- Colonic dilatation in CT scan/ abdominal x-ray >6cm
- WBC> 15 cells/mm³
- Creatinine> 1.5 x baseline

Template for severity assessment is available from the ICT. Please see [The Management of Suspected Clostridium difficile Infection (CDI) in Adults](http://www.nhsggc.org.uk/your-health/public-health/infection-prevention-and-control) to determine antimicrobial therapy.

If for clinical reasons the severity assessment is not deemed necessary, e.g. patient requires end of life care; this should be documented in the patient’s notes.
**Specimens required**

Send faecal specimens from any patient who has loose stools if no other cause of diarrhoea is known. If negative and loose stools persist, another two samples should be sent at 48-hour intervals. Relevant clinical information must be supplied with the specimen.

Stool specimens should be obtained as soon as possible after onset of diarrhoea. Toxin testing should only be performed on stool specimens that conform to the shape of the container. See *Appendix 1*.

- Send faecal specimens from patients who develop loose stools – mark the form for *C. diff* toxin.
- There is no requirement to send clearance specimens from patients who become asymptomatic.
- Only when a relapse of CDI is suspected should you repeat the toxin testing and exclude other potential causes of diarrhoea, and only after 14 days of treatment.
- Specimens should not be sent whilst patient is on treatment.

Stool specimens for all CDI cases should be stored in the microbiology laboratory for a period of three months.

**Specimens – Mark as “Danger of Infection”**

No.

**Stool Charts**

It is the responsibility of staff within the area to record signs and symptoms of infection as appropriate, e.g. Bowel Movement Chart, Appendix 1. The date, time, size and nature of the stool should be recorded while symptomatic and continued until discharge in order to reduce the risk of cross infection.

**Surveillance**

Surveillance of CDI is mandatory in Scotland and is reported to HPS by the Diagnostic Laboratory.

Local surveillance in NHSGGC is returned to wards with a prevalence of CDI monthly using Statistical Process Control Charts (SPCs). The trigger for action is when the numbers in a ward reach the upper control limit in the SPC. SPCs are not a substitute for local referral by clinical staff and ICTs but
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| **Terminal Cleaning of Room** | Follow SOP for Terminal Clean of Isolation Rooms. If isolation is discontinued and the patient remains in hospital, consider moving the patient to a new bed-space. This will allow the patient’s bed, bed locker and bed table to be decontaminated thoroughly. These items can be expected, without cleaning, to remain contaminated.  

**NB:** relapse and re-infection from the environment can be as high as 20% in patients with CDI.  

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<td><strong>Visitors</strong></td>
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should be used to monitor trends and promote quality improvement.
4. Evidence Base


Healthcare Commission. Investigation into outbreaks of Clostridium difficile at Maidstone and Tunbridge Wells Hospital NHS Trust. (2007)

Healthcare Commission. Investigation into outbreaks of Clostridium difficile at Stoke Manderville Hospital Buckinghamshire Hospitals NHS Trust (2006)


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Appendix 1 – Bowel Movement (adapted from the Bristol Stool Scale)

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