**SOP Objective**

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

This SOP 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**

**Document Control Summary**

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| Approved by and date | Board Infection Control Committee 18th August 2022 |
| Date of Publication | 22nd August 2022 |
| Developed by | Infection Control Policy Sub-Group |
| Related Documents | National Infection Prevention and Control Manual<br>NHSGGC SOP CDI (Adults)<br>NHSGGC Hand Hygiene Guidance<br>NHSGGC Outbreak Incident Management Plan<br>NHSGGC SOP Cleaning of Near Patient Equipment<br>NHSGGC SOP Terminal Clean of Ward/Isolation Rooms<br>NHSGGC SOP Twice daily Clean of Isolation Rooms<br>Antimicrobial Prescribing Policies |
| Distribution/ Availability | NHSGGC Infection Prevention and Control web page:<br>www.nhsggc.scot/hospitals-services/services-a-to-z/infection-prevention-and-control |
| Lead Manager | Director Infection Prevention and Control |
| Responsible Director | Executive Director of Nursing |

**CONTENTS**

## CDI Paediatric Aide Memoire

**Consult SOP and isolate in a single room with**:

- ✓ ensuite / own commode
- ✓ door closed
- ✓ IPC yellow sign on door
- ✓ dedicated equipment
- ✓ Bowel Movement Record
- ✓ **Care Checklist** completed daily
- ✓ Daily Severity scoring to be completed by medical staff

**Patient Assessed Daily**

**NO**

Patient has been asymptomatic for >48 hours and bowel movements have returned to patients normal

**YES**

- ✓ Undertake terminal clean of room
- ✓ Stop isolation
- ✓ Continue stool chart until discharge

**SOP - Guidelines for patients in isolation:**

**Hand Hygiene**: Liquid Soap and Water

**PPE:** Disposable gloves and yellow apron

**Patient Environment:** Twice daily chlorine clean

**Patient Equipment:** Chlorine clean after use and at least on a twice daily basis

**Laundry:** Treat as infected

**Waste:** Dispose of as Clinical / Healthcare waste

**Incubation Period:** up to 12 weeks

**Period of Communicability:** until 48 hours asymptomatic and a normal stool passed

**Notifiable disease:** Yes

**Transmission route:** direct, indirect contact

## 1. Responsibilities

**Healthcare Workers (HCWs) must**:

- Follow this SOP.
  Commence a CDI Care Checklist while patient is symptomatic, update daily and complete the risk assessment for any aspect of transmission based precautions (TBP) for CDI that cannot be implemented

  **Clostridioides *Difficile* – IPC Care checklist**

- Inform their line manager and a member of the Infection Prevention and Control Team if this SOP cannot be followed.
- Provide written and verbal information on CDI for patients and their relatives as appropriate

  **Clostridioides Difficile Fact Sheet**

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

- Ensure that the IPC Care checklist is in place while patient is deemed infectious.
- Ensure that written information is provided / available for patients and relatives.
- Ensure a failure to isolate risk assessment is in place if any aspect of TBPs for CDI cannot be implemented

**Managers must**:

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

**Infection Prevention and Control Teams (IPCTs) must**:

- Keep this SOP up-to-date.
- Provide education opportunities on this SOP.
- Monitor epidemiology of *Clostridioides difficile* Infection (CDI) within healthcare facility(ies) and advise on infection prevention and control precautions as necessary.
- Advise and support HCWs to undertake a Risk Assessment if unable to follow this SOP.

**Occupational Health Service (OHS) must:**

- Advise HCW regarding possible infection exposure and return to work issues as necessary

## 2. General Information on *Clostridioides difficile* Infection (CDI)

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| ***Communicable Disease/ Alert Organism*** | Clostridioides difficile is a Gram positive, anaerobic, spore forming, toxin producing gastrointestinal bacillus. Recent studies have shown that C. difficile is an emerging pathogen in the paediatric setting, causing a range of illness; from mild diarrhoea to life changing conditions such as pseudo-membranous colitis, toxic megacolon, intestinal perforation and septic shock. It is imperative that clinical judgement is exercised in order that aetiologies are appropriately investigated. |
| ***Case Definition*** | A child (3-16 years of age) has a diagnosis of CDI if they have a stool specimen positive for CD toxin, diarrhoea (Bowel Movement Record 5-7) and one or more of the following:<br>• Significant co-morbidities i.e. haematology/oncology ; gastrointestinal<br>• Severe GI disease with bloody diarrhoea and an unlikely alternative diagnosis<br>• Strong clinical suspicion<br>• Antibiotic therapy in the last 4 weeks (especially ciprofloxacin) |
| ***Case Definition : Determination of source*** | Hospital acquired CDI is defined as when a patient has had onset of symptoms at least 48 hours following admission to a hospital<br><br>Healthcare associated CDI is defined as when a patient has had onset of symptoms up to four weeks after discharge from a hospital<br><br>Indeterminate cases of CDI is defined as a patient who was discharged from a hospital 4–12 weeks before the onset of symptoms.<br><br>Community associated CDI Is defined as a patient with onset of symptoms while outside a hospital and without discharge from a hospital within the previous 12 weeks – or with onset |

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| | of symptoms within 48 hours following admission to a hospital without stay in a hospital within the previous 12 weeks |
| ***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. |
| ***Incubation Period*** | Potentially up to 12 weeks. |

### 3. Transmission Based Precautions for CDI

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| ***Accommodation (Patient Placement)*** | The patient should be placed in a single room, preferably with ensuite or own commode. The door to the room should be closed when not in use and a yellow IPCT sign placed on the door. If a side room is unavailable the IPCT will help the clinical team to undertake a risk assessment and advise where to nurse the patient.<br><br>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 IPCT. |
| ***Care Checklist available*** | Yes.<br>CDI Care Checklist |
| ***Clinical/ Healthcare Waste*** | All non-sharps waste should be designated as Healthcare/Clinical Waste (HCW) and placed in an orange clinical waste bag within the room. Please refer to the NHSGCC Waste Management Policy |
| ***Contacts*** | Specimens should not be sent from patients deemed to be contacts unless they develop loose stools, where there is no other cause for this. |
| ***Domestic Services/ Facilities*** | Domestic staff must follow the NHSGGC SOP for Twice Daily Clean of Isolation Rooms<br>Cleans should be undertaken at least four hours apart |

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| ***Equipment*** | Patient equipment, e.g. commode, BP cuff, washbowl should be allocated to the patient until no longer considered infectious. Consider single-use or single patient use equipment. Commodes should be decontaminated after each use with chlorine based detergent, 1,000 ppm, with 10 minute contact time.<br><br>Twice Daily Clean of Isolation Rooms SOP |
| ***Hand Hygiene*** | **Alcohol gel hand rub and chlorhexidine are <u>not</u> effective against CDI: Soap and water must be used for all patients with loose stools.**<br><br>Hand hygiene is the single most important measure to prevent cross infection with CDI. Hands must be decontaminated before and after each direct patient contact, after contact with the environment, after exposure to body fluids and before any aseptic tasks. Patients should be encouraged to carry out thorough hand hygiene. If a child is unable to decontaminate their hands then hand hygiene should be carried out by a HCW or patient carer for them.<br><br>Please refer to NHSGGC Hand Hygiene Guidance<br><br>Visitors should also be instructed to wash their hands with soap and water |
| ***ARHAI Trigger Tool*** | The ARHAI Trigger Tool must be completed by the IPCT and Clinical Staff if there are two or more HAI CDI cases in the same ward in a two week period. IPCNs and ward staff will complete the trigger tool checklist daily until the trigger is no longer in place i.e. one or both patients are no longer symptomatic or have been discharged. The following actions will be taken by the IPCT when a trigger is met:<br><br>- Request a terminal clean of the ward at the start of the trigger<br>- Advise on enhanced IPC precautions to be in place.<br>- Undertake SIPC's audit hand hygiene audit<br>- Ask the antimicrobial pharmacist to review prescribing |

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| | Findings will be reported to the SCN and ward staff who should liaise with IPC and pharmacy colleagues on any actions required as a result.<br><br>Following this, should another case of HAI CDI emerge, the IPCT will complete a PAG to determine the requirement for an IMT and ward closure. |
| ***Linen*** | Treat used linen as soiled/ infected, i.e. place in a water soluble bag then a clear plastic bag, tied and then into a laundry bag. (Brown bag used in Mental Health areas)<br>Please refer to National Guidance on the safe management of linen. |
| ***Moving between wards, hospitals and departments (including theatres)*** | Except in clinical emergencies, transfer of patients before they are symptom-free for 48-hours and/or and passed a normal stool is not advisable.<br><br>However, acute receiving units have a high patient turnover and transfer of patients is necessary for effective patient flow and to ensure that patients receive the appropriate care within their specialty. Therefore, Receiving areas **MUST** be informed of the patient's condition **before** the patient is transferred and the requirement for a single room.<br><br>Please follow NHSGGC SOP Terminal Clean of Ward/Isolation Rooms |

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| ***Notice for Door*** | The yellow IPC isolation sign must be placed on the door to the patient's room.<br><br>In Mental Health Services (MHS), on advice of IPCT. |
| ***Patient Clothing*** | Whilst patients are very symptomatic they should be advised to wear hospital gowns.<br><br>If relatives or carers wish to take personal clothing home, staff must place clothing into a domestic water soluble bag then into a patient clothing bag and staff must ensure that a Washing Clothes at Home Patient Information Leaflet is issued.<br><br>***NB:*** It should be recorded in the nursing notes that both the advice and information leaflet has been issued. |
| ***Patient Information*** | Inform the patient and / or if relevant, the patient's relative/ carer of their condition and the necessary precautions if required. Answer any questions and concerns they may have. A CDI Fact sheet for patients and their relatives is available to download from the IPCT website.<br><br>***NB:*** It should be recorded in the nursing notes or Care Checklist that the fact sheet has been issued. IPCTs are available to speak to patients or relatives/ carers if required.<br><br>CDI Fact Sheet |
| ***Personal Protective Equipment* (*PPE*)** | To prevent spread through direct contact PPE (disposable gloves and yellow apron) must be worn for all direct contact with the patient or the patient's environment/equipment.<br>If there is a risk of splashing of blood/body fluids, then facial protection i.e. mask/visor should also be considered. Hand hygiene must be performed using liquid soap and water before donning and after doffing PPE. Alcohol based hand rub is not effective against CDI. |
| ***Precautions required until*** | Precautions should continue until the patient has been asymptomatic for 48 hours and bowel movements have returned to the patient's normal or, on advice of a member of the IPCT.<br><br>If symptoms recur, reinstate precautions immediately, send |

<table>
<tr><td></td><td>further specimens and inform a member of the IPCT.</td></tr>
<tr><td>Daily and weekly check by IPCT</td><td>IPCNs will check daily (Monday -Friday) on the condition of patients with CDI until TBPs are no longer required and thereafter weekly for 4 weeks.</td></tr>
<tr><td>Daily assessment of severity by clinical team</td><td>If the patient is confirmed as CDI, and while the patient is symptomatic of loose stools, medical staff are required to undertake a daily severity assessment using the assessment tool below. Daily severity assessments should continue until patient has been asymptomatic for more than 48 hours. Medical staff should consider the need to take bloods to complete the severity score.<br><br>Severity assessment in paediatric population (3-16 years)<br><br>
<table>
<tr><th>Criteria</th><th>Yes</th><th>No</th><th>Score if Yes</th></tr>
<tr><td>Diarrhoea >5 times per day</td><td></td><td></td><td>1</td></tr>
<tr><td>Abdominal pain and discomfort</td><td></td><td></td><td>1</td></tr>
<tr><td>Rising white cell count</td><td></td><td></td><td>1</td></tr>
<tr><td>Raised C-reactive protein</td><td></td><td></td><td>1</td></tr>
<tr><td>Pyrexia >38 ℃</td><td></td><td></td><td>1</td></tr>
<tr><td>Evidence of pseudo membranous colitis</td><td></td><td></td><td>2</td></tr>
<tr><td>Intensive care unit requirement</td><td></td><td></td><td>2</td></tr>
<tr><td>Total score</td><td></td><td></td><td></td></tr>
</table>
≥ 5 = severe disease<br><br>If a patient is assessed as severe the IPCT will:<br>• refer to the CDI treatment algorithm (paeds)<br>• Communicate severe cases to the Senior Management Team/ Microbiology and Clinical Teams<br>• IPCT will generate a datix</td></tr>
<tr><td>Clinical review assessment (CRA) and Reporting of Severe Cases of CDI</td><td>A Clinical Review is required if the patient:<br>• Has severe or life threatening CDI<br>• Was admitted to ITU for treatment of CDI or its complications<br>• Had endoscopic diagnosis of pseudomembranous colitis with or without toxin confirmation<br>• Had surgery for the complications of CDI (toxic</td></tr>
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| | megacolon, perforation or refractory colitis)<br>• 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<br>• Had persisting CDI where the patient has remained symptomatic and toxin positive despite two courses of appropriate therapy |
| ***Deaths due to CDI (Underlying or Contributing)*** | If death occurs then please see the Adult CDI Guideline for the process to be followed.<br>**CDI (adult) SOP** |

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| ***Treatment*** | **Mild disease (score 1-2)**<br>Mild disease may not require treatment. Consider oral metronidazole for 10-14 days if symptoms persist<br><br>**Moderate disease (score 3-4)**<br>Oral metronidazole for 10-14 days.<br>Consider escalation to oral Vancomycin if non resolution of symptoms<br><br>**Severe disease ≥5**<br>Oral Vancomycin and iv metronidazole. Consider surgical intervention/ colectomy if evidence of caecal dilatation on imaging<br><br>https://clinicalguidelines.nhsggc.org.uk/paediatrics/infectious-disease-paediatric/clostridium-difficile-infection-cdi-in-children-diagnosis-and-management/ |
| ***Specimens required*** | Send faecal specimens from any patient who has loose stools that score 5-7 on Bowel Movement Record (Appendix 1) and if no other cause of diarrhoea is known. If negative and loose stools persist, another two samples should be sent at 24-hour intervals. Relevant clinical information must be supplied with the specimen.<br><br>There is no requirement to send clearance specimens from patients who become asymptomatic.<br><br>Specimens should not be sent whilst patient is on treatment.<br><br>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. Relapse can also occur up to 14 days after therapy has stopped. |
| ***Stool Charts*** | It is the responsibility of staff looking after the patient within the area to record signs and symptoms of infection as appropriate, e.g.Bowel Movement Record, 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. |

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| ***Surveillance*** | Surveillance of CDI is mandatory in Scotland and is reported to HPS by the Diagnostic Laboratory.<br><br>Local surveillance in NHSGGC is returned to wards with a prevalence of CDI monthly using Statistical Process Control Charts (SPCs). SPCs are not a substitute for local referral by clinical staff and ICTs but should be used to monitor trends and promote quality improvement. |
| ***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.<br><br>***NB:*** relapse and re-infection from the environment can be as high as 20% in patients with CDI.<br><br>See NHSGGC SOP Terminal Clean of Ward/Isolation Rooms |
| ***Visitors*** | Visitors are not required to wear aprons and gloves unless participating in patient care. If PPE is worn by patients or visitors it should be removed before leaving the room. Visitors should be advised to decontaminate their hands with liquid soap and water on leaving the room/ patient. Visitors should also be advised not to use communal areas or to sit on beds, while patient is infectious. |

## 4. Evidence Base

Pai S et al. Five years experience of clostridium difficile infection in children at a UK tertiary hospital: proposed criteria for diagnosis and management. PLOS 2012; 71-6

Lees E A et al. The role of Clostridium difficile in the paediatric and neonatal gut — a narrative review. Eur J Clin Microbiol Infect Dis (2016) 35:1047–1057

http://www.nipcm.hps.scot.nhs.uk/

https://www.hps.scot.nhs.uk/web-resources-container/guidance-on-prevention-and-control-of-clostridium-difficile -infection-cdi-in-health-and-social-care-settings-in-scotland/

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

**BOWEL MOVEMENT RECORD**

Month: _____ Year: _____

Name:

| Date | Time | Size<br>S-small M-medium L-large<br>S M L | Type 1<br>Separate hard lumps like nuts (hard to pass) | Type 2<br>Sausage shaped but lumpy | Type 3<br>Like a sausage but with cracks on surface | Type 4<br>Like a sausage or snake, smooth and soft | Type 5<br>Soft blobs with clear-cut edges (passed easily) | Type 6<br>Fluffy pieces with ragged edges, a mushy stool | Type 7<br>Watery, no solid pieces (entirely liquid) | Staff Initials |
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Adapted from the Bristol Stool Scale developed by KW Heaton and SJ Lewis at the University of Bristol, 1997