Shropshire Community Health
NHS Trust

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Author	Deputy Director of Infection Prevention and Control
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Amendments History		
No	**Date**	**Amendment**
1		
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Contents

Clostridioides difficile

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Patient presenting with
*UNEXPLAINED diarrhoea (type 5-7 on the Bristol stool chart)

(3 or more episodes in a 24hr period)

S	Suspect that a case may be infective where there is no clear alternative cause of diarrhoea
I	Isolate the patient (within 2 hours) and consult with the infection prevention and control team while determining the cause of diarrhoea
G	Gloves and aprons must be used for all contacts with the patient and their environment
H	Hand washing with soap and water should be carried out before and after each contact with the patient and the patient's environment
T	Test the stool for toxin, by sending a specimen immediately
E	Educate the patient, family and visitors
D	Document actions – including when isolation is not available

C.diff Positive or Carrier diagnosed or
Micro advice to treat as a probable or relapse:

- ☐ Inform IPC Team
- ☐ Treat promptly
- ☐ Review any antibiotics and proton pump inhibitors the patient may be on.
- ☐ Ensure stool chart is completed

Clean the area twice daily using a Trust-approved environmental disinfectant (Peracide in community hospital sites and Tristel on SaTH sites.

- ☐ Dedicate equipment to the patient
- ☐ Maintain isolation precautions until 48hrs have elapsed without diarrhoea and a formed stool has passed.
- ☐ Complete a Post Infection review (PIR) within 28 days

1 Introduction

Since its identification in the late 1970s *Clostridioides difficile, (C. difficile)* has emerged as a major cause of healthcare associated diarrhoea. C. *difficile* infection (CDI) is associated with considerable morbidity and risk of mortality. As such, it has become of national importance with reduction thresholds and collaborative working with in the local health economy (LHE). Transmission of CDI is mainly attributed to occur via the hands of healthcare workers or via the contaminated environment and equipment. It is associated with the widespread use of antibiotics in particular cephalosporins, quinolones and clindamycin. However, it is now clear that many, if not all, antibiotics can induce CDI.

CDI can cause diarrhoea, ranging from a mild bowel disturbance to a very severe illness with ulceration and bleeding from the colon (colitis) and, at worst, perforation of the intestine leading to peritonitis. It can be fatal. Generally, it is only able to cause infection when the normal, healthy intestinal bacterial flora have been disrupted by antibiotics. It multiplies in the intestine and produces two toxins (A and B) that damage the cells lining the intestine.

2 Purpose

The policy is intended to provide guidance on the management of CDI within Shropshire Community Health NHS Trust.

3 Definitions

Term / Abbreviation	Explanation / Definition
CDI	*Clostridioides difficile* Infection
CDI carrier/ colonised	A toxigenic strain of CDI found in stool sample and the toxin test is negative. Indicates there is NO evidence of active disease and the patient does not need treatment. The patient is more at risk of developing CDI so antibiotics should be avoided if possible, in the three months after a positive sample.
EIA	Enzyme Immunoassay
Episode of CDI	28 days, with day 1 being the date of specimen collection
FBC	Full Blood Count
GDH	Glutamate dehydrogenase
IPC	Infection Prevention and Control
NAAT	Nucleic acid amplification test
Outbreak of CDI	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
PCR	Polymerase Chain Reaction
PII	Period of Increased Incidence of CDI
PII of CDI	Two or more new cases (occurring after 48 hours of admission, not relapses) in a 28-day period on a ward
PIR	Post Infection Review
PPI	Proton Pump Inhibitor
PSII	Patient Safety Incident Investigation
U&E	Urea and Electrolytes
WCC	White Cell Count

3.1 Responsibility for Infection Prevention and Control (IPC) outside the immediate scope of this policy

For duties and responsibilities for IPC practices outside the specific scope of this policy, please refer to the IPC Arrangements and Responsibilities Policy on the Staff Zone SCHT Staff Zone (shropcom.nhs.uk).

3.2 IPC Duties specific to this policy

The IPC Team will:

- assist the clinical team in reviewing the patient identified with CDI
- Report the case to the ICB.
- Liaise with other healthcare providers involved in the care of the patient.
- Conduct Surveillance of CDI to identify increased incidence and outbreaks.

4 Background

Clostridioides difficile is a spore-forming bacterium of the family *Clostridium*, (the family also includes the bacteria that cause tetanus, botulism, and gas gangrene). It is an anaerobic bacterium (i.e. it does not grow in the presence of oxygen) and produces spores that can survive for a long time in the environment.

Its usual habitat is the large intestine, where there is very little oxygen. It can be found in low numbers in a small proportion (less than 5%) of the healthy adult population. It is kept in check by the normal, 'good' bacterial population of the intestine. It is common in the intestine of babies and infants but does not cause disease because its toxins (poisons) do not damage their immature intestinal cells.

5 Signs and Symptoms

- Watery stool that may have mucous present
- Pyrexia, hypotension, tachycardia, reduced oral intake, abdominal pain/tenderness
- Some patients may develop severe pseudomembranous colitis with ulceration of the colon, toxic megacolon, perforation or peritonitis, all of which may result in death
- Unexplained leucocytosis, WCC>15 x 10^9/l is not uncommon

6 Risk Factors

- Elderly (over 65 years)
- Antibiotic therapy in the last 12 weeks
- Prolonged length of stay in healthcare settings
- Immunocompromised patients
- Immunosuppressive therapies e.g. steroids
- Serious underlying disease/chronic disease
- Non-surgical gastrointestinal procedures
- Agents that reduce stomach acidity e.g. H2 antagonists, Proton Pump Inhibitors (PPIs)
- Recent laxatives/enemas/anti-emetics/proton pump inhibitors
- Enteral nutrition
- Inflammatory bowel disease

- Previous gastrointestinal surgery
- Gastrointestinal malignancy
- Ileostomy/colostomy
- Other gastrointestinal infection, e.g. norovirus
- Anti-motility medication to be reviewed by GP immediately

7 Mode of Transmission

Although some people can be carriers of *C. difficile*, (see Section 12) in most cases the disease develops after cross infection from another patient. This can be through direct patient-to-patient contact, via healthcare staff or via contaminated equipment and/ or the environment. A patient who has CDI excretes large numbers of the spores in their liquid faeces. These can contaminate the general environment around the patient's bed, including surfaces, keypads, and equipment, the toilet areas, sluices, commodes, macerators, etc. The spores can survive for many months and be a source of hand-to-mouth infection for others.

8 Diagnostic Specimens

Obtain faecal samples of all unexplained diarrhoea (Bristol Stool Chart types 5 – 7 – see Appendix 1) that is **not** clearly attributable to an underlying condition (e.g. inflammatory colitis, overflow) or therapy (e.g. laxatives, enteral feeding) and send to the microbiology laboratory for examination as soon after the onset of illness as possible.

Patients who present with diarrhoea on admission (regardless of their history) should also have faecal samples sent promptly to exclude other causes e.g. CDI. Please seek clarification from the IPC Team or consultant Microbiologist, if concerned.

If CDI is suspected then prompt action is necessary, **DO NOT** wait for specimen result to confirm suspicion, contact the GP or Consultant Microbiologist at SaTH for advice.

Out of hours advice and support is available via the Shrewsbury and Telford Hospital switchboard on (01743) 261000 and ask to speak to the on-call microbiologist.

The stool sample must take the shape of the container and ideally be at least ¼ filled. If there is urine in the sample, the stool sample can still be processed, as the urine will not affect the results.

Clearly label the specimen and microbiology form stating any relevant clinical history i.e. CDI suspicion, state any recent antibiotic history, frequency of diarrhoea, stool type e.g. Type 7 with date of onset of diarrhoea.

In the event of suspicion of CDI occurring at the weekend, samples must be sent, ensuring you have informed the Microbiology laboratory (01743) 261167 of the sample/s being sent for processing. Transport will need to be arranged e.g. Blood Bikes services may be considered.

More than one test per patient may be required if the first test is negative. Where there is a strong clinical suspicion of CDI the lab will re-test a second sample 24 hours later.

8.1 Laboratory Testing and Carriers

The microbiology laboratory use a glutamate dehydrogenase (GDH) enzyme immunoassay (EIA) as a screen for CDI. The GDH test detects the presence of CDI glutamate dehydrogenase. It is a very sensitive indicator of the presence of CDI, so a **negative** result makes CDI highly unlikely. This is why it is a very good screening test.

A **positive** result does **NOT** mean that the patient has CDI. It does not distinguish between toxin producing and non-toxin producing strains or it can simply be a false positive. Only toxin producing strains are associated with clinical disease. GDH positive samples therefore undergo further testing which includes a toxin test and nucleic acid amplification test (NAAT) on any toxin negative samples.

This can give the following scenarios.

1. Samples that are GDH positive and toxin positive are reported as cases of CDI.
2. Samples that are GDH positive and toxin negative are further tested with a NAAT test. This detects the *C. difficile* gene which codes for the production of toxin. Therefore, GDH positive, toxin EIA negative and NAAT positive signifies patients who are colonised and considered to be **carriers of a toxigenic strain** of *C. difficile.* Clinical assessment is required to determine further management of the patient; if they remain symptomatic treatment for CDI should be considered. However, if the patient becomes asymptomatic after the specimen was sent to laboratory, careful attention must be given as they are at high risk of developing active disease so broad spectrum antibiotics should be avoided wherever possible. If they have diarrhoea from any cause, they will be infectious for *Clostridioides difficile* and therefore, if they are hospitalised, they must be isolated to reduce the risk of transmission.
3. Samples that are GDH positive but toxin EIA and NAAT negative are considered to be either false positives or carriers of a non-toxigenic strain. Such patients should be reviewed by the medical team.

The comments made by the laboratory included on the specimen results will provide interpretive guidance but further advice is available from the IPC team.

No test or combinations of tests are infallible and the clinical condition of the patient should always be taken into consideration when making management choices. In the event of any uncertainty the advice from a consultant microbiologist at Shrewsbury and Telford Hospital Trust (SaTH) should always be sought.

9 Management of Patient with CDI

Clinicians should apply the following mnemonic protocol (SIGHTED) when managing suspected potentially infectious diarrhoea:

S	Suspect that a case may be infective where there is no clear alternative cause of diarrhoea
I	Isolate the patient (within 2 hours) and consult with the infection prevention and control team while determining the cause of diarrhoea
G	Gloves and aprons must be used for all contacts with the patient and their environment
H	Hand washing with soap and water should be carried out before and after each contact with the patient and the patient's environment
T	Test the stool for toxin, by sending a specimen immediately
E	Educate the patient, family and visitors
D	Document actions – including when isolation is not available

When any bowel infection is suspected, it is important to assess the patient's normal bowel pattern and to consider any other causative factors for diarrhoea.

If symptoms indicate CDI or possible CDI you must also take a blood sample to check Urea and Electrolytes (U&Es) and Full Blood Count (FBC) to determine level of severity.

Patients with CDI should be monitored daily by the clinical team for frequency and severity of diarrhoea using the Bristol stool form chart, (refer to Appendix 1) and by implementation of the CDI integrated care pathway (refer to Appendix 2).

IPC team to consider requesting ribotyping for confirmed case.

CDI should be managed as a diagnosis in its own right, with each patient reviewed by the clinical team daily regarding fluid resuscitation, electrolyte replacement, and nutritional review.

Assess the severity of CDI as follows:

- **Mild CDI** is not associated with a raised white cell count (WCC); (Normal range 3.7 – 11.0) it is typically associated with <3 stools of types 5–7 on the Bristol Stool Chart in 24hrs
- **Moderate CDI** is associated with a raised WCC that is <15 x 109/L; it is typically associated with 3–5 stools of types 5–7 on the Bristol Stool Chart in 24hrs
- **Severe CDI** is associated with a WCC >15 x 109/L, or an acute rising serum creatinine (i.e. >50% increase above baseline), or a temperature of >38.5°C, or evidence of severe colitis (abdominal or radiological signs). The number of stools may be a less reliable indicator of severity
- **Life-threatening CDI** includes hypotension, partial or complete ileus or toxic megacolon, or Computed Tomography evidence of severe disease

Please refer to Appendix 3 – algorithm for the management and treatment of CDI.

10 Treatment

Diarrhoea is a common adverse drug reaction with many medicines. Where there is a suspicion of CDI a review of the patient's current medication should be carried out by the patient's doctor/consultant; if possible, stop pre-existing antibiotic therapy, opioids, anti-motility medication and any other medication that may alter the gut flora such as H2 antagonists and PPIs and treat according to severity. Please refer to SCHT Antibiotic Policy and discuss with the Consultant Microbiologist at SaTH via (01743) 261000

Please refer to the chart: Antibiotics for adults aged 18 years and over at Appendix 1 for prescribing regimes

10.1 Mild and Moderate CDI

Treatment is not required if the patient is asymptomatic when the results are available. Simply stopping provocative antibiotics may be sufficient in some cases. If treatment is required then please refer to appendix 1. Patients should be reviewed daily by clinical staff and GP and, if symptoms persist contact the Consultant Microbiologist.

10.2 Severe CDI

Please refer to Appendix 1.

Reference should be made to the community antibiotic guidelines, which are available on the SCHT website and advice sought from the Consultant Microbiologist at SaTH on (01743) 261000.

10.3 Re-occurring diarrhoea or a relapse of CDI symptoms

About 25% of cases clinically relapse after settling initially. Laboratory tests are not helpful in showing this since toxin excretion continues for at least 28 days and possibly much longer after a positive result even in asymptomatic patients.

10.3.1 Actions

In the event of relapse including a single episode of unexplained diarrhoea, undertake a full set of observations. The patient must be considered as infectious and therefore isolated.

10.3.2 Treatment

Seek Medical review and repeat the course of the antibiotic used for the first infection. Refer patients with recurrent, unresponsive or severe CDI to acute Trust.

Treat patients who relapse within 3 months according to greatest level of severity of either the current or the previous episode – **DO NOT** send a repeat stool sample unless clinical judgement indicates that the symptoms might be caused by another pathogen (positive samples on the

same patient more than 28 days apart are reported as a new case and counted against locally set thresholds).

For second relapse or if concerned about severity seek advice from the Consultant Microbiologist on (01743) 261000.

11 Management and Treatment of *Clostridioides difficile* carriers

Providing these patients are asymptomatic they may be nursed in an open bay/room without source isolation precautions.

Carriers of *Clostridioides difficile* will be at more risk of developing CDI therefore antibiotics should be avoided, if possible, in the three months after a positive sample. If antibiotics are essential to treat another infection during this period, a short course of a narrow-spectrum agent is preferable.

The SaTH Consultant Microbiologists will discuss the best option if antibiotic therapy is required.

If the patient develops diarrhoea for any reason, they will be infectious to others, whatever the cause of the diarrhoea. Therefore, if they are in any healthcare environment, they must be isolated immediately until 48 hours clear of diarrhoea and a formed stool passed. If the clinical picture is suggestive of CDI, a second sample should be collected to test if it has become toxin positive, which would suggest the patient has developed infection rather than just being a carrier, and therefore may need treatment. Please discuss with IPC team on (01743) 277671 or out of hours the Consultant Microbiologist on (01743) 261000.

12 Patient Information

The patient should be informed of the result by the team responsible for the patient's care and augmented with the Trust *C. difficile* leaflet.

13 Prevention of CDI

13.1 Prevention through Hand Hygiene

Hand hygiene is the most important procedure for preventing healthcare-associated infection. Hand washing with detergent soap and water is an effective method to remove the spores.

Alcohol hand gel does not kill the *Clostridioides difficile* spores.

Strict hand washing with liquid soap and water after every contact with a patient and/or their environment with suspected or proven CDI is important. Visitors must always wash their hands on leaving the isolation room or bed area. All patients must wash their hands after using the toilet/commode, before meals and before taking medication. Moist hand wipes can be offered if patients cannot access a wash hand basin. Patients may require assistance and or advice on how to wash their hands effectively and how to use the hand wipes. Guidance for patients is available on the SCHT website.

13.2 Prevention through Isolation

It is strongly recommended that patients with suspected potentially infectious diarrhoea (at least one episode of unexplained diarrhoea) should be moved immediately into a single room with a self-contained toilet and its own hand wash basin. If the room does not have its own toilet facilities then a commode should be designated to that patient. The appropriate (Enteric Contact) isolation sign must be placed on the door and the door kept **closed**. A risk assessment may need to be carried out and documented if a patient is at risk behind a closed door.

If isolation in a single room is not possible because the single room capacity is exceeded, it may be necessary to carry out a risk assessment to determine which patient should take priority for being placed in a single room – refer to the Isolation Risk Assessment Tool in Appendix 2 of the Isolation Policy.

Please also liaise with the IPC team, or if out of hours, contact the on call consultant microbiologist via SaTH switchboard on 01743 261000, to discuss the risk of moving a patient out of the single room to accommodate the infected patient.

All infection risks must be assessed and the decision to isolate or not must be documented in the patient's records.

The CDI patient must remain isolated until there has been no diarrhoea (types 5 –7 on the Bristol Stool Chart) for at least 48 hours, and a formed stool has been passed (types 1 – 4 on the Bristol Stool Chart).

- Staff must apply a single-use apron **before** entering the isolation room if contact with the patient or environment is envisaged.
- Staff must use disposable gloves if in direct contact with the patient and or body fluids.
- Infected linen should be placed in an inner red alginate bag which in turn is placed within a clear laundry bag and sent to the laundry for processing.
- All clinical waste should be disposed of in orange infectious waste bags.
- All skin cleansing products must be used as a single patient item. Outbreaks of CDI have been reportedly linked to communal use of such products being used between patients.
- Visitors should be discouraged from sitting on beds and they only need to wear an apron and gloves if performing, or helping to perform, care activity tasks e.g. washing and toileting. They must ensure their hands are washed with soap and water on arrival to and departure from the side room and ward, before assisting and following any personal and nutritional care.
- Visitors should not visit other patients on the ward

13.3 Prevention Through Environmental and Equipment Decontamination

Clostridioides difficile spores may survive for many months and are often widely distributed in the ward setting. They are also resistant to many disinfectants. Patients' hands, care equipment and the environment can easily become contaminated with the organism.

- The isolation room, bed space and patient care equipment must be cleaned at least daily with the Trust-approved environmental disinfectant (Peracide in community hospitals and Tristel on the wards on SaTH sites).
- Monitoring and physiological equipment such as blood pressure cuffs, oxygen saturation monitor, thermometer, stethoscope must be disposable or designated for the sole use of the patient where possible.
- Any equipment which cannot be disposable or designated must be thoroughly decontaminated with the Trust-approved disinfectant (Peracide in community hospitals, Tristel in the wards on SaTH sites) between each and every use, including sharps bins.
- Meal trays must be processed through the dishwasher between each and every use.
- Commodes and toilets must be cleaned with the Trust-approved disinfectant (Peracide in community hospitals and Tristel on the wards on SaTH sites) after each use including the arms and the underside of the seat.
- Ensure single patient use manual handling equipment is used, or if reusable designated and laundered after for the period of infection and in between if visibly soiled.
- Ensure hoists and stand aids are thoroughly decontaminated between uses with the Trust-approved environmental disinfectant.
- Attention must be paid to all objects and surfaces which are touched frequently, e.g., door handles, toilet flush handles, telephones, TV remote controls, keyboards and nurse call handsets.

- The isolation room and ward environment should not be cluttered as this inhibits effective cleaning.
- Terminal cleaning of a bed space bay or ward area after the discharge, transfer or death of a patient with CDI must be thorough, including curtains changed.
- Terminal cleaning of mattresses should be carried out according to manufacturer's instructions and must include checking the cover is impervious to body fluids.
- An "I am Clean" tool must be completed
- Toilet brushes must be replaced with new.

Further details are available in the SCHT Cleaning and Disinfection policy

13.4 Prevention through Antibiotic Prescribing

Antibiotics are the most common predisposing factor for CDI. Diarrhoea typically starts within a few days of commencing antibiotics, although antimicrobials taken 1-2 months ago can still predispose to CDI. Antibiotic therapy or prophylaxis damages the colonic flora and allows *C. difficile* to flourish, if it is already present or is subsequently acquired before gut bacteria return to normal.

Almost any antibiotic may induce CDI, but broad-spectrum cephalosporins (in particular third-generation cephalosporins e.g. cefotaxime, ceftazidime), broad-spectrum penicillins, clindamycin and quinolones e.g. ciprofloxacin are most frequently implicated. Narrow spectrum antibiotics, such as penicillin, trimethoprim, rifampicin, fusidic acid and nitrofurantoin appear to have a lower CDI risk though will still potentially predispose to CDI.

Although the Public Health England (March 2015) Start Smart - Then Focus Antimicrobial Stewardship Toolkit for English Hospitals is primarily aimed at reducing antimicrobial resistance it is a useful tool to use in preventing CDI.

13.5 Prevention through Patient Movement

- The transfer and movement of patients should be reduced to a minimum. Where patients need to attend departments for essential investigations, they should be 'last on the list' unless earlier investigation is clinically indicated.
- The receiving area must be notified of the patient's CDI status, and the patient called for only when the department is ready for them. This will ensure patients are not held unnecessarily in communal waiting areas.
- Ambulance staff should be advised of the patients CDI status to allow appropriate precautions to be taken.
- Where patients are discharged to their own home the possibility of symptoms recurring should be discussed with the patient and/or carer. If patients have a history of relapse or re-infection, a supply of pads, gloves, and aprons should be given to the carer to prevent cross infection.
- There is no reason to keep stable patients in hospital with this infection and there is **NO** need for clearance samples at **ANY** time. CDI, however, can also spread in care homes therefore patients should be continent of faeces and not suffering diarrhoea before discharge to such accommodation.
- All staff transferring patients to other healthcare providers must complete the infection risk section of the health economy transfer of care summary form.

14 Electronic Patient Record

14.1 Alert on RIO

Patients who are diagnosed with CDI or to be a CDI carrier must have an alert placed on their RIO electronic patient record with a review set for 6 months' time.

15 CDI Integrated Care Pathway

The CDI integrated care pathway provides a framework which is aimed at improving care delivery for CDI patients within in-patient areas. Please refer to Appendix 3 for an example of the CDI Integrated Care Pathway.

16 Informing Other Health Care Staff of Diagnosis at Discharge

It is important to inform the patient's GP and primary health care team, ward staff if transferring to another hospital and where appropriate the person in charge of the patient's care home that the patient had CDI while in hospital. This will alert them to be particularly careful about antibiotic prescribing in the next 3 months to prevent a relapse and also to appropriately treat further episodes of diarrhoea which may occur appropriately. This information must be included in the discharge letter.

Please ensure that the patient has received a CDI passport card on the discharge information or transfer documentation.

17 Diagnosis of *Clostridioides difficile* (infection and carrier) following discharge

If the diagnosis of *Clostridioides difficile* (infection and carrier) is reported after the patient has been discharged, the ward staff must notify the patient's GP.

18 Care of deceased patients with *Clostridioides difficile* infection or a carrier

The same source isolation precautions must continue after the patient has died. As a routine, bodies are enclosed in a plastic cadaver bag before it is transported to the mortuary.

Providing standard precautions are routine no additional precautions are required to be taken in the mortuary or by the undertakers.

19 *Clostridioides difficile* in the Community

Staff working in the community who have contact with people with diarrhoea should adopt the same standard precautions and wear disposable aprons and gloves for all contact with these patients and their environment. After contact, they should dispose of the gloves and aprons and wash their own hands with liquid soap and water, whether or not their hands are visibly soiled. Disposable items should be double bagged and placed in the patient's domestic waste bin. Refer to the SCHT Waste Management Policy. The importance of hand washing for the patient and carer(s) should also be discussed. Patient information leaflets and passports are available as discussed in Section 10.

20 Outbreaks of CDI

An outbreak is defined as "two or more cases caused by the same strain related in time and place over a defined period based on the date of onset of the first case".

Outbreaks of CDI are usually due to cross infection and should not occur if standard precautions are followed.

If an outbreak of CDI amongst patients is identified on a ward, the IPC team will support and facilitate ward staff in managing the outbreak and will liaise with relevant organisations e.g. UKHSA, ICB IPC team and CQC. The ward staff will need to complete a Datix to report the outbreak and undertake a Post Infection Review (PIR).

20.1 Periods of Increased Incidence (PII) of CDI

Periods of increased incidence (PII) of CDI: two or more new cases detected 3 or more days of admission, not relapses) in a 28-day period on a ward.

The IPC Team will:

- seek advice from the Consultant Microbiologist at SaTH.
- The ward/area involved will be required to report the incident via Datix.

- The laboratory will be requested to send all positive specimens for typing.
- The ward/area will be required to complete an
    - Additional Hand Hygiene, Bare Below the Elbow and Personal Protective Equipment Observational Tools
    - A Cleanliness Monitoring audit
- The ward area will also be requested to complete a PIR on each patient involved.
- A deep clean of a bay and/ or the ward may also be requested by IPC team.

The IPC team will notify the DIPC, Deputy Directors, Divisional Manager and relevant LCMs and ICB IPC Lead, (UKHSA may also need to be notified depending on numbers and timeframes).

IPC Team will continue to liaise with the ward and monitor.

An incident meeting will be arranged following the completion of the documentation to review any lapses in care and lessons learned to be shared.

Meeting minutes will be presented at the Trust's Patient Safety Incident Response Framework.

21 CDI Reporting Algorithm.

Cases reported to the healthcare associated infection data capture system will be assigned as follows:

- **Hospital onset healthcare associated**: cases that are detected in the hospital three or more days after admission
- **Community onset healthcare associated**: cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous four weeks
- **Community onset indeterminate association**: cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous 12 weeks but not the most recent four weeks
- **Community onset community associated**: cases that occur in the community (or within two days of admission) when the patient has not been an inpatient in the trust reporting the case in the previous 12 weeks.

Hospital or Community Onset formula

Following confirmation of a positive CDI result, the following formula is to be followed to determine which organisation is to lead on the completion of the CCR.

Admission Day equates to Day 1 (regardless of the time of admission)

Day 2

Day 3

Day 4

Etc.

If the faecal sample was obtained between the Admission Day and Day 2 then the transferring organisation must be contacted to advise them of the positive CDI result and the need for completion of the CCR as the CDI case may be assigned to the leading organisation.

Cases will be assigned to SCHT if the faecal sample is obtained three or more days after admission to a community hospital or if the sample is obtained within two days of admission when the patient has been an inpatient in any of the Trust's community hospitals in the previous four weeks. SCHT will lead on the PIR in all of these cases.

22 Post Infection Review (PIR) Process for all CDI diagnosed in Community Hospitals

Following laboratory confirmation of *C. difficile* toxin positive from the stool specimen, the appropriate Manager/ Sister/ Charge Nurse will be contacted by the IPC team to take responsibility for the investigation. Initial contact will usually be by telephone, followed up by email with details of the date of specimen, patient details and initial understanding of the infection. The CCR assessment tool and service improvement plan (SIP) data collection will be attached to the email.

The assessment tool will assist in identifying risk factors and good practice in CDI infection prevention and control and lapses in care. It can then be used to formulate a SIP to support the drive forward change elements of practice that may need developing in order to improve patient safety and the patient experience

1. The IPC team will notify the DIPC, Deputy Directors, Divisional manager, relevant LCMs, and the ICB IPC team upon receipt of notification.
2. The Manager/ Sister/ Charge Nurse will inform the appropriate clinical team that a PIR investigation is required and a DATIX must be completed.

   The clinical team(s), e.g. nursing, medical, medicines management, hotel services, supported by the IPC team will lead a comprehensive in depth collection of information to complete the relevant sections of the assessment tool and return to SCHT IPC team within **7 working days**.
3. The SCHT IPC team will collate the data from all the clinical teams returned assessment tools into one document and forward to the ICB IPC team within **10 working days**.
4. The SCHT IPC team will arrange and chair a review meeting where attendance, if requested, is mandatory. A suitable and appropriate deputy may be nominated to represent if required. Participants will include key persons with a contribution of care of the patient which could have led to the CDI.

   The completed assessment tool will be discussed at the PIR meeting to be held within 20 working days of the date of the specimen result.

   The review meeting will attempt to establish how the case occurred and the actions that will help prevent it re-occurring. A review of good practice will also be discussed at the CCR meeting and shared as deemed appropriate.
5. If required an improvement plan will be developed by the relevant service manager (agreed and signed by the LCM) following the review meeting to address any issues identified during the PIR process.

The above process must be completed within 28 working days

The appropriate Ward Manager will ensure the agreed SIP is fully implemented and through local governance structures ensure lessons learnt are shared across SCHT to prevent any further similar cases. The question will be posed of whether existing policies would have prevented the infection or whether new and or amendment of existing policies should be developed.

If required a post review SIP meeting will be arranged and chaired by the SCHT IPC team to discuss the SIP and gain assurance that actions have been implemented.

The Manager will monitor progress on the improvement plan and present a summary report to the next IPCOG meeting either in person or through their Service Representative.

All CDI PIR will be presented at the Trust's Patient Safety Incident Response Framework.

23 CDI Thresholds

CDI thresholds are set nationally for acute trusts and ICBs and a local threshold is agreed with the commissioners for SCHT.

24 CDI deaths where CDI features on Part 1 (a, b or c) of the death certificate and CDI PII

24.1 Death Certification

If a patient with CDI dies, the death certificate should state whether CDI was part of the sequence of events leading directly to death or whether it was the underlying cause of death. If either case applies CDI should be mentioned in Part 1 of the certificate.

If CDI was not part of the sequence of events leading directly to death but contributed in some way to it, this should be mentioned in Part 2.

Doctors have a legal duty to mention CDI on a death certificate if it was part of the sequence of events directly leading to death or contributed in some way. The coroner should be notified of deaths where HCAI including CDI has been recorded in Part 1 or part 2 of the certificate.

The Service Manager/ Sister/ Charge Nurse will report the incident on the SCHT Datix Reporting System and escalate the incident to the SCHT governance team for discussion at Patient Safety Incident Panel.

The Service Manager/ Sister/ Charge Nurse will forward by email the completed assessment tool and the agreed SIP for deaths where CDI features on Part 1 (a, b or c) of the death certificate and CDI PII to the SCHT Risk Manager. PSIIs are also reported to the ICB and National Health Service England (NHSE) via STEIS.

All CDI deaths in the Community Hospitals will be reviewed by the Learning from Deaths Group.

A PIR may be undertaken on other patient groups e.g. CDI case diagnosed and patient had or having SCHT staff input i.e. Community Nurses. The same process detailed above will be implemented.

25 Surveillance

All cases of *Clostridioides difficile* toxin positive diarrhoea in patients over two years of age are reported to the UKHSA Data Capture System (DCS) by the laboratory.

26 Consultation

This policy has been developed by the IPC team in consultation with appropriate Locality Clinical Managers, advisors/specialists (e.g., Consultant Microbiologist, Medicine Management), and IPC operational group members.

A total of three weeks consultation period was allowed and comments incorporated as appropriate.

27 Approval Process

IPC Governance Meeting members will approve this policy and its approval will be notified to the Quality and Safety Operational Group.

28 Dissemination and Implementation

This policy will be disseminated by the following methods:

- Managers informed via Datix who then confirm they have disseminated to staff as appropriate
- Staff – via Team Brief and Inform
- Awareness raising by the IPC team
- Published to the Staff Zone of the SCHT website

The web version of this policy is the only version that is maintained. Any printed copies should therefore be viewed as 'uncontrolled' and as such, may not necessarily contain the latest updates and amendments. When superseded by another version, it will be archived for evidence in the electronic document library.

28.1 Advice

Individual Services' IPC Link staff act as a resource, role model and are a link between the IPC team and their own clinical area and should be contacted in the first instance if appropriate.

Further advice is readily available from the IPC team on 01743 277671 or the Consultant Microbiologist via SaTH switchboard on 01743 261000

28.2 Training

Managers and service leads must ensure that all staff are familiar with this policy through IPC induction and update undertaken in their area of practice.

In accordance with the SCHT's mandatory training policy and procedure the IPC team will support/deliver training associated with this policy. IPC training detailed in the core mandatory training programme includes standard precautions and details regarding key IPC policies. Other staff may require additional role specific essential IPC training, as identified between staff, their managers and / or the IPC team as appropriate. The systems for planning, advertising and ensuring staff attend are detailed in the Mandatory Training Policy and procedure. Staff who fail to attend training will be followed up according to the policy.

Further training needs may be identified through other management routes, including PIR following an incident/infection outbreak or audit findings. By agreement additional ad hoc targeted training sessions will be provided by the IPC team.

29 Monitoring Compliance

Compliance with this policy will be monitored as follows:

- Hand hygiene will be audited in accordance with the Hand Hygiene Policy and via peer Hand Washing Assessments
- Cleaning standards within Community Hospitals will be monitored in accordance with the Publicly Available Specification (PAS) 5748 framework
- Environmental and patient equipment cleaning will be monitored as part of local routine cleanliness audits
- Audited locally using the HCAI Prevention audits undertaken by the IPC team and by staff as Self- audits as part of the IPC audit programme
- Additional periodic auditing and self-audits by clinical teams
- The IPC Governance Meeting will monitor compliance of the cleanliness audit scores and the IPC team audit programme

Numbers of staff undertaking IPC training, which includes Standard Precautions, will be monitored by the Organisational Development and Workforce Department

As appropriate the IPC team will support Services' Leads to undertake IPC PIRs. Managers and Services' Leads will monitor subsequent service improvement plans and report to the IPC Governance Meeting.

Knowledge gained from PIR and IPC audits will be shared with relevant staff groups using a variety of methods such as reports, posters, group sessions and individual feedback.

The IPC team will monitor IPC related incidents reported on the SCHT incident reporting system and, liaising with the Risk Manager, advise on appropriate remedial actions to be taken.

30 References

Department of Health (2015) *The Health and Social Care Act 2008: Code of practice on the prevention and control of Infections.* DOH, London (updated 2015)

Department of Health March (2012) *Updated guidance on the diagnosis and reporting of Clostridium difficile.*

Department of Health (2010) *Saving Lives High Impact Number Seven. Care bundle to reduce the risk from Clostridium difficile.*

Department of Health (2006) *A Simple Guide to Clostridium difficile.* DH Publications

Department of Health & Advisory Committee on Antimicrobial resistance and Healthcare Associated Infections (2012) *Guidance on the diagnosis and reporting of Clostridium difficile*

Department of Health & Health Protection Agency (2009) *Clostridium difficile* infection: How to deal with the problem. DH Publications

Fraise, A P, Bradley C editors (2009) *Ayliffe's Control of Healthcare-Associated Infection. A Practical Handbook.* 5th Edition, London. Arnold

Loveday, H.P., Wilson, J.A., Pratt, R.J., Golsorkhi, M.,Tingle, A., Bak, A., Browne, A., Prieto, J., Wilcox, M. (2014) epic3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England. *Journal of Hospital Infection*. 86 (Supplement 1) (2014) S1–S70

NHS England (2021) NHS Standard Contract 2021/22: Minimising Clostridioides difficile and Gram-negative Bloodstream Infections.

NHS Improvement (2019) *Clostridium difficile* infection objectives for NHS organisations in 2019/20 and guidance on the intention to review financial sanctions and sampling rates from 2020/21

NICE (2021) Clostridioides difficile infection: antimicrobial prescribing. www.nice.org.uk/guidance/ng199/resources/clostridioides-difficile-infection-antimicrobial-prescribing-pdf-66142090546117. Accessed August 2021

Public Health England (2015). *Start Smart then Focus Toolkit.*

Public Health England (July 2021) *Updated guidance on the management and treatment of Clostridium difficile infection.*

SCHT CDI Improvement Plan 2021

The Royal Marsden (2021) *Hospital Manual of Clinical Nursing Procedures* (Tenth Edition). Wiley-Blackwell www.rmmonline.co.uk (accessed August 2021)

31 Associated Documents

This policy should be read in conjunction with:

- Cleaning and Disinfection policy
- Collection, Packaging, Handling, Storage and Transportation of Laboratory Specimens
- Community Antibiotic Guidelines
- Community Hospital Cleaning policy
- Isolation policy
- Linen and Laundry policy
- Management of Norovirus and other Gastro-intestinal Infections policy
- Outbreak Management Policy – Incorporating Bed and Ward Closure
- Standard Infection Control Precautions: Hand Hygiene and Personal Protective Equipment Policy
- Waste Management policy

32 Appendices

Appendix 1 – Table 1 Antibiotics for adults aged 18 years and over

Treatment	Antibiotic, dosage and course length
First-line antibiotic for a first episode of mild, moderate or severe *C.difficile* infection	**Vancomycin:** 125 mg orally four times a day for 10 days
Second-line antibiotic for a first episode of mild, moderate or severe *C.difficile* infection if vancomycin is ineffective	**Fidaxomicin:** 200 mg orally twice a day for 10 days
Antibiotics for *C.difficile* infection if first and second-line antibiotics are ineffective	Seek specialist advice. Specialists may initially offer: **Vancomycin:** Up to 500 mg orally four times a day for 10 days **With or without Metronidazole:** 500 mg intravenously three times a day for 10 days
Antibiotic for a further episode of *C.difficile* infection within 12 weeks of symptom resolution (relapse)	**Fidaxomicin:** 200 mg orally twice a day for 10 days
Antibiotics for a further episode of *C.difficile* infection more than 12 weeks after symptom resolution (recurrence)	**Vancomycin:** 125 mg orally four times a day for 10 days Or **Fidaxomicin:** 200 mg orally twice a day for 10 days
Antibiotics for life-threatening *C.difficile* infection (also see recommendation 1.1.16)	Seek urgent specialist advice, which may include surgery. Antibiotics that specialists may initially offer are: **Vancomycin:** 500 mg orally four times a day for 10 days **With** **Metronidazole:** 500 mg intravenously three times a day for 10 days

See the BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breastfeeding. Also see medicines safety.

See Specialist Pharmacy Service guidance on choosing between oral vancomycin options. If ileus is present, specialists may use vancomycin rectally.

Appendix 2 – Stool Record Chart

NHS
Shropshire Community Health
NHS Trust

Stool Record Chart

Please attach patient sticker here or record:
Name:……..

NHS Number::……

Unit Number:……..

Date of Birth: ……

Male Female (Please circle)

Consultant:……..

Hospital: ……

Ward: ……

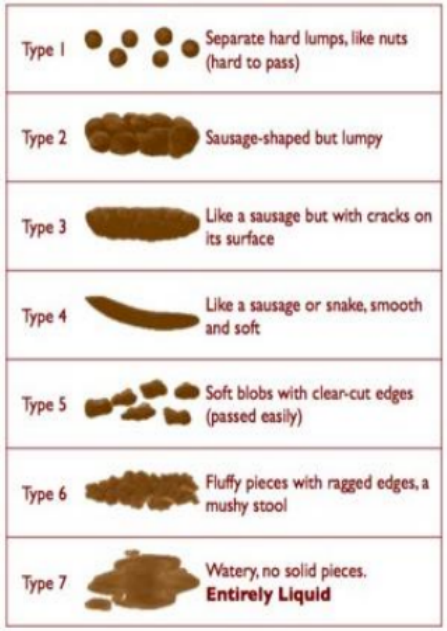
Date specimen sent: ……
Result: ……

More than one test per patient may be required if the first test is negative but there is a strong clinical suspicion of C.diff. Retest a second sample 24 hours later.

For Infection Prevention and Control related screening and monitoring

Date	Time	CONSISTENCY and DESCRIPTION (Please refer to key and tick all that apply)										Bowels Not Opened	Sample sent Y/N	Signed
		1	2	3	4	5	6	7	Mucus	Blood	Colour			

Key: Bristol Stool Chart



DEFINITION OF DIARRHOEA
Watery or liquefied stools, (i.e. types 5, 6 and 7).

SEND SAMPLE
If unexplained stool type 5,6,7. Isolate patient, send stool sample and consult with IPC Team.

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Appendix 3 – *Clostridium difficile* Integrated Care Pathway

Clostridium difficile Integrated Care Pathway

Indicate why this pathway is being commenced

☐ Newly diagnosed with C-difficile toxin during present inpatient stay.

☐ Recurrence of Diarrhoea in known C-difficile positive patient.

NB: This Information is available on patients KMR or sema helix.

Name: _____

Unit Number: _____

Ward: _____

Date of Birth: _____

Please affix name label

Date ward aware that patient has been identified as having *Clostridium difficile* toxin	Date	Signature

1. Actions - Nursing Staff		Date	Comment here if any variance ***and associated actions*** (further space overleaf if required).	Signature
1.1 Isolate patient	ϒ Yes ϒ No		(If 'No' ensure clinical incident completed).	
1.2 Source isolation sign fixed to patient door	ϒ Yes ϒ No			
1.3 Patient aware of why they are isolated and diagnosis	ϒ Yes ϒ No			
1.4 C-difficile information leaflet given to patient (on intranet)	ϒ Yes ϒ No			
1.5 Next of kin informed (with patient consent)	ϒ Yes ϒ No			
1.6 Domestic services informed of specific cleaning required	ϒ Yes ϒ No			
1.7 Doctor requested to start treatment	ϒ Yes ϒ No			
1.8 Current medication reviewed/stopped	ϒ Yes ϒ No			
1.9 Management and Treatment algorithm followed	ϒ Yes ϒ No			

1.10 Carry out nutritional assessment	ϒ Yes ϒ No			
1.11 Designated toilet or commode	ϒ Yes ϒ No			
1.12 Hand wipes available for patient use	ϒ Yes ϒ No			

2. Records of Nursing Actions – 10 days	**Date**										
2.1 Patient washed all over in bath/shower/bed (if immobile) using disposable wipes/clean towel		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.2 Monitor fluid balance		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.3 Monitor diarrhoea **(Using the Stool Record Chart)**		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.4 Treatment given		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.5 Night clothes and bedding changed daily		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.6 Decontaminate commode after each use with Tristel Jet		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.7 Clean patients hands after each episode of diarrhoea using soap and water/disposable wipe		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.8 Use disposable gloves and apron when dealing with body fluids		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.9 Wash hands with soap and water after each patient contact		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
2.10 Room/bed space cleaned daily with Tristel Fusion, (including floors, locker and table) and de-clutter surfaces		□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No	□ Yes □ No
Initials											

3. Variance table (complete for any no responses in nursing actions)				
Reference Number	Date	Variance	Action	Signature

Patient no longer requires isolation When passing stools of type 4 and have had no diarrhoea for past 48 hours (See Stool Record chart)	Date patient moved from single room	Date of Terminal Clean with Tristel Fusion	Signature

Appendix 4 – Algorithm on the Management and treatment of *Clostridium difficile* Infection