


A TRADITION OF INDEPENDENT THINKING

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Coláiste na hOllscoile Corcaigh

Safe Patient Care "Keeping our Residents Safe"

2016

Standard Precautions: All Residents at all Times ***#safepatientcare***


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Diarrhoea & Vomiting

Infection Prevention & Control in Residential Care Setting

Patricia Coughlan, Infection Prevention Control Nurse, HSE Disability Services

2016

Standard Precautions: All Residents at all Times ***#safepatientcare***

Gastroenteritis /Infectious Intestinal Disease(IID)

- Infection of the intestinal tract.
- Common yet preventable illness
- Common cause of outbreaks in acute and residential care settings
- Symptoms include a combination of diarrhoea, nausea, vomiting and occasionally abdominal pain, cramps and fever.
- In residential care setting all cases should be taken seriously, cared for using Standard Precautions and Contact Precautions, consider as infectious unless good evidence suggests otherwise

UCC

What causes gastroenteritis?

- A range of different microorganisms cause gastro-enteritis:
  - bacteria such as *Salmonella*, *E-coli 0157*
  - viruses such as norovirus and rotavirus and
  - protozoa such as *Cryptosporidium.*
- Different pathogens produce a range of symptoms – mild to severe
- Most acute diarrhoeal infection is caused by viruses and is short lived.
- In bacterial infections, the diarrhoea can be persistent.
- In care setting or where the person has had antibiotics need to consider *Clostridium difficile*

Some definitions….

Gastroenteritis defined as;

- diarrhoea, three or more episodes in a 24 hour period, or
- bloody diarrhoea or
- vomiting together with at least one other symptom (diarrhoea, abdominal pain/cramps, fever)

in the absence of a known non-infectious cause-medication or other medical condition.

Diarrhoea defined as :

Three or more loose/watery bowel movements which take up the shape of their container (which are **unusual or different** for the resident/client) in a 24 hour period.

Transmission of Gastroenteritis

Gastrointestinal pathogens are transmitted via

- contaminated food, water or
- contact – person to person - directly or indirectly by contaminated hands and equipment.
- airborne – when vomitus aeosolises !

Transmission of Gastroenteritis

Risk of Acquiring infection influenced by

- Infectious dose – dose of pathogen which a person is exposed to in order to produce a clinical illness
- Likelihood of pathogen surviving in the environment
- Is the person vulnerable – older adults, weakened immune system

Groups who pose a risk of onward transmission

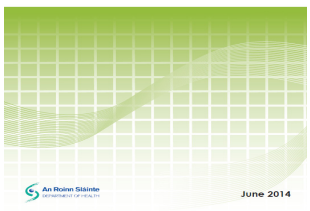
- high risk food handlers,
- healthcare and childcare staff,
- Children <5yrs,
- individuals with poor personal hygiene

When managing patients with suspected infectious diarrhoea….

S	**Suspect that a case may be infective where there is no clear alternative cause for diarrheoa**
I	**Isolate the patient and consult with the infection prevention and control team (IPCT) while determining the cause of the 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 *C. difficile* toxin, by sending a specimen immediately**

Available at

http://www.hpsc.ie/A-Z/Gastroenteric/Clostridiumdifficile/Guidelines/File,13950,en.pdf



C.difficile infection – a cause for concern?

HPSC Annual Report 2014
- 1,802 cases of C.difficile – 67% in over 65yrs
- 11% onset in Longterm Care Facilities (LTCF)
- 10 Outbreaks – 5 in LTCFs

Quarter 1 -2016
- C. difficile was mostly associated with acute hospitals (206; 44.5%).
- Large proportion of cases were associated with long term care facilities (55; 12%) and
- 103 cases; 22% had no overnight stay in a healthcare facility in 12 weeks prior to symptom onset
- Over one third of all cases (n=164) had CDI symptom onset while residing in the community

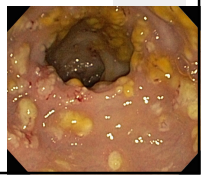
What is Clostridium difficile?

- Spore forming anaerobic bacterium
- Normally lives in the large intestine in up to
  - 3% of healthy adults,
  - 20% of adults on antibiotic therapy and
  - 80% of healthy newborns and infants which rarely causes a problem

What is Clostridium difficile Infection (CDI)?
- The bacteria grow in abnormally large numbers in the GIT of people taking antibiotics
- *C.difficile* induces tissue damage through the toxins it produces
- Illness - varies in severity from asymptomatic colonisation to severe diarrhoea and complicated colitis
- *C. difficile* leading cause of infectious nosocomial diarrhoea

Symptoms of *Clostridium difficile infection* (CDI)?

- Diarrhoea which may be explosive watery/mucousy foul-smelling, and /or
- Abdominal pain
- Fever
- CDI recurs in 8-50% of residents/clients and if a resident/client has 2 or more episodes of CDI, the risk of additional reoccurrence increases to 50-65%.



Endoscopic image of pseudomembranous colitis, with yellow pseudomembranes seen on the wall of the sigmoid colon

Who is most at risk of acquiring CDI?

- Currently on or recently completed taking antibiotics, multiple or prolonged antibiotic use
- Advanced age >60years,
- Hospitalisation
  - Exposure to a person with CDI
  - ICU stay
  - prolonged hospital stay
- Recent gastrointestinal surgery
- Immunosuppressive therapy
- Functional or cognitive impairment

C.difficile testing

- Fresh specimen- 1-2ml is sufficient
- If sample in lab by midday
  - results available within 24hrs (Mon-Thurs)
  - positive results are contacted by phone
- Only test if clinical signs and symptoms are present
- Repeat testing not routinely performed on specimens positive or negative within the last 21days - exception following consultation with microbiology team.
- Specimen to lab as soon as possible, if delay refrigerate at 2-8C and test within 72hrs

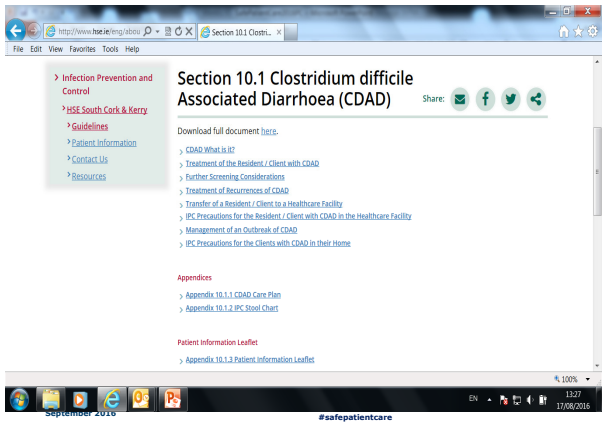
Report will read

- *C.difficile* PCR Target NOT detected /TARGET DETECTED
- Stool sample for clearance not required

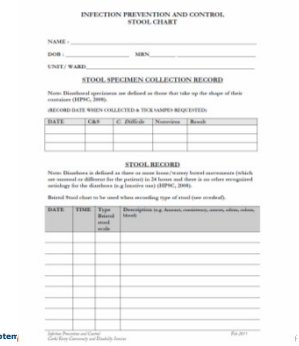
Transmission of *C.difficile*

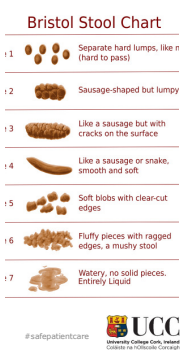
- *Clostridium difficile* is shed in faeces.
- Any surface, device, or material (e.g., commodes, raised toilet seats, grab rails) that becomes contaminated with faeces may serve as a reservoir for the Clostridium difficile spores.
- Clostridium difficile spores are transferred to patients/residents
  - Via the hands of healthcare personnel, who have touched a contaminated surface or item or
  - by the resident themselves having touched a contaminated surface or item
  - Or indirectly by use of contaminated equipment for another resident

Patient care
Standard and Contact Precautions



Stool Chart

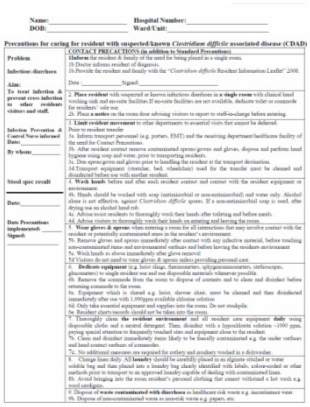




Care Plan

- Available on www.hpsc.ie in A-Z under C.diff

Or
www.hse.ie/infectioncontrol



Name: _____ Hospital Number: _____
DOB: _____ Ward/Unit: _____

Precautions for caring for resident with suspected/known *Clostridium difficile* associated disease (CDAD)

Problem	**CONTACT PRECAUTIONS (in addition to Standard Precautions)**
Infection: diarrhoea	**1Inform** the resident & family of the need for being placed in a single room. 1b Doctor informs resident of diagnosis. 1b Provide the resident and family with the "*Clostridium difficile* Resident Information Leaflet" 2008.
Aim: **To treat infection & prevent cross infection to other residents/ visitors and staff.**	Date: _____ Signed: _____ 2. **Place resident** with suspected or known infectious diarrhoea in a **single room** with clinical hand washing sink and en-suite facilities.If en-suite facilities are not available, dedicate toilet or commode for residents' sole use. 2b. Place a **notice** on the room door advising visitors to report to staff-in-charge before entering.
Infection Prevention & Control Nurse informed **Date:** _____ **By whom:** _____	3. **Limit resident movement** to other departments to essential visits that cannot be deferred. Prior to resident transfer 3a. Inform transport personnel (e.g. porters, EMT) and the receiving department/healthcare facility of the need for Contact Precautions. 3b. After resident contact remove contaminated aprons/gowns and gloves, dispose and perform hand hygiene using soap and water, prior to transporting resident. 3c. Don apron/gown and gloves prior to handling the resident at the transport destination. 3d Transport equipment (stretcher, bed, wheelchair) used for the transfer must be cleaned and disinfected before use with another resident.
Stool spec result **+ve** _____ **-ve** _____ **Date:** _____	4. **Wash hands** before and after each resident contact and contact with the resident equipment or environment. 4b. Hands should be washed with soap (antimicrobial or non-antimicrobial) and water only. Alcohol alone is not effective, against *Clostridium difficile* spores. If a non-antimicrobial soap is used, after drying use an alcohol hand rub. 4c. Advise resident to thoroughly wash their hands after toileting and before meals. 4d. Advise visitors to thoroughly wash their hands on entering and leaving the room.
Date Precautions Implemented: _____ **Signed:** _____	5. **Wear gloves & aprons:** when entering a room for all interactions that may involve contact with the resident or potentially contaminated areas in the resident's environment. 5b. Remove gloves and aprons immediately after contact with any infective material, before touching non-contaminated items and environmental surfaces and before leaving the resident's environment 5c. Wash hands as above immediately after gloves removed 5d Visitors do not need to wear gloves & aprons unless providing personal care.
	6. **Dedicate equipment** (e.g. blood slings, thermometers, sphygmomanometers, stethoscopes, glucometers) to single resident use and use disposable materials whenever possible. 6b. Remove the commode from the room to dispose of contents and to clean and disinfect before returning to the room. 6c. Equipment which is shared e.g. hoist, shower chair, must be cleaned and then disinfected immediately after use with 1,000ppm available chlorine solution. 6d. Only take essential equipment and supplies into the room. Do not stockpile. 6e Resident chart/records should not be taken into the room.
	7. Thoroughly clean, **the resident environment** and all resident care equipment **daily** using disposable cloths and a neutral detergent. Then, disinfect with a hypochlorite solution - 1000 ppm, paying special attention to frequently touched sites and equipment close to the resident. 7b. Clean and disinfect immediately items likely to be heavily contaminated e.g. the under surfaces and hand contact surfaces of commodes. 7c. No additional measures are required for cutlery and crockery washed in a dishwasher.
	8. Change linen daily. All **laundry** should be carefully placed in an alginate stitched or water soluble bag and then placed into a laundry bag clearly identified with labels, colour-coded or other methods prior to transport to an approved laundry capable of dealing with contaminated linen. 8b. Avoid bringing into the room resident's personal clothing that cannot withstand a hot wash e.g. wool cardigans.
	9. Dispose of **waste contaminated with diarrhoea** as healthcare risk waste e.g. incontinence wear 9b. Dispose of non-contaminated waste as non-risk waste e.g. papers, etc.

Infection Prevention and Control *Feb 2011*
Cork Kerry Community and Disability Services

September 2016 Standard Precautic

CDI - Treatment

- Once a positive diagnosis has been obtained & the patient has diarrhoea
  - Discontinue current antibiotic if possible
  - If still required, liaise with Cons Micro for advice
  - Avoid antiperistalic drugs
  - Commence Metronidazole 400 mg TDS x 10 days
- Treatment of recurrences
  - If a patient continues to have diarrhoea following initial treatment, or has a reoccurrence liaise with Cons. Microbiologist.
- Patient needs to re-commence an antibiotic,
  - liaise with the Cons. Microbiologist for advice on the most appropriate antibiotic.
- Refer to www.hpsc.ie in the A-Z Management of C.difficile in Primary Care

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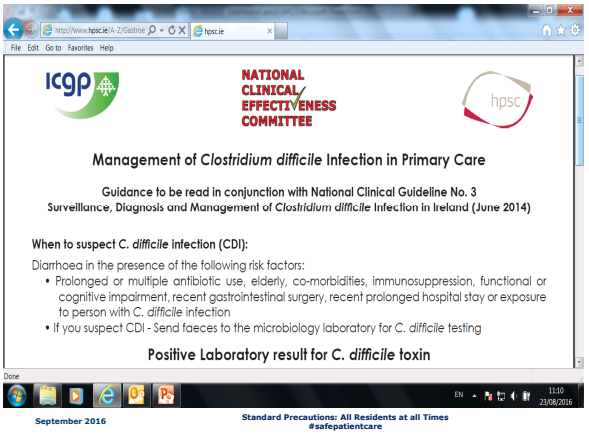

http://www.hpsc.ie/A-Z/Gastroe hpsc.ie
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icgp NATIONAL CLINICAL EFFECTIVENESS COMMITTEE hpsc

Management of *Clostridium difficile* Infection in Primary Care

Guidance to be read in conjunction with National Clinical Guideline No. 3
Surveillance, Diagnosis and Management of *Clostridium difficile* Infection in Ireland (June 2014)

When to suspect *C. difficile* infection (CDI):

Diarrhoea in the presence of the following risk factors:

- Prolonged or multiple antibiotic use, elderly, co-morbidities, immunosuppression, functional or cognitive impairment, recent gastrointestinal surgery, recent prolonged hospital stay or exposure to person with *C. difficile* infection
- If you suspect CDI - Send faeces to the microbiology laboratory for *C. difficile* testing

Positive Laboratory result for *C. difficile* toxin

Done
EN 11:10 23/08/2016

September 2016 **Standard Precautions: All Residents at all Times #safepatientcare**

IPC – Precautions

In addition to Standard Precautions implement Contact Precautions in a Healthcare Facility

1. Placement

Single room with en-suite facilities & clinical handwashing sink

- If en-suite not available, dedicate own toilet or commode
- Place a notice on the door requesting visitors to seek advice from Nursing staff before entering
- Movement and transport of the resident with CDAD should be limited to essential purposes only

Hand Hygiene

- Hand washing with soap (non-antimicrobial or antimicrobial) and water performed
  - before and after all patient and equipment contact
  - after glove removal
  - The physical action of rubbing and rinsing is the only way to remove spores from hands
- Do not use alcohol-based hand rubs alone as they are not effective against spores
- Encourage/facilitate residents to wash hands frequently especially after the bathroom, using commode and before eating

Protective Clothing

- In addition to Standard Precautions,
  - gloves and aprons should be worn for contact with the resident and their equipment and environment
- Contaminated aprons/gowns and gloves should be removed and disposed of and hand washing performed prior to leaving the room or patient care area.
- When in the room adhere to Moments for Hand Hygiene

Patient Care Equipment

- Only take essential supplies into the room
  - Any unused will have to be discarded when Contact Precautions discontinued
  - Resident charts/records should be outside the room
- Dedicate equipment for resident own use
  - Hoist slings, stethoscopes, thermometres etc.
- Any equipment shared must be cleaned and disinfected immediately after use

Environmental cleaning and disinfection

- Environment and all patient care equipment should be thoroughly
  - cleaned with a neutral detergent and
  - disinfected daily with a sporicidal disinfectant e.g. chlorine releasing agent at 1000 ppm available chlorine
- Check bedpan washers/disinfectors are in good working order
- Laundry – place used and soiled linens in an alginate bag
- Waste – dispose of soiled waste as risk waste

Discontinuation of Contact Precautions

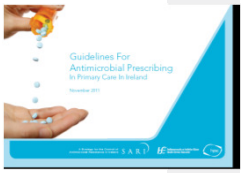
- Single room placement with Contact Precautions may be discontinued when
  - the patient has had at least 48 hrs without diarrhoea and
  - has had a formed or normal stool for that patient.

Prevention and Control of CDI

- Good communication is essential, prior to transferring patients with CDI or a history of CDI between healthcare facilities and to their home
- This is to facilitate
  - appropriate precautions to prevent cross-infection
  - appropriate antibiotic prescribing
  - appropriate monitoring for suspected recurrence of CDAD

Prevention and control of CDI

- Antibiotic stewardship
  - All HCF must have antibiotic guidelines specifying use of narrow spectrum antibiotics for specific infections
  - Should include
    - duration of antibiotic therapy
    - drug dosage
    - Combination of antibiotics restricted



CDI…Take a single case seriously

On suspicion of a resident with CDI implement precautions i.e. when sample sent as opposed to waiting for the result

- Single room with en-suite facilities
- Handwashing with soap and water
  - Following caring for all clients with diarrhoea
  - Alcohol Handrub not effective
  - Facilitate resident with hand washing
- Gloves and aprons for all contact with residents who have symptom and for contact with their environment
- Environmental Decontamination
  - Clean and Disinfect environment and equipment daily

Two or more people with similar illness ….Is it an outbreak?

- An outbreak maybe defined as having more linked cases with similar symptoms than would be expected .
- Generally two or more people being affected with the same symptoms who are linked in time and place
  - More than one resident in the residential care setting with symptoms of diarrhoea and or vomiting
    - Or could be a combination of residents and staff who are in the RCF with symptoms of diarrhoea and or vomiting
  - A sudden increase in the number of absent staff from the residential care setting with symptoms of diarrhoea and or vomiting

Outbreak Management – C.difficile

- Two or more linked CDI cases over a defined period agreed locally,
  - taking account of the background rate or
  - where the observed number of CDI cases exceeds the expected number
- An outbreak control team (OCT) should be set up for both hospital and community CDI outbreaks

Outbreaks of Infectious Intestinal Disease in Ireland

Quarter 4, 2015

- 35 General Outbreaks - Hospital, Nursing Home , Community Hospitals, Schools, Hotels , Childcare settings
- 20 IID outbreaks in Nursing Homes, Community Hospital, Residential Settings of which
  - **13 Noroviral Infection**
  - 6 Acute Infectious Gastroenteritis
  - 1 Camphylobacter

In 2014

- 1,802 cases of *C.difficile* – 67% in over 65yrs
- 11% onset in Longterm Care Facilities (LTCF)
- 10 Outbreaks – **5 in LTCFs**

Norovirus

- Produces nausea , vomiting – generally the pronounced symptom- sudden onset , often projectile , also diarrhoea
- Estimated that 1%-5% of population are affected annually, significant cause of outbreaks
- Human intestinal tract is the reservoir
- Transmitted via oro faecal route, person to person by direct or indirect contact with faeces or vomitus
- Incubation Period- generally 24- 48hrs, can be shorter
- Infectivity – virus can be shed for up to 2 weeks after illness, maximal when diarrhoea is present
- Susceptible groups– residential settings, hospitals, childcare setting

Recognising an Outbreak of Norovirus

- Where there is an outbreak of diarrhoea and /or vomiting , in the absence of other evidence (positive stool cultures) norovirus should be considered a likely cause if;
  - Symptoms of vomiting in 50% of cases – often projectile vomiting
  - Residents /staff become ill within 15- 48hrs of becoming exposed
  - Illness lasts 12-60
  - Both residents and staff are affected (but not always the case)
  - Stools negative for bacteria (including *C.difficile*)

Difficulties with Norovirus

- Difficult to control due to
  - effective person-to –person transmission,
  - low infectious dose,
  - frequent exposure to contaminated environment or aerosol of vomitus,
  - stability of the virus in the environment.
  - immunity is not long lasting,
  - large population at risk

Difficulties with Norovirus

- Challenges in Residential Care Settings
  - Communal setting
  - Shared bathrooms
  - Home like environment
  - Population - Low mobility, Incontinence, Understanding
  - Staff turnover, shortages, agency
  - Throughput of visitors

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What action do you need to take?

- Recognising an outbreak
  - Not possible to completely prevent outbreaks but early recognition and interventions can minimise the effect
  - Seek medical advice/review
- Reporting
  - Reportable to the Department of Public Health(DPH)
  - Designated person in charge to liaise with DPH
  - Contact IPCN where available
  - HIQA
- Investigation –
  - Dept of Public Health will investigate to ascertain if it is an outbreak – use of line list, assessment of population at risk and environmental factors,
  - Specimen collection – stool for investigation for bacterial or viral cause
  - Environmental Health Officer in case of food or water borne illness

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Outbreak Code:	**Contact Name:**
Name & address of Facility:	Contact number:
Total number of residents:	
Total number of staff:	**Please include all symptomatic residents AND staff**

Name / DOB	Age	Ward	Rt	St	Onset (Day xx/xx) Time	Loose Stool Y/N No. in 24hrs Blood? Y/N Mucous? Y/N	Vomit Y/N No. in 24hrs	Fever Y/N	Abdo Cramps Y/N	Date last episode (Day xx/xx) Time	Stool Sent Y/N	+/- Comment

Outbreak Control - Key Practical IPC Measures

- Effective hand washing with soap and water
  - AHR may not always be effective
  - Facilitate residents
- Separation of ill from those who are well (and haven't been exposed)
- Prompt placement in single room/segregation/exclusion of residents /service users or staff who are effected
  - Contact Precautions in Healthcare Setting
  - Exclusion of staff until 48hrs after last symptoms
- Prompt cleaning and disinfection of areas where vomiting occurs
- Enhanced cleaning and disinfection of environment and equipment
  - Using a chlorine based disinfectant

Outbreak Control Key Practical IPC Measures contd

- Limitation of movement of staff
- Consider limitation of social activities and gathering
- Consider how food is prepared and handled
- Review planned admissions and respite
  - May need to be postponed
- Inform other healthcare facilities prior to essential transfer
- Communication
  - On-going with DPH & IPC to review control measures
  - Internally to all staff, families, visiting healthcare professional

Key Messages for IPC of Gastroenteritis

- Consider as infectious unless good evidence suggests otherwise
- Implement Infection Control Measures….don't wait for results from the laboratory..
- Report and seek advise …early..
- If you have gastroenteritis …stay at home…

Sources of Information

- HPSC(2008). Surveillance, Diagnosis and Management of Clostridium difficile-associated disease in Ireland. Health Protection Surveillance Centre: Clostridium difficile Sub-Committee
- HPSC(2010) *Norovirus* Dublin: Health protection Surveillance Centre. Available from http: www.ndsc.ie/hpsc/A-Z/Gastroenteric/Norovirus/Factsheet/
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- HPSC Enhance Surveillance C.Diffificle Q1,2016 http://www.hpsc.ie/A-Z/Gastroenteric/Clostridiumdifficile/Surveillance/EnhancedSurveillance/QuarterlyReports/File,15754,en.pdf
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- HPSC (2012) Infectious Intestinal Disease: Public Health & Clinical Guidelines http://www.hpsc.ie/A-Z/Gastroenteric/GastroenteritisorIID/Guidance/File,13492,en.pdf

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Thanks You