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Medicines Optimisation *Key Messages* – *Bulletin 34*

Antimicrobial prescribing guidance to reduce the risk of *C.difficile*

KEY MESSAGE: Prescribing antimicrobials wisely can help reduce the incidence of *Clostridium difficile* infection (*Cd*I)

C.difficile is a bacterium present in the gut flora in some people. Antimicrobials disturb gut flora balance allowing *C. difficile* to multiply causing symptoms which vary from mild diarrhoea to fatal bowel inflammation. The *C. difficile* spores are shed in the faeces and can survive for long periods in the environment and if ingested they can infect others.

Reducing the risk of *Cd*I.

Prudent Antimicrobial prescribing – using local formulary guidance[1]

- **Only prescribe** when indicated by clinical condition or from results of microbiological investigation.
- **Do not prescribe** for sore throat, coughs and colds in low risk patients
- **Consider** delayed prescriptions in case symptoms worsen or become prolonged.
- **Choose** a narrow spectrum agent where possible and prescribe a short course generally 3-7 days.
- **Reserve** broad spectrum antimicrobials for serious infections when pathogen is unknown.
- **Co-prescribing** with Proton Pump Inhibitor (PPI) may cause an increased chance of developing *Cd*I[2].

Isolate infected patients

- **Reduces** the spread of infection in areas where people are in close contact e.g., care homes.

Good Hygiene

- Everyone MUST wash their hands with soap and water before and after each contact with a *Cd*I patient including at home. Alcohol gel is **NOT** effective against *C. difficile* spores[3]
- Carers MUST wear gloves and aprons when dealing with *Cd*I patients.
- Ensure toilets and commodes are cleaned well after use.
- Follow guidelines[4] where possible.

Patients are most at risk of *C. difficile* Infection if they are:

- Increased age (more than 65 years old)[10]
- Suffering from severe underlying diseases or Immunocompromised
- Taking, or have recently taken antimicrobials, in particular repeat courses
- In a close contact environment e.g. care homes and hospitals
- Taking a PPI
- Post gastrointestinal surgery or being fed via a nasogastric tube[5]
- Have had *Cd*I in the past

Antimicrobials to avoid where possible as they are strongly associated with *CdI*[6]

- **Cephalosporins - second** (**cefaclor –** *non-formulary*), **third generation** (**cefixime –** *non-formulary*) **and fourth generation** (**cefepime –** *non-formulary*): first generation (cefalexin) oral cephalosporins are lower risk but currently these should also be avoided **unless** treatment outweighs risk.
- **Clindamycin** (*specialist advice only*)
- **Quinolones (associated with virulent 027 strain)** e.g**.,** ciprofloxacin, ofloxacin.
- **Broad spectrum penicillins** (e.g., co-amoxiclav)
- **Longer duration of treatment, multiple courses, multiple antibiotics prescribed concurrently.**

When can broad-spectrum antibiotics be recommended?[7]

- **As per the local antimicrobial formulary for all indications.**

Where therapy has failed or in special circumstances, *i.e. where patient has a history of C.difficile,* ***seek advice from local microbiologist.***

Counsel patients at risk to be alert for signs of *CdI* and to seek medical help if diarrhoea develops.

Do not suggest / prescribe anti-motility drugs (e.g., loperamide) for diarrhoea where the patient has a recent history of antibiotic use - this will lengthen the patients' exposure to the bacterial toxic effect in the gut.

What should I do if I suspect *C.difficile*?

Clinicians should apply the following mnemonic protocol (SIGHT)[8] when managing suspected potentially infectious diarrhoea:

- **S** Suspect that a case may be infective where there is no clear alternative cause for diarrhoea
- **I** Isolate the patient and consult with the infection control team (ICT) 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 toxin, by sending a specimen immediately*

*For adults with suspected *Cd/I* infection - send a stool sample to test for *C.difficile*. The container should be ideally ¼ filled[9]

***C.difficile* treatment**

- **Refer to local antimicrobial formulary**

References:

1. Local Antibiotic Formulary – https://www.norfolkandwaveneyformulary.nhs.uk/chaptersSub.asp?FormularySectionID=5 [accessed 28/11/23]
2. Updated Guidance on the management and treatment of *Clostridium difficile* infection. PHE 2013. [accessed 29/4/21]
3. NHS Choices, Preventing CDI Infections [accessed 29/4/21]
4. Norfolk and Norwich University Hospitals NHS Foundation Trust » Clostridium difficile (nnuh.nhs.uk)
5. UKMi Medicines Q&A CDI infection – are acid suppressant medicines a risk factor? Feb 2012 [accessed 29/4/21]
6. NICE evidence summary [ESMPB1] CDI: risk with broad-spectrum antibiotics-points-from-the-evidence March 2015 [accessed 29/4/21]
7. NICE CKS – Antibiotic associated diarrhoea [accessed 29/4/21]
8. DH & HPA CDI infection: How to deal with the problem [accessed 29/4/21]
9. NICE CKS Antibiotic associated diarrhoea - What tests should I perform if a Clostridium difficile infection is suspected? [accessed 29/4/21]
10. Risk factors | Background information | Diarrhoea - antibiotic associated | CKS | NICE [accessed 17/6/21]

Title	KEY MESSAGES Bulletin 34 Antimicrobial prescribing guidance to reduce the risk of *C.difficile*
Description of policy	*To inform healthcare professionals*
Prepared by	Medicines Optimisation Team
Other relevant approved documents	Key Message Bulletin 30 – Proton Pump Inhibitors (PPIs): long term use
Evidence base / Legislation	Level of Evidence: *A. based on national research-based evidence and is considered best evidence* ***B. mix of national and local consensus*** *C. based on local good practice and consensus in the absence of national research based information.*
Dissemination	Is there any reason why any part of this document should not be available on the public web site?Yes / No
Approved by	*V2.1 Norfolk & Waveney Medicines Optimisation Team* ☐ ☒
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Version Control (To be completed by policy owner)

Version	Date	Author	Status	Comment
0.1	July 2014	Prescribing & Medicines Management Team Marion Sully (MS)	Draft	To consider some wording and take to PRG.
0.2	07/08/2014	MS	Draft	To add treatment guidance for C Diff infection – include note not to stop PPI
1.0	October 2014	MS	Final	
1.1	February 2015	MS	Update	Remove campylobacter indication as not relevant added co-amoxiclav as potential to cause C di. Link to NICE URTI removed – now on static list. All links checked and updated. Updated to be in line with antimicrobial audit.
1.2	October 2016	MS	Update	List Co-amoxiclav alone as a drug which has a high chance of cause for D Diff. Add Nitrofurantoin, Pivmecillinam to the list of acceptable drugs. Update the current treatments

				where broad spectrum antimicrobials can be used also split into first and second line to make more visible for these uses.
2.0	January 2018	MS	Update	Epididymitis moved to second/third line for quinolone. Added PHE as reference.
2.1	July 2021	RP	Final	Updated logo Replaced separate links to single formulary Norfolk & Waveney. Replaced broken link to NNUH guidelines Good hygiene paragraph. 'Patients are most at risk of C. difficile Infection if they are: added references. 'Antimicrobials to avoid where possible'- wording changed in line with updated CKS link (Nov 2020), fourth generation cephalosporin added, broad spectrum penicillins added. Cephradine removed as non-formulary levofloxacin,moxifloxacin and norfloxacin removed, long courses of amoxicillin and ampicillin removed. 'List of antimicrobials to choose where appropriate' removed as agreed by JA. When can broad-spectrum antibiotics be recommended? – link to local antibiotic formulary added, wording amended, where possible removed, table removed, wording from CKS added ref 8, loperamide added as example of anti-motility drug. What should I do if I suspect C.diff? SIGHT information added and reference. Treatment of C.diff table removed and link to local antibiotic formulary added. Summary Box with information to remember removed as advised by JA.
2.2	December 2023	NC	Update	Logos updated. Hyperlink to local antimicrobial formulary updated, reference also updated. Introduced the abbreviation PPI on page 1 by providing

				its full form - Proton Pump Inhibitor (PPI). Restarted the version control table as unable to make additions to it. KMB 30 named as other approved relevant documents in table on page 3. Taking, or have recently taken antimicrobials, taking a PPI and having had *Cd*I in the past all added as risk factors for *Cd*I infection on page 1. Notes added after Cefaclor, Cefixime and Cefepime to sate non-formulary as per netformulary chapter 5 infection. Note added after Clindamycin to state prescribing on specialist advice only. Advice for patients at risk of *Cd*I changed to 'Counsel patients at risk to be alert for signs of *Cd*I and seek medical help if diarrhoea develops'. Previously said 'Counsel patients at risk to be alert for signs of *Cd*I and to STOP their antimicrobial and seek medical help if diarrhoea develops'.