

Health PEI Provincial Antibiotic Advisory Team: *Clostridium difficile* Risk with Specific Anti-infectives or Anti-infective Classes

Provincial Expert Opinion and Summary:

- 1) **Highest Risk of CDI:** clindamycin, moxifloxacin, for any particular patient - any previous antibiotic that has triggered an episode of *C. difficile* in the past
- 2) **Higher Risk of CDI:** carbapenems, β -lactam/ β -lactamase inhibitor combinations, fluoroquinolones other than moxifloxacin (ciprofloxacin>levofloxacin), cephalosporins (higher risk with 3rd generation), penicillins
- 3) **Lower Risk of CDI:** macrolides, TMP/SMX, aminoglycosides, tetracyclines, chloramphenicol, metronidazole, vancomycin, nitrofurantoin, fosfomycin

References:

UpToDate.com (2014) ¹	Bugs & Drugs (2012) ²	Johns Hopkins POC-IT ABX Guide ³	The Medical Letter (2011) ⁴	CMAJ article (2008) ⁵ (referenced in Bugs & Drugs 2012)	Clinical Infectious Diseases article (2007) ⁶	IDSA <i>Clostridium difficile</i> guidelines (2010) ⁷
<p>Frequently associated:</p> <ul style="list-style-type: none"> -fluoroquinolones -clindamycin -penicillins (broad spectrum) -cephalosporins (broad spectrum) <p>Occasionally associated:</p> <ul style="list-style-type: none"> -macrolides -trimethoprim -sulfonamides <p>Rarely associated:</p> <ul style="list-style-type: none"> -aminoglycosides -tetracyclines -chloramphenicol -metronidazole -vancomycin 	<p>Highest risk:</p> <ul style="list-style-type: none"> -cephalosporins -quinolones (risk: moxifloxacin > ciprofloxacin > levofloxacin [CMAJ 2008; 179:767-72]) -clindamycin <p>Lower risk:</p> <ul style="list-style-type: none"> -aminoglycosides -TMP/SMX -tetracyclines -metronidazole 	<p>High risk:</p> <ul style="list-style-type: none"> -clindamycin -3rd generation cephalosporins -fluoroquinolones <p>Medium risk:</p> <ul style="list-style-type: none"> -amoxicillin/ clavulanate -other β-lactam/ β-lactamase inhibitor combinations -other β-lactams -carbapenems <p>Low or minimal risk:</p> <ul style="list-style-type: none"> -metronidazole -vancomycin IV -aminoglycosides -nitrofurantoin -fosfomycin -sulfonamides -tetracyclines 	<p>One common risk factor is exposure to antimicrobials, particularly:</p> <ul style="list-style-type: none"> -clindamycin -ampicillin -cephalosporins -fluoroquinolones 	<p>Adjusted rate ratio, from highest to lowest risk:</p> <ol style="list-style-type: none"> 1) clindamycin 2) gatifloxacin 3) cephalosporins 4) moxifloxacin 5) ciprofloxacin 6) penicillins 7) levofloxacin 8) macrolides <p>The following were not associated with an increased risk on multivariable analysis:</p> <ul style="list-style-type: none"> -all other abx -TMP/SMX -tetracyclines 	<p>Antimicrobials associated with CDAD included:</p> <ul style="list-style-type: none"> -clindamycin -1st, 3rd, 4th generation cephalosporins -carbapenems -β-lactam/β-lactamase inhibitors -macrolides -fluoroquinolones -TMP/SMX -gentamicin -IV vancomycin -metronidazole 	<p>Restricting the use of the following (except for surgical antibiotic prophylaxis) may be particularly useful:</p> <ul style="list-style-type: none"> -cephalosporins -clindamycin

1. LaMont JT. 2014. *Clostridium difficile* in adults: Epidemiology, microbiology, and pathophysiology. (Accessed December 8, 2014).
2. Blondel-Hill E. and Fryters S. Bugs & Drugs 2012.
3. Johns Hopkins POC-IT ABX Guide (accessed December 5, 2014).
4. Treatment of *Clostridium difficile* Infection. The Medical Letter on Drugs and Therapeutics. 2011. **53**(1358):14.
5. Dial S. 2008. Patterns of antibiotic use and risk of hospital admission because of *Clostridium difficile* infection. CMAJ 179(8):767-72.
6. Dubberke ER. 2007. *Clostridium difficile*-Associated Disease in a Setting of Endemicity: Identification of Novel Risk Factors. CID 45:1543-9.
7. Cohen SH et al. 2010. Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults: 2010 Update by the Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA). Infect Control Hosp Epidemiol **31**(5):431.