

Prescriber Resources List



CADTH has summarized key guidelines and recommendations for antibiotic therapies for the following **four bacterial infections**:

- **uncomplicated cystitis** (a simple infection of the bladder)
- **uncomplicated pyelonephritis** (a simple infection of the kidney)
- **acute bacterial exacerbation of chronic bronchitis in chronic obstructive pulmonary disease (COPD)**
- **acute bacterial sinusitis.**

Prescriber Resources List





This tool presents first-, second-, and third-line therapeutic recommendations (where available) from these guidelines with respect to these four indications. Clinical resources included are from Canada, the US, Europe, and the UK, as well as international sources.

CADTH conducted a study to explore antibiotic prescribing practices of Canadian primary care providers for these same four indications. This report, entitled *Fluoroquinolone Prescribing and Use in Canadian Primary Care Practice*, can be found [here](#).

Prescriber Resources

Uncomplicated Cystitis

For the treatment of uncomplicated cystitis in average risk populations (e.g., non-children, non-pregnant, and non-elderly), the majority of guidelines reviewed indicate that nitrofurantoin and sulfonamides are the preferred antibiotic therapies. While some resources included fluoroquinolones as an option or a second-line therapy, many indicated that this drug class should be reserved for more severe indications than cystitis.






Country/Region	Organization	First-Line Antibiotic Therapy	Second-Line Antibiotic Therapy	Third-Line Antibiotic Therapy	Notes
Canada 	Society of Obstetricians and Gynaecologists of Canada	Sulfonamides Fluoroquinolones Nitrofurantoin Fosfomycin			Guidelines do not indicate by first-, second-, third-line, etc.
Canada 	Canadian Urological Association	Sulfonamides Fluoroquinolones Nitrofurantoin Fosfomycin			Guidelines do not indicate by first-, second-, third-line, etc.
US 	American Congress of Obstetricians and Gynecologists	Sulfonamides Fluoroquinolones Nitrofurantoin Fosfomycin			Fluoroquinolones, although highly effective, should not be used as a first-line drug where resistance to TMP-SMX is low.
US 	Infectious Diseases Society of America	Nitrofurantoin Sulfonamides Fosfomycin Beta-lactams			Fluoroquinolones, although efficacious, should be reserved for important uses other than cystitis.

Country/Region	Organization	First-Line Antibiotic Therapy	Second-Line Antibiotic Therapy	Third-Line Antibiotic Therapy	Notes
US 	American Academy of Family Physicians	Fosfomycin Nitrofurantoin Sulfonamides	Fluoroquinolones	Beta-lactams	Although fluoroquinolones are effective, they have the propensity for collateral damage and should only be considered for patients with more serious infections.
European Union 	European Association of Urology	Nitrofurantoin Sulfonamides Fosfomycin Beta-lactams Fluoroquinolones			Despite lower resistance rates as demonstrated in certain countries, fluoroquinolones are not considered first choice because of adverse events.
UK 	Scottish Intercollegiate Guidelines Network	Sulfonamides Nitrofurantoin			Guidelines do not indicate by first-, second-, third-line, etc.
International	Medscape	Nitrofurantoin Sulfonamides Fosfomycin	Fluoroquinolones		Fluoroquinolones should only be used as first-line therapy in areas with high rates of TMP-SMX resistance, as these drugs have other important indications.
International	UpToDate	Nitrofurantoin Sulfonamides Fosfomycin Beta-lactams			When possible, fluoroquinolones should be reserved for more important uses other than acute cystitis.
International	DynaMed	Nitrofurantoin Sulfonamides Fosfomycin Beta-lactams			Guidelines do not indicate by first-, second-, third-line, etc.
International	RxFiles	Nitrofurantoin Sulfonamides Fosfomycin			Guidelines do not indicate by first-, second-, third-line, etc.

TMP-SMX= trimethoprim/sulfamethoxazole.




Uncomplicated Pyelonephritis

For the treatment of uncomplicated pyelonephritis in average risk populations (e.g., non-children, non-pregnant, and non-elderly), the majority of guidelines reviewed indicate that sulfonamides and fluoroquinolones are the preferred antibiotic therapies.

Country/Region	Organization	First-Line Antibiotic Therapy	Second-Line Antibiotic Therapy	Third-Line Antibiotic Therapy	Notes
US 	American Congress of Obstetricians and Gynecologists	Fluoroquinolones			Guidelines do not indicate by first-, second-, third-line, etc.
US 	Infectious Diseases Society of America	Fluoroquinolones Sulfonamides			Guidelines do not indicate by first-, second-, third-line, etc.
US 	American Academy of Family Physicians	Fluoroquinolones Sulfonamides			Guidelines do not indicate by first-, second-, third-line, etc.
European Union 	European Association of Urology	Fluoroquinolones Sulfonamides Beta-lactams			Guidelines do not indicate by first-, second-, third-line, etc.
UK 	Scottish Intercollegiate Guidelines Network	Fluoroquinolones			Guidelines do not indicate by first-, second-, third-line, etc.
International	Medscape	Fluoroquinolones	Sulfonamides		
International	UpToDate	Fluoroquinolones Sulfonamides Beta-lactams			Guidelines do not indicate by first-, second-, third-line, etc.
International	DynaMed	Fluoroquinolones Sulfonamides			Guidelines do not indicate by first-, second-, third-line, etc.

Acute Bacterial Exacerbation of Chronic Bronchitis in COPD




For the treatment of acute bacterial exacerbation of chronic bronchitis in chronic obstructive pulmonary disease (COPD) in average-risk populations (e.g., non-children, non-pregnant, and non-elderly), the majority of guidelines reviewed indicate that beta-lactams, macrolides, and tetracyclines are the preferred antibiotic therapies. While some resources included fluoroquinolones as an option or a second-line therapy, the guidelines below indicated that this drug class should be reserved for more severe cases of this indication or in cases of treatment failure.

Country/Region	Organization	First-Line Antibiotic Therapy	Second-Line Antibiotic Therapy	Third-Line Antibiotic Therapy	Notes
Canada 	Canadian Thoracic Society and Canadian Infectious Disease Society ^a	Macrolide Beta-lactams Tetracycline Sulfonamides	Fluoroquinolones		Fluoroquinolones as an alternative for treatment failure.
US 	John Hopkins Medicine	Beta-lactams Tetracycline Macrolides	Fluoroquinolones		Fluoroquinolones for severe cases or recent antibiotic therapy.
European Union 	European Respiratory Society and European Society of Clinical Microbiology and Infectious Diseases	Beta-lactams Fluoroquinolones			Guidelines do not indicate by first-, second-, third-line, etc.
International	UpToDate	Macrolides Tetracycline Sulfonamides Beta-lactams			In complicated outpatients, respiratory fluoroquinolones are recommended; however, clinicians must consider that their use increases the risk of <i>C. difficile</i> infection.
International	DynaMed	Beta-lactams Fluoroquinolones Macrolides Tetracycline			Guidelines do not indicate by first-, second-, third-line, etc.

^a This guideline was published before the Canadian Infectious Disease Society amalgamated with the Canadian Association for Medical Microbiology to become the Association of Medical Microbiology and Infectious Disease Canada, or AMMI Canada.

Acute Bacterial Sinusitis

For the treatment of acute bacterial sinusitis in average risk populations (e.g., non-children, non-pregnant, and non-elderly), the majority of guidelines reviewed indicate that beta-lactams are the preferred antibiotic therapy. Many of these guidelines also include fluoroquinolones as an option, generally as a second-line therapy.

Country/Region	Organization	First-Line Antibiotic Therapy	Second-Line Antibiotic Therapy	Third-Line Antibiotic Therapy	Notes
Canada 	Canadian Rhinosinusitis Best Practice and Standards Working Group	Beta-lactams Sulfonamides	Beta-lactams Fluoroquinolones		
US 	Infectious Diseases Society of America	Beta-lactams	Tetracycline		
US 	American Academy of Otolaryngology-Head and Neck Surgery	Beta-lactams	Tetracycline Fluoroquinolones		
International	Medscape	Beta-lactams Macrolides	Beta-lactams Macrolides Fluoroquinolones		
International	UpToDate	Beta-lactams	Tetracycline Fluoroquinolones		The serious adverse effects associated with fluoroquinolones generally outweigh the benefits for patients with acute bacterial sinusitis.
International	DynaMed	Macrolides Fluoroquinolones			Guidelines do not indicate by first-, second-, third-line, etc.
International	RxFiles	Beta-lactams			Guidelines do not indicate by first-, second-, third-line, etc.

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