CLINICAL ANTIBIOTIC GUIDELINES†

ACYCLOVIR IV*/PO **RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Herpes Simplex Herpes Zoster	Cytomegalovirus	Epstein Barr Virus

Indicated:

IV:

1. Therapy for suspected or documented Herpes simplex encephalitis
2. Therapy for suspected or documented Herpes simplex infection of a newborn or immunocompromised patient
3. Therapy for primary varicella infection in immunocompromised patients
4. Therapy for severe or disseminated varicella-zoster infections in immunocompromised or immunocompetent patient
5. Therapy for primary genital herpes with neurologic complications

Oral:

1. Therapy for primary Herpes simplex infections (oral/genital)
2. Suppressive (preventative) therapy for recurrent (≥ 6 episodes/year) severe Herpes simplex infections (oral/genital)
3. Episodic therapy for recurrent (≥ 6 episodes/year) Herpes simplex genital infections (initiate within 24 hours of prodrome onset)
4. Prophylaxis for HSV in bone marrow transplants where patient is seropositive
5. Therapy and suppressive therapy for Eczema Herpeticum
6. Therapy for varicella-zoster infections in immunocompetent and immunocompromised patients (if not severe)
7. Therapy for primary varicella infections in pregnancy
8. Therapy for varicella in immunocompetent patients > 13 years old (initiate within 24 hours of rash onset)
9. Therapy for varicella in patients < 13 years old (initiate within 24 hours of rash onset) if there is a chronic cutaneous or pulmonary disorder, long term salicylate therapy, or short, intermittent or aerosolized corticosteroid use

Not Indicated:

1. Therapy for acute Epstein-Barr infections (acute mononucleosis)
2. Therapy for documented CMV infections

CLINICAL ANTIBIOTIC GUIDELINES[†]

AMIKACIN *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Enterobacteriaceae	Staphylococcus spp	Streptococcus spp
Pseudomonas spp		Enterococcus spp
some Mycobacterium spp		Alcaligenes spp
		Anaerobes

Indicated:

1. Therapy of gram-negative organisms that are resistant to gentamicin and tobramycin but susceptible to amikacin
2. As combination therapy for the treatment of some Mycobacteria spp.

Not Indicated:

1. First line aminoglycoside therapy

CLINICAL ANTIBIOTIC GUIDELINES[†]

AMOXICILLIN-CLAVULANATE

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae	Enterobacteriaceae producing inducible β-lactamases*	Pen-R Streptococcus pneumoniae
β-haemolytic Streptococci		Enterococcus faecium
Enterococcus faecalis		Pseudomonas spp
Escherichia coli		Stenotrophomonas maltophilia
Klebsiella spp		Chlamydia spp
Proteus mirabilis		Mycoplasma spp
Haemophilus influenzae		
Moraxella catarrhalis		
Neisseria spp		
Pasteurella spp		
Anaerobes		

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Therapy of animal and human bite wound infections
2. Second line therapy of otitis media
3. Second line therapy of acute exacerbations of chronic bronchitis and acute sinusitis
4. Therapy/stepdown therapy of polymicrobial infections (e.g. skin and soft tissue, odontogenic, aspiration pneumonia, intra-abdominal)
5. Therapy of periorbital cellulitis in paediatric patients
6. Second line therapy of urinary tract infections in paediatric, elderly, or catheterized patients, where there is failure/resistance of first line agents

Not Indicated:

1. Therapy of pneumonia where there is no suspicion of aspiration
2. First line therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
3. First line therapy of urinary tract infection
4. Therapy of chronic/asymptomatic bacteriuria in elderly or catheterized patients

CLINICAL ANTIBIOTIC GUIDELINES†

AMPHOTERICIN B, LIPID-COMPLEXED *NON-FORMULARY – REQUIRES COMPLETION OF ANTIBIOTIC FORM*

Lipid-complexed amphotericin B formulations may minimize nephrotoxicity when compared to conventional amphotericin B. To date, there exists no strong evidence that these formulations are more efficacious than the conventional formulation. A therapeutic course may cost in excess of $30,000.

Criteria for Lipid-Complexed Amphotericin B

1. Evidence of Systemic Fungal Infections

- Culture positive for Candida at a normally sterile site (e.g. blood, CSF, deep tissue sample)

OR

- Evidence of Candida from ≥ 3 separate body sites in patients at risk for disseminated Candidiasis (i.e. patients with neutropenia, patients on broad spectrum antibiotics, or patients with central venous lines) with clinical signs of active infection (e.g. fever and leucocytosis despite antibacterial therapy)

OR

- Histology proven evidence of disseminated Candidiasis

OR

- Histologic and/or culture evidence of another invasive fungal infection (e.g. aspergillosis, mucormycosis)

OR

- Compelling radiographic and clinical evidence of invasive fungal infection in consultation with Infectious Diseases (ID) specialists.

AND

2. Evidence of deteriorating renal function

- A tripling of the serum creatinine from the patient's baseline value

OR

- A serum creatinine of greater than or equal to 250 µmol/L.

AND

3. Procedure to be followed

- To be ordered by an Infectious Diseases physician only.
- Requests for lipid-complexed Amphotericin B require completion of the Antibiotic Form.
- If criteria are met, Pharmacy will obtain and dispense a commercial preparation of lipid-complexed Amphotericin B for an initial 72 hours only. *The lipid formulation dispensed will be decided based on discussions between Infectious Diseases and Pharmacist.*
- Each case will need to be reassessed, and the drug ordered, by an ID physician twice weekly.
- Within one week of the initial order, an ad hoc Utilization Review group will review each case of lipid-complexed amphotericin B use. Membership on this group will consist of the following individuals or their designate: prescribing ID physician, Director of ID, Chair of the Antimicrobial Advisory Subcommittee, an Antimicrobial Utilization pharmacist, and a representative from the specific program involved.

CLINICAL ANTIBIOTIC GUIDELINES†

AZITHROMYCIN IV/PO

Predictable activity:	**Unpredictable activity:**	**No activity:**
Streptococcus pneumoniae	Staphylococcus aureus (MSSA)	Staphylococcus aureus (MRSA)
β-haemolytic Streptococci	Neisseria gonorrhoeae	Enterococcus spp
Moraxella catarrhalis	Helicobacter pylori	Enterobacteriaceae
Bordetella pertussis	Haemophilus influenzae*	Pseudomonas spp
Legionella spp		Anaerobic gram-negative bacilli
Mycobacterium avium complex		
Chlamydia trachomatis		
Chlamydia pneumoniae		
Mycoplasma pneumoniae		

* Better coverage than erythromycin, however not recommended for serious documented Haemophilus infections

Indicated:

1. Therapy of community acquired pneumonia where bacteremia is not suspected
2. Second line therapy of otitis media, acute exacerbation of chronic bronchitis, and acute sinusitis
3. Therapy of nongonococcal urethritis/cervicitis or documented Chlamydia trachomatis infections *(single 1 gram PO dose)*
4. First line agent for prophylaxis of infections due to Mycobacterium avium complex in HIV patients

Not Indicated:

1. First line therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
2. Monotherapy of community acquired pneumonia associated with bacteremia or where central nervous system involvement suspected
3. Therapy of hospital acquired pneumonia
4. Therapy of skin and soft tissue infections
5. Therapy of Helicobacter pylori

CLINICAL ANTIBIOTIC GUIDELINES[†]

CEFACLOR

Predictable activity:	**Unpredictable activity:**	**No activity:**
Pen-S Streptococcus pneumoniae	Staphylococcus aureus (MSSA)	Methicillin-resistant S. aureus (MRSA)
Escherichia coli		Pen-I, Pen-R Streptococcus pneumoniae
Klebsiella spp		Enterococcus spp
Proteus mirabilis		Enterobacteriaceae producing inducible β-lactamases**
Haemophilus influenzae*		Pseudomonas spp
Moraxella catarrhalis		Anaerobic gram-negative bacilli
		Chlamydia spp
		Mycoplasma spp

* Cefaclor is less stable against β-lactamase producing H. influenzae than cefuroxime axetil, cefixime, or amoxicillin-clavulanate.
** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp

Not Indicated:

1. Therapy of community acquired pneumonia
2. Therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
3. Therapy of skin and soft tissue infections
4. Therapy of urinary tract infections

CLINICAL ANTIBIOTIC GUIDELINES[†]

CEFAZOLIN

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae	Viridans group Streptococci	Pen-R Streptococcus pneumoniae
β-haemolytic Streptococci		Enterococcus spp
Escherichia coli		Listeria spp
Klebsiella spp		Haemophilus spp
Proteus mirabilis		Enterobacteriaceae producing inducible β-lactamases*
Moraxella spp		Pseudomonas spp
		Anaerobic gram-negative bacilli
		Pasteurella spp
		Eikenella spp
		Chlamydia spp
		Mycoplasma spp

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Surgical prophylaxis
2. Therapy of skin & soft tissue and bone & joint infections where Staphylococcus and Streptococcus are predominant pathogens
3. Therapy of post-operative wounds not involving GI/GU tract NB: For wounds involving GI/GU tract, add metronidazole
4. Alternative agent to cloxacillin for gram positive non-central nervous system infections
5. Therapy of line-related sepsis +/- gentamicin

Not Indicated:

1. Therapy of respiratory tract infections
2. Therapy of animal and human bite wound infections
3. Empiric therapy of skin and soft tissue infections in patients < 5 years
4. Therapy of complicated intraabdominal infections, regardless of concomitant anaerobic coverage

CLINICAL ANTIBIOTIC GUIDELINES[†]

CEFIXIME

Predictable activity:
Pen-S Streptococcus pneumoniae
β-haemolytic Streptococci
Escherichia coli
Klebsiella spp
Proteus mirabilis
Haemophilus influenzae
Moraxella catarrhalis
Neisseria gonorrhoeae
Pasteurella spp

No activity:
Staphylococcus aureus (MSSA, MRSA)
Pen-I, Pen-R S. pneumoniae
Enterococcus spp
Enterobacteriaceae producing inducible β-lactamases*
Pseudomonas spp
Stenotrophomonas maltophilia
Anaerobic gram-negative bacilli
Chlamydia spp
Mycoplasma spp

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:
1. Therapy of uncomplicated urethral, cervical, rectal, and pharyngeal gonorrhea *(single 400mg dose)*
2. Therapy of infections due to documented Haemophilus influenzae
3. Second line therapy of urinary tract infections in paediatric patients
4. Second line therapy of gastroenteritis due to Shigella in paediatric patients

Not Indicated:
1. Therapy of pneumonia
2. Therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
3. Therapy of skin and soft tissue infections *(NO staphylococcal coverage)*
4. First line therapy of uncomplicated urinary tract infections
5. Therapy of urinary tract infections where Enterococcus is a potential pathogen such as in elderly or catheterized patients
   NB: Chronic/asymptomatic bacteriuria in elderly or catheterized patients should NOT be treated

CLINICAL ANTIBIOTIC GUIDELINES†

CEFPROZIL *NON-FORMULARY - REQUIRES COMPLETION OF ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Staphylococcus aureus (MRSA)
Pen-S Streptococcus pneumoniae		Pen-R S. pneumoniae
β-haemolytic Streptococci		Enterococcus spp
Escherichia coli		Enterobacteriaceae producing inducible β-lactamases*
Klebsiella spp		Pseudomonas spp
Proteus mirabilis		Anaerobic gram-negative bacilli
Haemophilus influenzae**		Chlamydia spp
Moraxella spp		Mycoplasma spp
Pasteurella spp		

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*
***Haemophilus coverage not as good as cefuroxime.*

Indicated:

1. Second line therapy of otitis media
2. Second line therapy of urinary tract infections in paediatric patients

Not Indicated:

1. Therapy of pneumonia
2. Therapy of upper respiratory tract infections (otitis media, pharyngitis, tonsillitis, acute exacerbation of chronic bronchitis, acute sinusitis)
3. Therapy of skin and soft tissue infections
4. First line therapy of urinary tract infections
5. Therapy of documented Haemophilus infection (single pathogen)

CLINICAL ANTIBIOTIC GUIDELINES†

CEFTAZIDIME *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity**
Pen-S Streptococcus pneumoniae	Viridans group Streptococci	Staphylococcus aureus (MSSA, MRSA)
β-haemolytic Streptococci	Leuconostoc spp	Coagulase negative Staphylococci
Escherichia coli	Pediococcus spp	Pen-I, Pen-R S. pneumoniae
Klebsiella spp	Enterobacteriaceae producing:	Enterococcus spp
Proteus mirabilis	- inducible β-lactamases*	Listeria spp
Pseudomonas spp	- extended spectrum β-lactamases	Stenotrophomonas maltophilia
Acinetobacter spp		Anaerobic gram-negative bacilli
Alcaligenes spp		Chlamydia spp
		Mycoplasma spp

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Alternative to piperacillin for suspected or documented infections with Pseudomonas aeruginosa in combination with an aminoglycoside
2. Empiric therapy in febrile neutropenic patients (absolute neutrophil count < 0.5×10^9/L) +/- aminoglycoside
3. Alternative to TMP/SMX or quinolones for serious infections with selected non-fermentative gram negative bacilli
4. Empiric therapy of meningitis post-neurosurgical procedures or post-cranial/spinal trauma in combination with vancomycin

Not Indicated:

1. Therapy of community-acquired infections (including respiratory, genitourinary, skin/soft tissue infections)
2. Monotherapy of documented nonurinary Pseudomonas aeruginosa infections
3. Monotherapy of nonurinary infections due to Enterobacteriaceae producing inducible β-lactamases or extended spectrum β-lactamases

CLINICAL ANTIBIOTIC GUIDELINES[†]

CEFOTAXIME & CEFTRIAXONE *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Pen-S, Pen-I Streptococcus pneumoniae	Staphylococcus aureus (MSSA)	Staphylococcus aureus (MRSA)
β-haemolytic Streptococci	Pen-R Streptococcus pneumoniae	Coagulase negative Staphylococci
Viridans group Streptococci*	Leuconostoc spp	Enterococcus spp
Escherichia coli	Pediococcus spp	Listeria spp
Klebsiella spp	Enterobacteriaceae producing:	Pseudomonas spp
Proteus mirabilis	- inducible β-lactamases**	Stenotrophomonas maltophilia
Haemophilus influenzae	- extended spectrum β-lactamases	Acinetobacter spp
Moraxella spp	Nocardia spp	Alcaligenes spp
Neisseria spp	Actinomyces spp	Chryseobacterium (Flavobacterium) spp
		Anaerobic gram-negative bacilli

** Some resistance reported.*
***Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Empiric therapy of bacterial meningitis (add ampicillin in neonates, elderly, immunosuppressed)
2. Empiric therapy of sepsis in neonates 1-3 months of age in combination with ampicillin
3. Alternative to amoxicillin for febrile paediatric patients 3-36 months with no focus of infection and who look well (**ONLY after blood and CSF cultures taken)**
4. Empiric therapy of nosocomial gram-negative infections (except Pseudomonas) +/- aminoglycoside
5. Empiric therapy of severe (ICU) pneumonia from community or nursing homes in combination with erythromycin
6. Alternative to ampicillin + gentamicin for therapy of pyelonephritis in pregnancy
7. Empiric therapy of spontaneous bacterial peritonitis in patients with hepatic cirrhosis (cefotaxime only)
8. Alternative to ciprofloxacin or cefixime for therapy of Neisseria gonorrhoeae
9. Alternative to penicillin G for neurosyphilis in patients with severe/anaphylactic penicillin allergy

Not Indicated:

1. Therapy of community acquired infections (including respiratory, genitourinary and skin and soft tissue infections)
2. Monotherapy of nonurinary infections due to Enterobacteriaceae with inducible β-lactamases or extended spectrum β-lactamases
3. Therapy of skin and soft tissue infections

CLINICAL ANTIBIOTIC GUIDELINES[†]

CEFUROXIME AXETIL

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae		Pen-R Streptococcus pneumoniae
β-haemolytic Streptococci		Enterococcus spp
Escherichia coli		Enterobacteriaceae producing inducible β-lactamases*
Klebsiella spp		Pseudomonas spp
Proteus mirabilis		Anaerobic gram-negative bacilli
Haemophilus influenzae		Chlamydia spp
Moraxella catarrhalis		Mycoplasma spp
Pasteurella spp		

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Therapy of community/nursing home acquired pneumonia in patients ≥ 65 years old and/or with comorbid factors* in combination with erythromycin
2. Second line therapy of otitis media, acute exacerbation of chronic bronchitis, and acute sinusitis
3. Therapy of periorbital cellulitis in paediatric patients

Not Indicated:

1. Monotherapy of community acquired pneumonia
2. First line therapy of otitis media, acute exacerbations of chronic bronchitis, and acute sinusitis
3. Therapy of pharyngitis or tonsillitis
4. Therapy of skin and soft tissue infections in patients > 5 years
5. First line therapy of uncomplicated urinary tract infections
6. Therapy of urinary tract infections where enterococcus is a potential pathogen such as in elderly or catheterized patients
   NB: Chronic/asymptomatic bacteriuria in elderly or catheterized patients should NOT be treated

* Comorbid factors: asthma, lung cancer, COPD, diabetes, alcoholism, chronic renal or liver failure, CHF, chronic corticosteroid use, malnutrition, hospitalization in past 3 months.

CLINICAL ANTIBIOTIC GUIDELINES†

CEFUROXIME IV

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae		Pen-R Streptococcus pneumoniae
β-haemolytic Streptococci		Enterococcus spp
Escherichia coli		Enterobacteriaceae producing
Klebsiella spp		inducible β-lactamases*
Proteus mirabilis		Pseudomonas spp
Haemophilus influenzae		Anaerobic gram-negative bacilli
Moraxella catarrhalis		Chlamydia spp
Pasteurella spp		Mycoplasma spp

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Therapy of community/nursing home acquired pneumonia in patients ≥ 65 years old and/or with comorbid factors* in combination with erythromycin
2. Therapy of hospital acquired pneumonia +/- gentamicin
3. Therapy of aspiration pneumonia in combination with metronidazole
4. Therapy of acute bacterial epiglottitis and tracheitis
5. Therapy of empyema and pneumonia in paediatric patients > 1 month. ***For the treatment of pneumonia, add erythromycin in paediatric patients > 5 years.***
6. Therapy of facial cellulitis in paediatric patients < 5 years
7. Therapy of periorbital cellulitis in paediatric patients
8. Therapy of septic arthritis in paediatric patients

Not Indicated:

1. Therapy of meningitis
2. Monotherapy of community acquired pneumonia in patients > 5 years
3. Therapy of skin and soft tissue infections in patients > 5 years

* Comorbid factors: asthma, lung cancer, COPD, diabetes, alcoholism, chronic renal or liver failure, CHF, chronic corticosteroid use, malnutrition, hospitalization in past 3 months.

CLINICAL ANTIBIOTIC GUIDELINES†

CEPHALEXIN

NB: Cephalothin (not cefazolin) susceptibility correlates with cephalexin susceptibility.

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Viridans group Streptococci	Methicillin-resistant S. aureus (MRSA)
β-haemolytic Streptococci	Escherichia coli	Pen-I, Pen-R Streptococcus pneumoniae
Proteus mirabilis	Klebsiella spp	Enterococcus spp
	Moraxella spp	Haemophilus spp
		Enterobacteriaceae producing inducible β-lactamases*
		Eikenella spp
		Pseudomonas spp
		Anaerobic gram-negative bacilli
		Pasteurella spp
		Chlamydia spp
		Mycoplasma spp

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Therapy of mild skin and soft tissue infections where Staphylococcus and Streptococcus are predominant pathogens
2. Therapy of mild postpartum wound infections/postpartum breast abscess/mastitis
3. Therapy of mild post-operative surgical wound infections NB: For wounds involving GI/GU tract, consider adding metronidazole
4. Therapy of urinary tract infections in paediatric and pregnant patients
5. Therapy of mild to moderate bursitis
6. Therapy of mild acute cervical adenitis in paediatric patients

Not Indicated:

1. Therapy of animal and human bite wound infections
2. Monotherapy of polymicrobial skin and soft tissue infections (e.g. diabetic foot infections)
3. Therapy of periorbital/facial skin and soft tissue infections in patients < 5 years old
4. Therapy of respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis, pneumonia)
5. Empiric therapy of urinary tract infections in non-pregnant adults
6. Therapy of urinary tract infections where Enterococcus is a potential pathogen such as in elderly or catheterized patients

CLINICAL ANTIBIOTIC GUIDELINES[†]

CIPROFLOXACIN IV *RESTRICTED TO ANTIBIOTIC FORM*

NB: Ciprofloxacin should be used orally in patients able to tolerate oral medications or enteral feeds as the oral absorption is excellent (achieves same drug serum levels as IV within 2 hours of administration).

Predictable activity:	**Unpredictable activity:**	**No activity:**
Enterobacteriaceae (excluding Serratia spp)	Staphylococcus aureus (MSSA, MRSA)**	Enterococcus spp***
Pseudomonas aeruginosa*	Coagulase negative Staphylococci	Stenotrophomonas maltophilia
Haemophilus influenzae	Streptococcus pneumoniae	Burkholderia cepacia
Moraxella catarrhalis	β-haemolytic Streptococci	Anaerobes
Neisseria gonorrhoeae	Viridans group Streptococci	Chlamydia spp
Neisseria meningitidis	Serratia spp	Mycoplasma spp
Pasteurella multocida	Acinetobacter spp	Actinomyces spp
Legionella spp	Alcaligenes spp	Nocardia spp

* *Ciprofloxacin has best antipseudomonal coverage of all quinolones.*
** *Despite in vitro susceptibility, resistance may develop. Monotherapy not recommended.*
*** *Some urinary isolates may be susceptible to ciprofloxacin however increased resistance noted locally.*

Indicated:

1. Therapy of hospital acquired gram negative infections
2. Therapy of polymicrobial infections in combination with clindamycin or metronidazole
3. Therapy of complicated urinary tract infections where oral route not possible
4. Empiric therapy in febrile neutropenic patients (absolute neutrophil count < 0.5 x 10^9/L) with severe penicillin or cephalosporin allergy

Not Indicated:

1. **Patients able to tolerate drug orally**
2. Therapy of community acquired pneumonia
3. Monotherapy of infections due to suspected or documented gram-positive or anaerobic organisms
4. Monotherapy of documented Pseudomonas aeruginosa infections of respiratory or intraabdominal source
5. Monotherapy of polymicrobial infections (odontogenic, skin and soft tissue infections, intraabdominal)

CLINICAL ANTIBIOTIC GUIDELINES[†]

CIPROFLOXACIN PO

NB: Ciprofloxacin should be used orally if patient is able to tolerate oral medications or enteral feeds as the oral absorption is excellent.

Predictable activity:	**Unpredictable activity:**	**No activity:**
Enterobacteriaceae (excluding Serratia spp)	Staphylococcus aureus (MSSA, MRSA)**	Enterococcus spp***
Pseudomonas aeruginosa*	Coagulase negative Staphylococci	Stenotrophomonas maltophilia
Haemophilus influenzae	Streptococcus pneumoniae	Burkholderia cepacia
Moraxella catarrhalis	β-haemolytic Streptococci	Anaerobes
Neisseria gonorrhoeae	Viridans group Streptococci	Chlamydia spp
Neisseria meningitidis	Serratia spp	Mycoplasma spp
Pasteurella multocida	Acinetobacter spp	Actinomyces spp
Legionella spp	Alcaligenes spp	Nocardia spp

* *Ciprofloxacin has best antipseudomonal coverage of all quinolones.*
** *Despite in vitro susceptibility, resistance may develop. Monotherapy not recommended.*
*** *Some urinary isolates may be susceptible to ciprofloxacin however increased resistance noted locally.*

Indicated:

1. Therapy of community/hospital acquired gram negative infections
2. Therapy/stepdown therapy of polymicrobial infections in combination with clindamycin or metronidazole
3. Therapy of genitourinary tract infections
4. Prophylaxis of transurethral surgical procedures
5. Therapy of suspected bacterial gastroenteritis *(Most cases of diarrhea are self-limiting and do not require antimicrobial therapy*)
6. Prophylaxis of adult contacts of cases of invasive meningococcal disease
7. Prophylaxis in patients at risk of gram negative infections (cirrhosis, neutropenia) NB: Ciprofloxacin prophylaxis may predispose to gram positive infections.

Not Indicated:

1. Therapy of community acquired pneumonia
2. Therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
3. Therapy of uncomplicated cellulitis
4. Monotherapy of polymicrobial infections (odontogenic, skin and soft tissue, intraabdominal)
5. Monotherapy of infections due to suspected or documented gram positive or anaerobic organisms
6. Monotherapy of documented Pseudomonas aeruginosa infections of respiratory or intraabdominal source
7. Surgical prophylaxis of non-urological procedures

CLINICAL ANTIBIOTIC GUIDELINES[†]

CLARITHROMYCIN

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA) Streptococcus pneumoniae β-haemolytic Streptococci Moraxella catarrhalis Bordetella pertussis Helicobacter pylori Legionella spp Mycobacterium avium complex Mycoplasma pneumoniae Chlamydia trachomatis Chlamydia pneumoniae	Haemophilus influenzae*	Staphylococcus aureus (MRSA) Enterococcus spp Enterobacteriaceae Pseudomonas spp Anaerobic gram-negative bacilli

** Better coverage than erythromycin, however not recommended for serious documented Haemophilus infections*

Indicated:

1. Therapy of community acquired pneumonia
2. Second line therapy of otitis media, acute exacerbation of chronic bronchitis, and acute sinusitis
3. Therapy of documented Helicobacter pylori in patients with duodenal or gastric ulcers in combination with amoxicillin or metronidazole plus an acid suppression agent
4. Therapy of selected Mycobacterium infections usually in combination with other agents

Not Indicated:

1. First line therapy of upper respiratory tract infections (otitis media, pharyngitis, acute exacerbation of chronic bronchitis, acute sinusitis)
2. Therapy of hospital acquired pneumonia
3. Therapy of skin and soft tissue infections

CLINICAL ANTIBIOTIC GUIDELINES[†]

CLINDAMYCIN IV

NB: Clindamycin should be used IV only if patient is NPO as the oral absorption is excellent.

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Peptostreptococcus spp	Methicillin-resistant S. aureus (MRSA)
Streptococcus pneumoniae	Clostridium spp	Enterococcus spp
β-haemolytic Streptococci	Anaerobic gram-negative bacilli	Enterobacteriaceae
Viridans group Streptococci		Pseudomonas spp
Corynebacterium spp (other than C. jeikium)		Haemophilus spp
Bacillus spp		Moraxella spp
Gardnerella vaginalis		Pasteurella spp
Capnocytophaga spp		Eikenella spp
Propionibacterium spp		
Actinomyces spp		
Nocardia spp		
Chlamydia trachomatis		

Indicated:

1. Alternative to cloxacillin or cefazolin in β-lactam allergic patients for the treatment/prophylaxis of gram positive organisms
2. Alternative to metronidazole for the treatment of anaerobic infections
3. Therapy of polymicrobial infections in combination with an agent effective against aerobic gram negative organisms (skin and soft tissue, hospital acquired aspiration pneumonia, intraabdominal, pelvic)
4. Therapy of odontogenic infections in β-lactam allergic patients
5. Therapy of lung abscess or empyema
6. Therapy of Group A Streptococcal fasciitis/myositis and C. perfringens gas gangrene in combination with penicillin
7. Alternative to amoxicillin for bacterial endocarditis prophylaxis

Not Indicated:

1. Therapy of central nervous system (CNS) infections except CNS toxoplasmosis
2. First line therapy of aspiration pneumonia
3. Therapy of otitis media, acute exacerbation of chronic bronchitis, and acute sinusitis
4. Monotherapy of polymicrobial infections

CLINICAL ANTIBIOTIC GUIDELINES[†]

CLINDAMYCIN PO

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Peptostreptococcus spp	Methicillin-resistant S. aureus (MRSA)
Streptococcus pneumoniae	Clostridium spp	Enterococcus spp
β-haemolytic Streptococci	Anaerobic gram-negative bacilli	Enterobacteriaceae
Viridans group Streptococci		Pseudomonas spp
Corynebacterium spp (other than C. jeikium)		Haemophilus spp
Bacillus spp		Moraxella spp
Gardnerella vaginalis		Pasteurella spp
Capnocytophaga spp		Eikenella spp
Propionibacterium spp		
Actinomyces spp		
Nocardia spp		
Chlamydia trachomatis		

Indicated:

1. Alternative to cloxacillin or cefazolin in β-lactam allergic patients for the treatment/prophylaxis of gram positive organisms
2. Alternative to metronidazole for the treatment of anaerobic infections
3. Therapy of polymicrobial infections in combination with an agent effective against aerobic gram negative organisms
4. Therapy of odontogenic infections in β-lactam allergic patients
5. Therapy of recurrent/unresponsive streptococcal pharyngitis
6. Alternative to metronidazole for bacterial vaginosis
7. Alternative to amoxicillin for bacterial endocarditis prophylaxis

Not Indicated:

1. First line therapy of aspiration pneumonia
2. Therapy of acute exacerbation of otitis media, chronic bronchitis, and acute sinusitis
3. Monotherapy of polymicrobial infections
4. In combination with antibiotics having an overlapping spectrum of activity (e.g. penicillin, cloxacillin, cefazolin, cephalexin, cefoxitin, metronidazole)

CLINICAL ANTIBIOTIC GUIDELINES[†]

FLUCONAZOLE
IV/PO

RESTRICTED TO ANTIBIOTIC FORM

NB: This agent is well absorbed. Should be given orally in majority of cases.

Predictable activity:	**Unpredictable activity:**	**No activity:**
Candida albicans	Candida glabrata	Candida krusei
Candida tropicalis	Blastomycosis	Aspergillus spp
Candida parapsilosis	Histoplasma spp	Rhizopus spp
Candida pseudotropicalis	Coccidioides	Pseudallescheria spp
Candida lusitaniae (resistant to Ampho B)	Sporotrichosis	
Candida guillermondi (resistant to Ampho B)		
Cryptococcus neoformans		
Trichophyton spp		

Indicated:

IV:

1. Therapy of systemic candidiasis. See Empiric Therapy Recommendations.
2. Initial therapy for meningitis due to Coccidioidomycosis
3. Stepdown from Amphotericin B for cryptococcal meningitis
4. Therapy for severe mucocutaneous Candida infections where patient unable to take drugs orally

Oral:

1. Therapy of mucocutaneous/vaginal candidiasis
2. Therapy, prophylaxis and suppressive therapy for mucocutaneous candidal infections in immunocomprised patients
3. Stepdown therapy for systemic infections due to Candida
4. Therapy of urinary tract infections due to Candida
5. Therapy of Coccidioidomycosis
6. Stepdown therapy from Amphotericin B for severe cryptococcal infections
7. Suppressive therapy for cryptococcal infections in immunocompromised patients
8. Therapy of Candida esophagitis
9. Alternative therapy of selected dermatophytoses

Not Indicated:

1. First line therapy for mild to moderate candidal mucositis

CLINICAL ANTIBIOTIC GUIDELINES[†]

FOSCARNET *RESTRICTED TO ANTIBIOTIC FORM*

Indicated:

1. Alternative to ganciclovir for therapy and maintenance of invasive CMV disease in immunocompromised patients
2. Therapy of acyclovir/ganciclovir resistant Herpes simplex and varicella-zoster infections in immunocompromised hosts
3. As combination therapy with ganciclovir for recurrent CMV retinitis in immunocompromised patients

GANCICLOVIR *RESTRICTED TO ANTIBIOTIC FORM*

Indicated:

1. Therapy of documented acute CMV infections (e.g. pneumonia, hepatitis, enteritis, retinitis) in immunocompromised patients
2. Therapy and maintenance of suspected CMV radiculopathy in immunocompromised patients
3. Prophylaxis for CMV infections in lung, heart/lung, and allogeneic bone marrow transplants if recipient seropositive or donor seropositive and recipient seronegative
4. Therapy for Epstein-Barr Virus Lymphoproliferative Syndrome in immunocompromised host
5. Therapy and maintenance of clinically suspected Rasmussen's encephalitis
6. Prophylaxis (pre-emptive therapy) in renal transplant patients (except CMV donor-negative/recipient-negative) when OKT3 or ALG is used

Not Indicated:

1. In documented acyclovir-resistant Herpes simplex or varicella-zoster infections
2. Routine prophylaxis of CMV infections in transplants other than lung, heart/lung, or bone marrow

CLINICAL ANTIBIOTIC GUIDELINES[†]

IMIPENEM *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-R Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S, Pen-I Streptococcus pneumoniae	Burkholderia cepacia	Coagulase negative Staphylococci
β-haemolytic Streptococci		Enterococcus faecium (most)
Viridans group Streptococci		Stenotrophomonas maltophilia
Enterococcus faecalis		Chryseobacterium (Flavobacterium) meningosepticum
Bacillus spp		Chlamydia spp
Enterobacteriaceae		Mycoplasma spp
Pseudomonas spp		
Haemophilus influenzae		
Moraxella spp		
Neisseria spp		
Acinetobacter spp		
Alcaligenes spp		
Anaerobes		

Indicated:

1. Second line therapy of intraabdominal sepsis where there is documented failure of first line therapy (e.g. ampicillin + gentamicin + metronidazole)
2. Second line therapy of severe polymicrobial skin and soft tissue infections (e.g. limb threatening diabetic foot)
3. Empiric therapy of mixed synergistic necrotizing gangrene (Fournier's gangrene)
4. Empiric therapy of severe nosocomial polymicrobial infections
5. Therapy of severe ventilator-associated pneumonia where Pseudomonas and S. aureus coverage is needed
6. Second line therapy of nosocomial infections due to gram-negative organisms producing inducible β-lactamases (Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp) or extended spectrum β-lactamases where there is resistance to first line agents (TMP/SMX, ciprofloxacin, and aminoglycosides)

Not Indicated:

1. Therapy of community acquired infections (including respiratory, genitourinary, and skin/soft tissue infections)
2. First line therapy of nosocomial respiratory tract infections
3. Monotherapy of documented Pseudomonas aeruginosa infections
4. First line therapy of intraabdominal sepsis

CLINICAL ANTIBIOTIC GUIDELINES†

LEVOFLOXACIN IV *RESTRICTED TO ANTIBIOTIC FORM*

NB: Levofloxacin should be used orally in patients able to tolerate oral medications or enteral feeds as the oral absorption is excellent (99% bioavailability).

Predictable activity:	**Unpredictable activity:**	**No activity:**
Streptococcus pneumoniae	Staphylococcus aureus, methicillin-susceptible*	Staphylococcus aureus, methicillin-resistant
Enterobacteriaceae	Coagulase negative Staphylococci	Enterococcus spp
Haemophilus influenzae	β-haemolytic Streptococci	Pseudomonas aeruginosa
Moraxella catarrhalis	Viridans group Streptococci	Stenotrophomonas maltophilia
Neisseria gonorrhoeae		Burkholderia cepacia
Chlamydia spp		Anaerobes
Mycoplasma spp		Actinomyces spp
Legionella spp		Nocardia spp

Indicated:

1. Empiric therapy of community acquired pneumonia in hospitalized patients **unable to tolerate oral intake**
2. Empiric therapy of nursing home acquired pneumonia **only in patients unable to tolerate oral intake**
3. Empiric therapy of severe (increased sputum volume and purulence, and increased dyspnea) acute exacerbations of chronic bronchitis in patients who have failed first/second line therapy and are **unable to tolerate oral intake**

Not Indicated:

1. **Patients able to tolerate drug orally**
2. Therapy of skin and soft tissue infections, including bite wound infections
3. Empiric therapy of complicated urinary tract infections and pyelonephritis. *Ciprofloxacin is the most appropriate quinolone.*
4. Monotherapy of infections due to suspected or documented anaerobic organisms
5. * Monotherapy of S. aureus infections. *Resistance of S. aureus may develop rapidly.*

CLINICAL ANTIBIOTIC GUIDELINES[†]

LEVOFLOXACIN PO

NB: Levofloxacin should be used orally in patients able to tolerate oral medications or enteral feeds as the oral absorption is excellent (99% bioavailability).

Predictable activity:	**Unpredictable activity:**	**No activity:**
Streptococcus pneumoniae	Staphylococcus aureus, methicillin-susceptible*	Staphylococcus aureus, methicillin-resistant
Enterobacteriaceae	Coagulase negative Staphylococci	Enterococcus spp
Haemophilus influenzae	β-haemolytic Streptococci	Pseudomonas aeruginosa
Moraxella catarrhalis	Viridans group Streptococci	Stenotrophomonas maltophilia
Neisseria gonorrhoeae		Burkholderia cepacia
Chlamydia spp		Anaerobes
Mycoplasma spp		Actinomyces spp
Legionella spp		Nocardia spp

Indicated:

1. Empiric therapy of community acquired pneumonia in hospitalized patients
2. Empiric therapy of community acquired pneumonia in patients > 60 years old with comorbid factors**
3. Second line therapy of community acquired pneumonia in young otherwise healthy patients who have failed first line agents (macrolides, tetracyclines) or are intolerant/allergic to these agents
4. Empiric therapy of nursing home acquired pneumonia
5. Empiric therapy of severe (increased sputum volume and purulence, and increased dyspnea) acute exacerbations of chronic bronchitis in patients who have failed first/second line therapy

Not Indicated:

1. Therapy of upper respiratory tract infections (otitis media, pharyngitis)
2. First line therapy of acute sinusitis
3. First line empiric therapy of community acquired pneumonia in young otherwise healthy outpatients
4. Therapy of odontogenic infections
5. Therapy of skin and soft tissue infections, including bite wound infections
6. Empiric therapy of complicated urinary tract infections and pyelonephritis. *Ciprofloxacin is the most appropriate quinolone.*
7. * Monotherapy of S. aureus infections. *Resistance of S. aureus may develop rapidly*

** Comorbid factors: asthma, lung cancer, COPD, diabetes, alcoholism, chronic renal or liver failure, CHF, chronic corticosteroid use, malnutrition, hospitalization in past 3 months.

CLINICAL ANTIBIOTIC GUIDELINES[†]

MEROPENEM *NON-FORMULARY - REQUIRES COMPLETION OF ANTIBIOTIC FORM*

IN CAPITAL HEALTH REGION HOSPITALS, MUST MEET INDICATIONS BELOW OR IMIPENEM WILL BE SUBSTITUTED

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphyloccus aureus (MSSA)	Pen-R Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S, Pen-I S. pneumoniae	Enterococcus faecalis	Coagulase negative Staphylococci
β-haemolytic Streptococci		Enterococcus faecium
Viridans group Streptococci		Stenotrophomonas maltophilia
Listeria spp		Chryseobacterium (Flavobacterium) spp
Bacillus spp		Chlamydia spp
Enterobacteriaceae		Mycoplasma spp
Pseudomonas spp		
Haemophilus influenzae		
Moraxella spp		
Neisseria spp		
Acinetobacter spp		
Alcaligenes spp		
Burkholderia cepacia		
Anaerobes		

Indicated:

1. Alternative to imipenem for severe nosocomial polymicrobial infections involving gram-negative organisms resistant to first line agents in patients with documented seizure disorder/CNS abnormality
2. Therapy of severe nosocomial polymicrobial infections involving gram-negative organisms resistant to first line agents and to imipenem but susceptible to meropenem
3. Therapy of meningitis due to gram-negative organisms producing inducible β-lactamases (Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp)
4. Alternative to ceftazidime for central nervous system (CNS) infections due to Pseudomonas aeruginosa

Not Indicated:

1. Therapy of community-acquired infections (including respiratory, genitourinary, and skin/soft tissue infections)
2. First line therapy of nosocomial infections
3. Monotherapy of documented Pseudomonas aeruginosa infections
4. Empiric therapy of meningitis

CLINICAL ANTIBIOTIC GUIDELINES†

MOXIFLOXACIN *NON-FORMULARY - REQUIRES COMPLETION OF ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Streptococcus pneumoniae	Staphylococcus aureus, methicillin-susceptible*	Staphylococcus aureus, methicillin-resistant
Enterobacteriaceae	Coagulase negative Staphylococci	Enterococcus spp**
Haemophilus influenzae	β-haemolytic Streptococci	Pseudomonas aeruginosa
Moraxella catarrhalis	Viridans group Streptococci	Stenotrophomonas maltophilia
Neisseria gonorrhoeae	Anaerobes	Burkholderia cepacia
Chlamydia spp		Legionella spp
Mycoplasma spp		Actinomyces spp
		Nocardia spp

** *High local quinolone resistance.*

Indicated:

1. Empiric therapy of community acquired pneumonia in patients > 60 years old with comorbid factors***
2. Second line therapy of community acquired pneumonia in young otherwise healthy patients who have failed first line agents (macrolides, tetracyclines) or are intolerant/allergic to these agents
3. Empiric therapy of nursing home acquired pneumonia
4. Empiric therapy of severe (increased sputum volume and purulence, and increased dyspnea) acute exacerbations of chronic bronchitis in patients who have failed first/second line therapy
5. Second line therapy of acute bacterial sinusitis in â-lactam allergic patients who have failed first line therapy

Not Indicated:

1. Therapy of upper respiratory tract infections (otitis media, pharyngitis)
2. First line therapy of acute sinusitis
3. First line empiric therapy of community acquired pneumonia in young otherwise healthy outpatients
4. Therapy of odontogenic infections
5. Therapy of skin and soft tissue infections, including bite wound infections
6. Therapy of complicated urinary tract infections and pyelonephritis. *Ciprofloxacin is the most appropriate quinolone.*
7. * Monotherapy of S. aureus infections. *Resistance of S. aureus may develop rapidly.*

*** Comorbid factors: asthma, lung cancer, COPD, diabetes, alcoholism, chronic renal or liver failure, CHF, chronic corticosteroid use, malnutrition, hospitalization in past 3 months

CLINICAL ANTIBIOTIC GUIDELINES[†]

NEURAMINIDASE INHIBITORS

OSELTAMIVIR - FORMULARY

ZANAMIVIR – NON-FORMULARY; REQUIRES COMPLETION OF ANTIBIOTIC FORM

The neuraminidase inhibitors will not be made available at any Capital Health institution until influenza has been isolated in the laboratory.
NB: Prevention of influenza infections with current-season influenza vaccine is preferred to treatment with neuraminidase inhibitors (or amantadine), particularly in high risk patients[§]

Predictable activity:	**Unpredictable activity:**	**No activity:**
Influenza A Influenza B		Rhinovirus Coronavirus Respiratory syncytial virus (RSV) Adenovirus Enterovirus Parainfluenza

Indicated:

1. **Once influenza has been documented in the Capital Health region,** as empiric treatment of influenza A or B in febrile[ϕ] patients[β] who have been symptomatic for **no more than TWO days.**
2. Alternative to amantadine for treatment of influenza A in patients unable to tolerate amantadine.

Not Indicated:

1. **As a replacement for the influenza vaccine.**
2. **Therapy for the common cold.**
3. Empiric treatment of influenza-like symptoms when there is no laboratory evidence of circulating influenza in the Capital Health region.
4. In patients who have been symptomatic for **more than TWO days.**

[ϕ] Efficacy in patients who do not present with fever has not been established. [β] Zanamivir is indicated in patients ≥ 12 years of age. Oseltamivir is indicated in adults.
[§] High risk patients include:

- People ≥ 65 years of age
- People with:
  - chronic cardiac or pulmonary disorders (bronchopulmonary dysplasia, cystic fibrosis, asthma)
  - chronic conditions (diabetes mellitus and other metabolic diseases)
  - cancer, immunodeficiency (including patients infected with HIV), immunosuppression
  - renal disease, anemia, hemoglobinopathy
- Residents of nursing homes and other chronic care facilities

- Children & adolescents (6 mos – 18 yrs) with conditions requiring chronic acetylsalicyclic acid (ASA) as this therapy may increase the risk of Reye's syndrome after influenza
- Patients hospitalized in acute care facilities.

CLINICAL ANTIBIOTIC GUIDELINES†

PIPERACILLIN - TAZOBACTAM *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae	Enterobacteriaceae producing inducible β-lactamases*	Coagulase negative Staphylococci
β-haemolytic Streptococci		Pen-R Streptococcus pneumoniae
Viridans group Streptococci		Enterococcus faecium (most)
Enterococcus faecalis		Stenotrophomonas maltophilia
Escherichia coli		Chlamydia spp
Klebsiella spp		Mycoplasma spp
Proteus mirabilis		
Pseudomonas spp		
Haemophilus influenzae		
Moraxella spp		
Neisseria spp		
Acinetobacter spp		
Bordetella spp		
Anaerobes		

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Indicated:

1. Second line therapy of intraabdominal sepsis where there is documented failure of first line therapy (e.g. ampicillin + gentamicin + metronidazole)
2. Second line therapy of severe polymicrobial skin and soft tissue infections (e.g. limb threatening diabetic foot)
3. Empiric therapy of severe nosocomial polymicrobial infections
4. Therapy of severe ventilator-associated pneumonia where Pseudomonas and S. aureus coverage is needed

Not Indicated:

1. Therapy of community acquired infections (including respiratory, genitourinary and skin/soft tissue infections)
2. First line therapy of intraabdominal sepsis
3. Monotherapy of documented Pseudomonas aeruginosa infections
4. Therapy of piperacillin-resistant Pseudomonas aeruginosa
5. Monotherapy of infections due to Enterobacteriaceae producing inducible β-lactamases

CLINICAL ANTIBIOTIC GUIDELINES†

QUINUPRISTIN-DALFOPRISTIN IV *NON-FORMULARY - REQUIRES COMPLETION OF ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA, MRSA)	Haemophilus influenzae	Enterococcus faecalis
Coagulase negative Staphylococci		Enterococcus durans
Streptococcus pneumoniae		Enterococcus casseliflavus
β-haemolytic Streptococci		Enterococcus gallinarum
Viridans group Streptococci		Gram negative enteric bacilli
Enterococcus faecium		Pseudomonas spp
Moraxella catarrhalis		Acinetobacter spp
Neisseria gonorrhoeae		
Neisseria meningitidis		
Anaerobes		

Indicated:

1. Therapy of vancomycin-resistant *Enterococcus faecium* infections
2. Therapy of MRSA/MRSE infections unresponsive to vancomycin

Not Indicated:

1. Therapy of *Enterococcus faecalis* infections
2. Routine therapy of *Enterococcus faecium* infections
3. Routine therapy of staphylococcal infections (including MRSA/MRSE) where alternative therapies exist
4. Therapy of skin and soft tissue infections where alternative therapies exist
5. Decolonization of patients with vancomycin-resistant Enterococcus spp and/or MRSA

CLINICAL ANTIBIOTIC GUIDELINES†

RIBAVIRIN *RESTRICTED TO ANTIBIOTIC FORM*

Within the Capital Health region, ribavirin is NOT recommended even for severe RSV, including those ventilated in PICU, except possibly in the severely immunocompromised (e.g. transplant).

According to the AAP and CPS, ribavirin "may be considered" for proven lower respiratory tract infection due to respiratory syncytial virus (RSV) in certain circumstances:

- mechanically ventilated for RSV infection
- severe disease, such as PaO_2 < 65 mmHg or increasing PaO_2
- underlying conditions such as BPD, CF, chronic pulmonary disease, congenital heart disease with pulmonary hypertension or increased pulmonary blood flow, multiple congenital anomalies, severe neurological or metabolic disease, infants < 6 weeks old, or severe immune deficiency.

Still, the CPS recognizes that "there are insufficient data to justify routine use of ribavirin" in these situations, and with underlying conditions "there is poor evidence to support the use of ribavirin."

CLINICAL ANTIBIOTIC GUIDELINES[†]

TICARCILLIN-CLAVULANIC ACID

RESTRICTED TO ANTIBIOTIC FORM

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA)	Pen-I Streptococcus pneumoniae	Methicillin-resistant S. aureus (MRSA)
Pen-S Streptococcus pneumoniae	Enterobacteriaceae producing inducible β-lactamases*	Pen-R Streptococcus pneumoniae
β-haemolytic Streptococci	Stenotrophomonas maltophilia	Enterococcus faecium (most)
Viridans group Streptococci		
Enterococcus faecalis		
Escherichia coli		
Klebsiella spp		
Proteus mirabilis		
Pseudomonas spp		
Haemophilus influenzae		
Moraxella spp		
Neisseria spp		
Pasteurella spp		
Bordetella spp		
Anaerobes		

** Enterobacter spp, Citrobacter freundii complex, Serratia spp, Morganella spp, Providencia spp, Proteus vulgaris, Proteus penneri, and some Hafnia spp*

Regionally this drug is restricted to the therapy of documented infections due to susceptible Stenotrophomonas maltophilia.

NB: Because of high resistance of S. maltophilia to ticarcillin-clavulanic acid locally (> 70%):

- ensure that organism is true pathogen rather than colonizer
- empiric monotherapy of S. maltophilia with this agent is NOT recommended
- if S. maltophilia is susceptibile, combination therapy is recommended

CLINICAL ANTIBIOTIC GUIDELINES†

VANCOMYCIN IV *RESTRICTED TO ANTIBIOTIC FORM*

Predictable activity:	**Unpredictable activity:**	**No activity:**
Staphylococcus aureus (MSSA, MRSA)	Lactobacillus spp	Gram-negative organisms (aerobic & anaerobic)
Coagulase negative Staphylococci		Leuconostoc spp
Streptococcus pneumoniae		Pediococcus spp
β-haemolytic Streptococci		
Viridans group Streptococci		
Enterococcus spp		
Listeria spp		
Bacillus spp		
Corynebacterium spp		

Indicated:

3. Treatment of serious infections due to β-lactam resistant gram-positive organisms. **Clinicians should be aware that β-lactams are more rapidly bactericidal than vancomycin for β-lactam susceptible gram-positive organisms**.
4. Treatment of infections due to gram-positive microorganisms in patients with serious allergy to β-lactam antimicrobials
5. Empiric therapy for serious infections where S. epidermidis is suspected (i.e. post neurosurgery, VP shunt, prosthetic joint and tunnel-related infections)
6. Prophylaxis, as recommended by the American Heart Association, for endocarditis following certain genitourinary or gastrointestinal (excluding esophageal) procedures in penicillin-allergic patients at moderate or high risk for endocarditis
7. Prophylaxis for selected surgical procedures in penicillin-anaphylactic/cephalosporin-allergic patients. See Antimicrobial Surgical Prophylaxis Recommendations.

Not Indicated:

6. Routine surgical prophylaxis
7. Empiric antimicrobial therapy for febrile neutropenia (unless evidence of central venous line/tunnel-related infection)
8. Treatment in response to a single blood culture positive for coagulase negative Staphylococci
9. Continued empiric use for presumed infections in patients whose cultures are negative for β-lactam resistant gram-positive organisms
10. Systemic or local prophylaxis for infection or colonization of central/intravascular catheters/vascular grafts
11. Eradication of MRSA colonization
12. Routine prophylaxis of very low birth weight infants
13. Routine prophylaxis for patients on CAPD or hemodialysis
14. Treatment chosen for dosing convenience of infections due to β-lactam sensitive gram-positive microorganisms in patients with renal failure
15. Use of vancomycin solution for topical application (except as indicated under vancomycin PO for antibiotic-associated diarrhea) or irrigation

CLINICAL ANTIBIOTIC GUIDELINES†

VANCOMYCIN PO *RESTRICTED TO ANTIBIOTIC FORM*

NB: This drug is not absorbed and must NEVER be used to treat systemic infections.
IN CAPITAL HEALTH REGION HOSPITALS, MUST MEET ONE OR MORE OF THE INDICATIONS BELOW OR METRONIDAZOLE 250MG PO QID WILL BE SUBSTITUTED.

This drug is used solely for the treatment C. difficile enteritis only if there is:
a) documented failure or clinical deterioration on metronidazole therapy
b) laboratory confirmed relapse of C. difficile enteritis with symptoms after 2 courses of metronidazole therapy (see Empiric Therapy Recommendations)
c) documented or impending toxic megacolon
d) intolerance or side effects to metronidazole therapy

Not Indicated:
1. First line therapy of C. difficile enteritis
2. Treatment of systemic infections (includes superficial skin infections)
3. Prophylaxis for gram-positive infections
4. Eradication of MRSA colonization
5. Selective decontamination of digestive tract

†Notes:
1. The organism lists for antibiotic activity are not all inclusive. Empiric therapy should be guided by site-specific antibiograms and empiric therapy recommendations. Tailor antibiotics to susceptibility results or consult microbiology lab.

2. Unpredictable activity denotes that some strains may be susceptible, however empiric therapy with the specified antibiotic is not recommended.

3. Indications for use are not all inclusive. Refer to the Recommended Empiric Therapy sections for specific treatment regimens.