northern health
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2018 Antimicrobial Stewardship Program
Adult Dosing Guidelines

Antibiotic Category	Generic Name	Dose Normal Renal Function	CrCl = 10 to 50 mL/min	CrCl less than 10 mL/min	Hemodialysis	Peritoneal Dialysis
PENICILLINS	Amoxicillin (PO)	250 mg to 1 g PO TID	500 mg PO BID to TID	250 to 500 mg PO daily	250 to 500 mg PO daily; give dose AD on dialysis days	250 mg PO BID
	Amoxicillin/Clavulanate (PO)	500 mg PO TID 875 mg PO BID	10 to 30: 500 mg PO BID	500 mg PO daily	500 mg PO daily; give dose AD on dialysis days	No Data
	Ampicillin	1 to 2 g IV q4 to 6h	**30 to 50:** 1 to 2 g IV q6 to 8h **10 to 30:** 1 to 2 g IV q8 to 12h	1 to 2 g IV q12 to 24h	Dose as per CrCl less than 10 with 1 dose given AD on dialysis days	250 mg IV q12h
	Cloxacillin	IV: 1 to 2 g IV q4 to 6h PO: 0.5 to 1 g QID	No change	No change	No change	No Change
	Penicillin G Sodium	1 to 4 MU IV q4h to q6h (Max: 24 MU/day)	1 to 4 MU IV q6h	1 to 4 MU IV q8h	Dose as per CrCl less than 10 with 1 dose given AD on dialysis days	25 - 50% of normal dose
	Penicillin V Potassium (PO)	300 mg PO QID	300 mg PO TID	300 mg PO BID	Dose as per CrCl less than 10 with 1 dose given AD on dialysis days	Dose as per CrCl less than 10
	Piperacillin/Tazobactam **(Reassess after 72 hours)**	3.375 g IV q6h or 4.5 g IV q6 to 8h	**20 to 40:** 2.25 to 3.375 g IV q6h **less than 20:** 2.25 g IV q6 to 8h	2.25 g IV q8h	2.25 g IV q8 to 12h + extra 0.75 g AD	2.25 g IV q8 to 12h
CARBAPENEMS	Ertapenem **(Restricted to outpatients)** **Consult ID or call pharmacist**	1 g IV q24h	**Less than 30**: 0.5 g IV q24h	0.5 g IV q24h	0.5 g IV q24h; give dose AD on dialysis days	0.5 g IV q24h
	Imipenem/Cilastatin **(Restricted: Consult ID or call pharmacist)**	500 mg IV q6h	500 mg IV q12h	250 mg IV q12h	250 mg IV q12h with 1 dose given AD on dialysis days	250 mg IV q12h
	Meropenem **(Restricted: Consult ID or call pharmacist)**	500 mg IV q6h or 1 g IV q8h 2 g IV q8h (CNS infections)	**25 to 50:** 500 mg IV q8h or 1 g IV q12h **10 to 25:** 500 mg IV q12h	500 mg IV q24h	500 mg IV q24h; give dose AD on dialysis days	500 mg IV q24h
CEPHALOSPORINS 1st	Cefazolin	1 to 2 g IV q8h	1 to 2 g IV q12h	1 to 2 g IV q24h	1 to 2 g IV q24 to 48h + extra 0.5 to 1 g IV AD; or 2 g IV AD 3x/week	500 mg IV q12h
	Cephalexin (PO)	500 mg to 1 g PO QID	500 mg PO BID to TID	250 mg PO BID	250 mg PO BID with 1 dose given AD on dialysis days	500 mg PO BID
2nd	Cefoxitin **(Restricted: OB/GYN or Mycobacterium abscessus infections)**	2 g IV q8h	2 g IV q12h	2 g IV q24h	2 g IV q24 to 48h; give 1 g IV AD on dialysis days	1 g IV q24h
	Cefuroxime axetil (PO)	500 mg PO BID	**10 to 30**: 500 mg PO daily	500 mg PO daily	500 mg PO daily; give dose AD on dialysis days	500 mg PO daily
	Cefuroxime sodium (IV)	0.75 to 1.5 g IV q8h	**Less than 20:** 0.75 to 1.5 g IV q12h	0.75 to 1.5 g IV q24h	Dose as per CrCl less than 10; give dose AD on dialysis days	0.75 to 1.5 g IV q24h
3rd	Cefotaxime	2 g IV q8h **Meningitis**: 2 g IV q6h	2 g IV q8 to 12h	2 g IV q24h	1 to 2 g IV q24h; give dose AD on dialysis days (assuming 3 HD per week)	1 g IV q24h
	Ceftriaxone **(avoid with IV calcium)**	1 to 2 g IV q24h **Meningitis:** 2 g IV q12h	No change	No change	No change	No Change
	Ceftazidime **(Reserved for treating Pseudomonas)**	2 g IV q8h	**30 to 50:** 2 g IV q12h **15 to 30:** 2 g IV q24h	2 g IV q24 to 48h	2 g IV q24 to 48h; give extra 1 g AD on dialysis days	1 g IV load then 500 mg IV q24h
	Cefixime (PO)	400 mg PO daily	No Change	200 mg PO daily (split 400 mg tablet)	260 mg PO daily (use suspension only)	172 mg po daily (use suspension)
FLUOROQUINOLONES	Ciprofloxacin (IV)	400 mg IV q8 to 12h	**Less than 30**: 400 mg IV q24h	400 mg IV q24h	400 mg IV q24h; give AD on dialysis days	400 mg IV q24h
	Ciprofloxacin (PO)	500 to 750 mg PO BID	**30 to 50:** 250 to 500 mg PO BID **Less than 30:** 500 mg PO daily	500 mg PO daily	500 mg PO daily; give AD on dialysis days	500 mg PO daily
	Moxifloxacin (PO/IV)	400 mg PO/IV q24h	No change	No change	No change	No Change
	Levofloxacin (PO/IV)	500 to 750 mg PO/IV q24h	**20 to 49:** 500 mg x 1 PO/IV then 250 mg PO/IV q24h or 750 mg PO/IV q48h	**Less than 20:** 500 mg PO/IV x1 then 250 mg PO/IV q48h or 750 mg PO/IV x 1 then 500 mg PO/IV q48h	500 mg PO/IV x 1 then 250 mg PO/IV q48h	Same as HD
MACROLIDES	Azithromycin (PO/IV)	500 mg IV/PO x 3 days or 500 mg PO x 1 then 250 mg PO x 4 days MAC prophylaxis: (CD4 less than 50) 1250 mg PO weekly	No change	No change	No change	No Change
	Clarithromycin (PO)	250 to 500 mg PO BID	**Less than 30:** 250 to 500 mg PO daily	250 to 500 mg PO daily	500 mg PO daily (dose AD on dialysis days)	500 mg PO daily
TETRACYCLINES	Doxycycline (PO)	100 mg PO BID	No change	No change	No change	No Change
GLYCYLCYCLINE	Tigecycline (IV) **(Restricted: Consult ID or call pharmacist)**	100 mg IV x 1 dose, then 50 mg IV q12h	No change	No change	No change	No Change
MISCELLANEOUS	Clindamycin (IV/PO)	600 to 900 mg IV q8h; 150 to 450 mg PO QID	No change	No change	No change	No Change
	Daptomycin **(Restricted Consult ID or call pharmacist)**	4-12 mg/kg IV q24h	**Less than 30**: 4 to 12mg/kg IV q48h	4 to 12 mg/kg IV q48h	Give dose q48h AD. if dialysis is 72hrs apart give dose + 50%	Dose as per CrCl less than 10
	Linezolid (PO/IV) **(Restricted: Consult ID or call pharmacist)**	600 mg PO/IV q12h	No change	No change	600 mg PO/IV q12h; ensure 1 dose given AD	600 mg IV/PO q12h
	Metronidazole (PO/IV)	500 mg PO/IV q8 to 12h **C. diff.:** 500 mg PO TID x 10 to 14 days	No change	No change	500 mg PO/IV q12h; ensure 1 dose given AD Metabolites may accumulate = monitor for adverse effects	Dose as per HD
	Nitrofurantoin (PO)	50 to 100 mg PO QID MacroBID: 100 mg PO BID	**For females less than 40:** DO NO USE **For males less than 60:** DO NOT USE	DO NOT USE	DO NOT USE	DO NOT USE
	Septra, Bactrim, Trimethoprim (TMP)/ Sulfamethoxazole (SMX) (PO/IV) (IV = TMP 16 mg/mL + SMX 80 mg/mL)	**IV:** 8 - 20 mg TMP/kg/day divided q6, 8 or 12h. **PO:** 1 DS tab PO BID **PJP IV:** 15 to 20 mg TMP/kg/day div. q6 to 8h (Prednisone adjunct therapy: start 15 to 30 minutes prior to TMP/SMX at 40 mg PO BID x 5 days then taper over 21 days) **PJP PO**: 2 DS tabs PO TID treat x 21 days **PJP Prophylaxis:** (CD4 less than 200) 1 DS tab PO daily or 3x/week	**30 to 50**: No change **Less than 15 to 30:** Reduce dose by 50% **PJP:** **15 to 30:** 5 mg TMP/kg/dose q6 to 8h x 48h then 3.5 to 5 mg TMP/kg/dose q12h **PJP Prophylaxis:** **30 to 50:** 1 DS tab po daily or 3x/week **15 to 30:** 1 SS tab po daily or 3x/week	**Less than 15:** Not recommended **PJP:** **Less than 15:** 7 to 10 mg TMP/kg/day in 1 or 2 divided doses **PJP Prophylaxis:** **Less than 15:** 1 SS tab PO daily or 3x/week	**Not recommended** **PJP:** 7 to 10 mg TMP/kg AD **PJP Prophylaxis:** 1 SS tab PO daily, give dose AD on dialysis days	Not recommended but if used as per CrCl less than 10
	Vancomycin **Check serum trough levels***	25 mg/kg IV load, then 15 mg/kg TBW (round up to nearest 250 mg, max of 2 g per dose) IV q8 to 12h. Target trough* levels 15 to 20 mcg/mL	15 mg/kg IV q24 to 48h	15 mg/kg x 1 dose, then as per levels*	Load: 15 mg/kg IV x 1 dose AD then re-dose per sliding scale* post HD only. Levels drawn pre HD	25 mg/kg IV x 1, draw trough levels q 2 to 3 days, target 15 to 20 mcg/mL; when in range give 15 mg/kg x 1 then repeat levels
AMINOGLYCOSIDES (AG) **NOTE: Try to avoid in renal dysfunction.** ****Dose based on IDEAL BODY WEIGHT (IBW)** ***Contact Pharmacist for assistance**	Amikacin **Check serum levels*** Target trough levels: Once Daily: less than 2 mg/L Multiple Daily dosing: less than 8 mg/L	**Once daily dose:** 15 mg/kg** IV q24h; round to nearest 25 mg **Multiple daily dosing:** 7.5 mg/kg IV 12h	**40 to 59:** 15 mg/kg q36h **20 to 50:** 7.5 mg/kg q24h **Less than 20:** Do Not Use	DO NOT USE	DO NOT USE	DO NOT USE
	Gentamicin **Check serum levels*** Target trough levels: less than 1 mg/L	1.7 mg/kg** IV q8h **Once daily:** 6 mg/kg** IV q24h (round to nearest 20 mg) **Gram (+)ve Synergy:** 1 mg/kg** IV q8h	**40 to 59:** 6 mg/kg q36h; 1.7 mg/kg IV q12h **20 to 39:** 6 mg/kg q48h; 1.7 mg/kg q24h **Less than 20:** 1.7 mg/kg q48 to 72h	1.7 mg/kg** IV q 48 to 72h	1.7 mg/kg** IV x 1 dose AD then re-dose per sliding scale* post HD only. Levels drawn pre HD	No Data
	Tobramycin **Check serum levels*** Target trough levels: less than 1 mg/L	1.7 mg/kg** IV q8h **Once daily:** 6 mg/kg** IV q24h (round to nearest 20 mg)	**40 to 59:** 6 mg/kg q36h; 1.7 mg/kg IV q12h **20 to 39:** 6 mg/kg q48h; 1.7 mg/kg q24h **Less than 20:** 1.7 mg/kg q48 to 72h	1.7 mg/kg** IV q 48 to 72h	1.7 mg/kg** IV x 1 dose AD then re-dose per sliding scale* post HD only. Levels drawn pre HD	No Data

For list of References contact Antimicrobial Stewardship Program Coordinator 250-565-5956

10-110-6004 (IND Rev. 02/17)

Antibiotic Category	Generic Name	Dose Normal Renal Function	CrCl = 10 to 50 mL/min	CrCl less than 10 mL/min	Hemodialysis
ANTI-TUBERCULOUS **(Refer to Sanford's Guide for multi-drug regimen options)**	Ethambutol (PO)	15 to 25 mg/kg PO daily	15 to 25 mg/kg PO q24 to 36h **CrCl 10 to 30:** q36 to 48h	15 to 25 mg/kg PO q48h	15 to 25 mg/kg PO q48h, give AD on dialysis days PD: dose as for CrCl less than 10
	Isoniazid (PO) [Always give with vitamin B6 50 mg PO daily]	5 mg/kg PO daily (Max: 300 mg/day)	No change	No change	Dose daily; give AD on dialysis days for PD no change
	Pyrazinamide (PO) [dose based on IBW]	25 mg/kg PO daily (Max: 2.5 g/day)	**Less than 20:** 25 mg/kg PO q48h	25 mg/kg PO q48h	25 mg/kg PO q48h, give AD on dialysis days PD: 25 mg/kg PO daily
	Rifampin (PO) [dose based on IBW]	600 mg PO daily	300 to 600 mg PO daily	300 to 600 mg PO daily	HD & PD: 300 to 600 mg po daily

Antifungal Agents	Generic Name	FDA Treatment Indications	Dose	Renal Impairment Dose
Azoles Derivatives	Fluconazole (PO/IV) **(FIRST LINE AGENT)**	Esophageal, UTI, vaginal candida infections, cryptococcal meningitis	100 to 400 mg PO/IV q24h	**Less than 50**: decrease dose by 50%; **Hemo:** Give full dose AD and 50% of dose on non-dialysis days **PD:** dose as for CrCl less than 10
	Itraconazole (PO/IV)	Blastomycosis, histoplasmosis, invasive salvage therapy for aspergillosis	200 mg PO/IV q12h or For invasive infections: 200 mg TID x 3 days then q12h	**If less than 30: DO NOT give IV** - due to cyclodextrin accumulation **Less than 10:** 100 to 200 mg PO BID **HD:** 100 mg PO BID **PD:** same as for HD
	Voriconazole (PO/IV) (restricted: see indications)	Prophylaxis or treatment of aspergillus, scedosporium or fusarium spp. or intolerance or isolate resistance to amphoB or fluconazole	400 mg PO BID or 6 mg/kg IV q12h x 2 doses, then 200 mg PO BID or 4 mg/kg IV q12h (reduce dose by 50% for less than 40 kg)	No change for oral dose **If less than 50 or HD/PD: DO NOT administer IV** due to cyclodextrin accumulation
Cell Wall Disruptor	Micafungin **(Restricted to 2nd line use after fluconazole)**	Candidemia, disseminated candidiasis, *candida* abscess & peritonitis infection	100 to 150 mg IV q24h	No adjustment.
	Caspofungin **(Restricted to 2nd line use in pediatric patients)**	Refractory aspergillosis, *candida* infections resistant to fluconazole	Pediatric: 70 mg/m^2 IV load dose (max 70 mg) then 50 mg/m^2 IV q24h (max 50 mg)	No adjustment

Antiviral Category Generic Name	FDA Treatment Indications	Dose	CrCl = 10 to 50 mL/min	CrCl less than 10 mL/min
Acyclovir ****For obese pts use ABW**	Herpes Simplex Virus	400 mg PO TID or 200 mg 5x/day 5 to 10 mg/kg** IV q8h (immunocompromised, critically ill, pregnant, necrotic ulcers)	**25 to 50:** 5 to 10 mg/kg** IV q12h **10 to 25:** 5 to 10 mg/kg** IV q24h 400 mg PO BID	50% dose** IV q24h 200 mg PO BID give 1 dose AD on dialysis days for PD: dose as for CrCl less than 10
	HSV Encephalitis, Herpes Zoster & Varicella-Zoster Virus	800 mg PO 5x/day (q4h) 10 to 15 mg/kg** IV q8h	**25 to 50:** 10 to 15 mg/kg** IV q12h **10 to 25:** 10 to 15 mg/kg** IV q24h 800 mg PO TID	5 to 7.5 mg/kg** IV q24h (Dose AD) 800 mg PO BID (give 1 dose AD) PD: dose as for CrCl less than 10
Valacyclovir	Herpes Zoster (shingles)	1 g PO TID x 7 days [HIV: 1 g PO TID x 7 to 10 days]	**30 to 49:** 1 g PO BID **10 to 29:** 1 g PO daily	500 mg PO daily (dose AD) for PD: 500 mg PO daily
	HSV genital infection	Initial episode: 1 g PO BID x 10 days Recurrence: 500 mg PO BID x 3 days [HIV: 1 g PO BID x 5 to 10 days] Suppression: 0.5 to 1 g PO daily (0.5 g if less than 9 episodes/yr) [Suppression in HIV: 500 mg PO BID]	Initial: 10 to 29: 1 g PO daily Recurrence: 10 to 29: 500 mg PO daily Suppression: 10 to 29: 500 mg PO daily to q48h (give q48h if 9 or less episodes/yr)	Initial: 500 mg PO daily Recurrence: 500 mg PO daily Suppression: 500 mg PO q48h [HIV or 9 or more episodes/year: 500 mg PO daily] Dose AD; for PD 500 mg PO daily
	Herpes labialis (cold sores)	2 g PO BID x 1 day [HIV: 1 g PO BID x 5 to 10 days]	**30 to 49:** 1 g PO BID x 2 doses **10 to 29:** 500 mg PO BID x 2 doses	500 mg x 1 dose (dose AD; for PD 500 mg x 1 dose)
Ganciclovir **(Restricted: HIV, transplant, oncology, ophthalmology and hematology patients)**	Cytomegalovirus infections	**Induction (I)**: 5 mg/kg IV q12h **Maintenance (M)**: 5 mg/kg IV q24h	**50 to 69: I:** 2.5 mg/kg IV q12h; **M**: 2.5 mg/kg IV q24h **25 to 49: I:** 2.5 mg/kg IV q24h; **M:** 1.25 mg/kg IV q24h **10 to 24: I:** 1.25 mg/kg IV q24h; **M:** 0.625 mg/kg q24h	**I:** 1.25 mg/kg IV 3x/week (dose AD) **M:** 0.625 mg/kg IV 3x/week (dose AD) **PD:** dose as for CrCl less than 10
Valganciclovir **(Restricted: HIV, transplant, oncology, ophthalmology and hematology patients)** *Give oral dose with food*	Cytomegalovirus infections	900 mg PO BID x 21 days, then 900 mg PO daily	**40 to 59**: 450 mg PO BID x 21 days, then 450 mg PO daily **25 to 39:** 450 mg PO daily x 21 days, then 450 mg PO q48h **10 to 24:** 450 mg PO q48h x 21 days, then 450 mg PO twice weekly	Not recommended For HIV consider solution 200 mg 3x/week x 21 days, then 100 mg 3x/week
Oseltamivir (**Restricted: need approval by MHO for *prophylaxis***)	Influenza A and B	**Treatment:** 75 mg PO BID **Prophylaxis:** 75 mg PO daily	**Treatment: 31 to 60:** 75 mg PO daily x 5 days **10 to 30:** 30 mg PO daily x 5 days **Prophylaxis: 31 to 60:** 75 mg PO q48h **10 to 30:** 30 mg q48h	**Not recommended unless on HD:** **Treatment:** 75 mg PO after each HD x 5 days **For PD:** 30 mg PO x 1 dose **Prophylaxis:** 30 mg PO after every other HD **For PD:** 30 mg PO 1x/week

Abbreviations:
ABW = adjusted body weight, AD = after dialysis, AG = Aminoglycosides, CMV = Cytomegalovirus, CSF = Cerebrospinal Fluid, DS = double strength, G = Gentamicin, HSV = Herpes Simplex Virus, HD = hemodialysis, I = induction, IBW = ideal body weight, ID=Infectious diseases, M = maintenance, MAC = Mycobacterium Avium Complex, MU = million units, MD = maintenance dose, PD = peritoneal dialysis, PJP = Pneumocystis jiroveci Pneumonia (formerly PCP), Ps = Pseudomonas, SMX = Sulfamethoxazole, SS = single strength, TBW = total body weight, TMP = Trimethoprim, MHO = Medical Health Officer

Formulas

Estimated CrCl (mL/min)	IBW ♂	IBW ♀	ABW (use if TBW greater than 120% IBW)
(((140 - age) / SCr (micromol/L)) x 90) x 0.85 for ♀	50 kg + 2.3 (each inch over 5 ft)	45.5 kg + 2.3 (each inch over 5 ft)	IBW + 0.4 (TBW - IBW)

IV to Oral Antimicrobial Step-down Guidelines

Oral antimicrobials **equally potent** to the IV formulation

Parenteral Therapy	Oral Therapy	Oral Bioavailability
Ciprofloxacin 200 mg IV q12h Ciprofloxacin 400 mg IV q12h	Ciprofloxacin 250 mg PO BID Ciprofloxacin 500 to 750 mg PO BID **NOTE**: space oral dose 2hrs before or 6hrs after calcium, magnesium and iron. Hold enteral feeds 1hr before and after dose (do not use oral suspension in feeding tubes due to clogging)	70%
Clindamycin 600 mg IV q6h Clindamycin 900 mg IV q8h	Clindamycin 300 mg PO QID Clindamycin 450 mg PO TID	90%
Fluconazole IV daily (daily dose same for both IV and PO administration)	Fluconazole PO daily (daily dose same for both IV and PO administration)	90%
Levofloxacin 750 mg IV q24h Levofloxacin 500 mg IV q24h	Levofloxacin 750 mg PO q24h Levofloxacin 500 mg PO q24h	99%
Metronidazole 500 mg IV q8h Metronidazole 500 mg IV q12h	Metronidazole 500 mg PO TID Metronidazole 500 mg PO BID	100%
Moxifloxacin 400 mg IV daily	Moxifloxacin 400 mg PO daily	90%
Sulfamethoxazole/trimethoprim 800/160 mg IV q8h	1 DS tab PO BID	85%
Voriconazole 400 mg IV q12h x 2 doses then 200 mg IV q12h	400 mg PO BID x 2 doses then 200 mg PO BID	96%

Oral antimicrobials **<u>less potent</u>** than IV formulation.
Step-down to a less potent oral agent requires <u>individual patient assessment</u>

Parenteral Therapy	Oral Therapy ***	Oral Bioavailability
Azithromycin 500 mg IV daily x 3 days (5 days if suspected legionella)	Azithromycin 500 mg PO x 1 then 250 mg PO daily x 4 days or Azithromycin 500 mg PO daily x 3 days	37%*
Cefazolin 1 g IV q8h	Cephalexin*** 500 mg PO QID	90%
Cefuroxime 750 mg IV q8h Cefuroxime 1.5 g IV q8h	Cefuroxime 500 mg PO BID with food	50%
Cloxacillin 1 to 2 g IV q6h	Cloxacillin 500 mg PO QID 1 hr before or 2 hours after meals **or** Cephalexin 500 mg PO QID	50%
Penicillin G 1 to 2 million units IV q6h	Penicillin V 300 mg PO QID **or** Amoxicillin 500 mg PO TID	60 to 73% Amoxicillin = 80%
Acyclovir# 5mg/kg IV q8h	Acyclovir# 400 mg PO TID **or** Valacyclovir# 1 g PO BID	Acyclovir = 10 to 20% Valacyclovir = 54%

* low bioavailability but rapidly moves into tissues resulting in low serum concentrations but high and persistent tissue concentrations (Note: 500 mg oral dose = loading dose)
# Doses and frequencies may vary depending on indication

Intravenous antimicrobials **without oral formulations**

Parenteral Therapy	Oral Therapy***	Oral Bioavailability
Ampicillin 500 mg IV q8h Ampicillin 1 g IV q6h	Amoxicillin 500 mg PO TID	80%
Ceftazidime 2 g IV q8h	Ciprofloxacin 750 mg PO BID (for *Pseudomonas spp*)	70%
Ceftriaxone 1 to 2 g IV q24h	Depends on indication (consult pharmacist) Amoxicillin-Clavulanate 875 mg PO BID **or** Cefuroxime 500 mg PO BID **or** Cefixime 400 mg PO daily	Amoxicillin = 80% Clavulanate = 30 - 98% Cefuroxime (with food) = 50% Cefixime = 50%
Gentamicin 6 mg/kg IBW** IV q24h Tobramycin 6 mg/kg IBW** IV q24h **Please contact pharmacy for dosing	Ciprofloxacin 750 mg PO BID (for *Pseudomonas spp*)	Cipro = 70%
Piperacillin/Tazobactam 3.375 g IV q6hr	Amoxicillin/clavulanate 500/125 mg PO TID **or** Ciprofloxacin 500 to 750 mg PO BID + Metronidazole 500 mg PO BID **or** Ciprofloxacin 500 to 750 mg PO BID + Clindamycin 300 mg PO QID	Amoxicillin= 80% Clavulanate = 30 - 98% Cipro = 70% Metro = 100% Clinda = 90%

NOTE: All above doses should be adjusted for the indication, patient's age, weight, and renal function when necessary.

***** If a pathogen has been identified ensure the organism is susceptible.**

Note: cephalothin is the representing agent in microbiology testing for cephalexin

Criteria for IV to Oral Step-Down in Adult Patients

1. Clinically improving
   a. Consistent improvement in fever over the last 24 hours or patient is afebrile (less than 38ºC)
   b. White blood cells decreasing
   c. Hemodynamically stable
2. Able to tolerate and absorb oral medications and is **NOT**:
   a. NPO or having difficulties swallowing
   b. Unconscious with no OG/NG available
   c. Experiencing active GI bleed, GI obstruction/ileus, OG/NG continuous suction, malabsorption syndrome
   d. Experiencing severe or persistent nausea, vomiting or diarrhea
3. Pathogen is not known to be resistant to the oral antimicrobial to be used

For list of References contact
Antimicrobial Stewardship Program Coordinator 250-565-5956