UW Medicine Monitoring Guidelines for Antimicrobial Therapy For Patients Receiving Greater than One Week of Therapy
(Updated by P&T ID Subcommittee October 2017)

These guidelines are primarily intended for the ambulatory setting; however, the principles apply in the inpatient setting as well. These are intended to provide **initial** guidance which may be modified depending on the individual patient based on clinical judgement.

Medication	CBC with differential and plts	Chem-7	Magnesium/ Calcium/ Phosphorous	CPK	LFT	Comments
ANTIBIOTICS						
Aminoglycosides (gentamicin, tobramycin, amikacin - *Intravenous only)*	Weekly	Twice weekly				Gram-positive synergy dosing (i.e. 1mg/kg q8h): Check peak and trough levels with the 3rd dose after initiation or dosage change. Gram-positive synergy dosing (3mg/kg/day): Trough level should be drawn after 1st or 2nd dose. Targeted trough concentration should be undetectable. High-dose extended therapy (> 5mg/kg/day): Check random level 6-14 hours after infusion, then plot on Hartford nomogram. For all regimens: Audiogram at baseline and Q 4 weeks if duration of therapy longer than 2 weeks. If trough level is therapeutic, check level weekly thereafter. Avoid concomitant nephrotoxins. For Cystic Fibrosis patients, see specific guidelines
Beta-lactams (cephalosporins, carbapenems, Monobactam, penicillins)	Weekly	Weekly				Consider weekly LFT monitoring in patients receiving nafcillin and ceftriaxone.
Colistin or Polymyxin B *(Intravenous only)*	Weekly	Twice weekly				Consider IV hydration; Verify dosing with Infectious Diseases Consult/Stewardship team For Cystic Fibrosis patients, see specific guidelines
Daptomycin	Weekly	Weekly		Weekly		
Linezolid	Weekly					Weak MAO inhibitor. For courses greater than 2 weeks, monitor for anemia, neutropenia, thrombocytopenia, peripheral neuropathy and optic neuritis.

Quinupristin-dalfopristin	Weekly	Weekly			Weekly	
Vancomycin	Weekly	Weekly				Check trough level with the 3rd dose after initiation or dosage change. If level is therapeutic (i.e. 10-20 mcg/ml), check weekly trough. Trough level should be done earlier for patients with changing renal function or fluid status (edematous). Peak levels are not necessary.
Agents with good oral bioavailability for which individualized monitoring is recommended depending on co-morbidities and dose						
Clindamycin	Weekly*				Weekly*	*Weekly for parenteral dosing (≥2400mg daily dose).
Ethambutol						Baseline and monthly visual acuity testing and testing of color discrimination
Fluoroquinolones (ciprofloxacin, levofloxacin, moxifloxacin)		Baseline SCr				Monitoring based on symptoms. Consider EKG if on concurrent QT prolonging agent; Discuss FDA warning with patient including increased risk of tendonitis, and tendon rupture, and worsening of myasthenia gravis.
Isoniazid					Baseline	Monitor for peripheral neuropathy, pyridoxine 25-50mg/day is recommended. Routine monitoring of LFTs is not required UNLESS patients have pre-existing liver disease or abnormal LFTs that do not require discontinuation of the drug, then LFTs should be monitored monthly and when symptoms occur.
Metronidazole						For therapy greater than 2 weeks, monitor for peripheral neuropathy symptoms.
Pyrazinamide					Baseline	For patients with pre-existing liver disease or abnormal LFTs that do not require discontinuation of the drug, LFT should be monitored monthly and when symptoms occur.
Rifampin					Baseline	Subsequent LFT monitoring based on symptoms. Review for drug-drug interactions (See dot phrase)
Trimethoprim/ Sulfamethoxazole	Weekly*	Weekly*			Weekly*	*Initially check labs weekly for doses greater than 1 DS PO BID, but then monthly Review for drug-drug interactions (e.g warfarin)
ANTIFUNGALS						
Amphotericin B (including lipid formulations) *(Intravenous only)*	Weekly	Twice weekly	Twice weekly		Weekly	Consider pre- and post - IV hydration and pre-medications (e.g. acetaminophen and diphenhydramine)

Azoles (fluconazole, isavuconazonium, itraconazole, posaconazole)		Twice a month			Twice a month	Review for drug-drug interactions with new azole therapy. Check initial posaconazole trough after 7-10 days and then monitor levels at least monthly while on therapy. Goal level > 0.7mg/L for prophylaxis. For treatment of invasive fungal infections higher posaconazole troughs may be warranted (> 1 mg/L). No levels are required for isavuconazonium Itraconazole trough concentration: goal level >0.5 mg/L to ensure adequate absorption, but for treatment of invasive fungal infections, higher troughs may be required.
Azoles (voriconazole)		Twice a month	Twice a month		Weekly*	Review for drug-drug interactions with new azole therapy. LFT monitoring is recommended weekly during the first month of therapy, then monthly. Visual evaluation is recommended if voriconazole continues for more than 1 month. Check initial voriconazole trough level after 5-7 days and then monitor levels at least monthly while on therapy (Goal trough: 1- 5.5 mg/L). Clinical skin exam yearly.
Echinocandins (caspofungin, micafungin)					Weekly	
Flucytosine	Twice weekly	Twice weekly				Check Flucytosine level 2 hour post-dose 3-5 days after therapy: goal 30-80 mg/L; Toxicity seen with level > 100 mg/L
ANTIVIRALS						
Acyclovir	Weekly	Weekly				Consider IV hydration for high-dose IV acyclovir
Foscarnet	Weekly	Twice weekly	Twice weekly			IV hydration should be administered before each dose. Avoid other nephrotoxic agents if possible.
Ganciclovir	Twice weekly	Weekly				
Valganciclovir	Once monthly	Once monthly				
Cidofovir	Twice weekly	Twice weekly	Twice weekly			IV hydration should be administered before each dose. Probenecid is prescribed with dose of 5 mg/kg. Urinalysis is recommended at baseline and weekly thereafter. Avoid other nephrotoxic agents if possible. See SCCA guidelines for probenecid dosing