

THERAPEUTIC DRUG MONITORING GUIDELINES

DRUG	THERAPEUTIC RANGE	TOXIC RANGE	PROPER TIMES FOR SPECIMEN COLLECTION
Amikacin	Trough: <2.5 mcg/mL Peak: 15-30 mcg/mL	Trough: >5 mcg/mL Peak: above 40	Trough: 30 minutes prior to next dose. Peak: 30 to 60 minutes after end of IV infusion. 60 minutes after an IM or oral dose.
Carbamazepine (Tegretol)	4 - 12 mcg/mL	Above 12 mcg/mL	Steady state: Just prior to next dose. Note: Due to diurnal variation, serial blood samples should be drawn at the same time of day relative to dosing.
Digoxin (Lanoxin)	0.8 - 2.0 ng/mL	Above 2.0 mcg/mL	Steady state: Just prior to next dose. Digoxins drawn less than eight hours after a dose are impossible to interpret.
Gentamicin	Peak: 4 - 10 mcg/mL Trough: Below 1	Peak: Above 10 mcg/mL Trough: Above 2 mcg/mL	I.V.: Peak - 90 minutes after start of infusion or 30 min after end of infusion.. Trough - No more than 30 minutes before dose. I.M.: Peak - 45 to 75 minutes after administration Trough - No more than 30 minutes before dose.
Lidocaine	1.5 - 5.0 mcg/mL	Above 5.0 mcg/mL	While receiving constant infusion, but at least 30 minutes after the last loading dose.
Lithium	0.6 - 1.2 mEq/L	Above 1.5 mEq/L	Steady state: 8 – 12 hours after the last dose. (Just prior to next dose)
Phenobarbital	10 - 40 mcg/mL	Above 40 mcg/mL	Steady state: Just prior to the next dose.
Phenytoin (Dilantin)	10 - 20 mcg/mL	Above 30 mcg/mL	Steady state: Just prior to the next dose. (at least six hours after the last dose)
Primidone (Mysoline)	5 - 12 mcg/mL	Above 15 mcg/mL	At least six hours after a dose. Note: Phenobarbital is a principle metabolite of primidone. It is necessary to monitor phenobarbital as well as primidone, even if the patient is not receiving phenobarbital.
Procainamide (Pronestyl)	Procainimide: 4.0 – 10.0 mcg/mL	Procainamide: Above 12 mcg/mL	Steady state: 3 - 4 hours after the last dose. Draw before next oral dose. 6 – 12 hours after IV infusion starts
N-acetyl-procainamide (NAPA)	NAPA: 15.0 – 25.0 mcg/mL		Note: The procainamide and NAPA assay results combined should not exceed 30 mcg/mL.
Theophylline (Aminophylline)	10 - 20 mcg/mL	Above 20 mcg/mL	Steady state: just prior to the next dose. Peak concentration: IV: At least 30 minutes after the loading dose. Oral: 1 - 2 hours after plain uncoated tablets. 3 - 8 hours after ingestion of timed release products.
Tobramycin	Peak: 4 - 10 mcg/mL Trough: Below 1	Peak: Above 10 mcg/mL Trough: Above 2 mcg/mL	IV: Peak - 90 minutes after starting infusion or 30 min after end of infusion. Trough - No more than 30 minutes before a dose. IM: Peak - 45-75 minutes following administration. Trough - No more than 30 minutes before a dose.
Valproic Acid (Depakene)	50 - 100 mcg/mL 88 - 125 mcg/mL as antipsychotic use	Above 100 mcg/mL	Steady state: just prior to the next dose.
Vancomycin	Peak: 20-40 mcg/mL Trough: 10-15 mcg/ml	Above 50 mcg/mL Above 20 mcg/mL	Peak: One (1) hour after drug infusion is complete. Trough: No more than 30 minutes before a dose.

Reviewed / Date: _____