

 <p style="text-align: center;"><b>UNIVERSITY HEALTHCARE</b></p>	POLICY #: UH LAB-ADM 015
	EFFECTIVE DATE: 05/09/2017
	REVISED DATE(S):  REVIEWED DATE(S): 05/2017

### Therapeutic Drug Monitoring Guidelines

**Principle:**

Peak and Trough specimens are tested to ensure that the patient is receiving the proper dosage of medication. Collection at the proper times is critical to the accuracy of the testing procedure.

**Procedure:**

Acetaminophen: Collection is random; primary use is to monitor toxicity in overdose cases.

Amikacin (Amikin):

- Trough: Collect specimen within 30-min prior to the next dose.
- Peak: Collect specimen at the end of a 1-hour constant infusion  
OR 30-min after the end of a 30-min constant infusion  
OR 1 hour after an IM dose.
- Extended Interval
- Random: Collect specimen between 6 and 14 hours after the start of the infusion.

Carbamazepine (Tegretol): Collect specimen at trough conc. within 30-min prior to the next dose.

Digoxin: Collect specimen 12 hours or more following the last oral dose of Digoxin.

Gentamicin:

- Trough: Collect specimen within 30-min prior to the next dose.
- Peak: Collect specimen at the end of a 1 hour constant infusion  
OR 30-min after the end of a 30-min constant infusion  
OR 1 hour after an IM dose.
- Extended Interval
- Random: Collect specimen between 6 and 14 hours after the start of the infusion.

Lithium: Collect specimen at least 12 hour after the last dose. Levels obtained at 24 hour after the dose have been shown to be a good indicator of maintenance doses.

Phenobarbital: Collect specimen at trough conc. within 30-min prior to the next dose.

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Phenytoin (Dilantin): Collect specimen at steady-state trough conc. within 30-min prior to the next dose.

Salicylate: Collection is random; primary use is to monitor toxicity in overdose cases.

Theophylline: Collect just prior to next dose.

Tobramycin (Nebcin):

Trough: Collect specimen within 30-min prior to the next dose.

Peak: Collect specimen at the end of a 1-hour constant infusion  
OR 30-min after the end of a 30-min constant infusion  
OR 1 hour after an IM dose

Extended Interval

Random: Collect specimen between 6 and 14 hours after the start of the infusion.

Valproic Acid (Depakene): Collect specimen at trough conc. within 30-min prior to the next dose.

Vancomycin (Vancocin):

Trough: Collect specimen within 30-min prior to the next dose.

Peak: Collect specimen 1 hour after the completion of a 2 hour infusion.

Vancomycin Peak testing is not generally recommended.

**References:**

Wu, Alan Tietz Clinical Guide to Laboratory Tests-Fourth Edition 2006

Burtis, CA, Ashwood, ER, Bruns, DE. (2015) Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 7th edition. Elsevier.

 <p><b>WVU</b>Medicine</p> <hr/> <p>UNIVERSITY HEALTHCARE</p>	POLICY #: UH LAB-ADM 015
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**DISTRIBUTION:** BMC Lab General, JMC Lab Admin, Policy Manager

**PREPARED BY:** George Crabill

**APPROVED BY:** \_\_\_\_\_  
 Ryan Livengood, MD, Medical Director

REVIEWED BY:	DATE:

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