POLICY STATEMENT:
The intention of vancomycin and aminoglycoside (amikacin, tobramycin and gentamicin) drug monitoring is to ensure that patients are receiving therapeutic and safe doses of these medications.

PURPOSE:
To describe the procedure for drawing vancomycin and aminoglycoside levels (peak, trough or random).

DEFINITIONS:
- **Peak** – maximum serum concentration of a drug in the blood, measured 30 minutes after the completion of a drug infusion
- **Trough** – minimum serum concentration of a drug in the blood, measured 30 minutes before the start of a drug infusion
- **Random** – a level that can be drawn at any time; the prescriber will define the exact timing of the level as part of the order.

IMPLEMENTATION: MD, DO, NNP, APRN, PA, RN, Phlebotomist, Pharmacist

PROCEDURE:
1. All patients receiving intravenous vancomycin or aminoglycoside therapy will have therapeutic monitoring with peak, trough, or random levels as determined by clinicians (MD, DO, NNP, APRN or PA) and/or a pharmacist.

2. Intravenous vancomycin will be infused over 1 hour. If the patient has a history of Red Man’s Syndrome with administration of vancomycin, vancomycin can be infused over 2 hours. Once daily tobramycin (primarily for cystic fibrosis patients) will be infused over 1 hour. All other aminoglycosides will be infused over 30 minutes. These infusion times ensure optimum drug concentrations and accurate therapeutic monitoring.

3. Vancomycin and aminoglycoside levels (peak, trough, or random) will be obtained either through a venous or capillary blood draw.
   a. Obtaining vancomycin and aminoglycoside levels from central lines (CVLs, PICCs, ports) is not recommended as the literature demonstrates a significant difference in vancomycin and aminoglycoside levels when drawn from central lines and peripheral sites, even when a “flush and discard” method is used [1, 2, 3, 4]. Therefore, the “flush and discard” method is not to be used as it can lead to inaccurate levels which can result in erroneous dose adjustments and potentially unsafe drug levels (either sub therapeutic or supra therapeutic).
   b. If the patient has multiple central lines it may be reasonable for vancomycin or aminoglycoside levels (peak, trough, or random) to be obtained from a central line that is not being used to infuse these medications, but this could only be approved and ordered by a clinician (MD, DO, NNP, APRN or PA) or pharmacist.

4. Peak drug levels will be obtained 30 minutes after the completion of a drug infusion. Trough drug levels will be obtained 30 minutes before the start of a drug infusion. Random drug levels will be obtained at the time specified in the order.
5. While awaiting the peak, trough or random level vancomycin and aminoglycoside infusions will continue as ordered (do not hold medication) unless specifically stopped or altered by a clinician (MD, DO, NNP, PA or APRN) or pharmacist order.

6. If a medication is rescheduled or given off schedule, please contact a pharmacist to re-time the level to ensure accurate results.

REFERENCES:


