

## *Pathology and Laboratory Medicine Memorandum*

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To: Central Zone Healthcare Providers and Health Service Directors  
From: Dr. Amy Lou, Director of Core Chemistry Lab, PLM CZ  
Ms. Cindy Andrews – Manager Core Lab  
Date: October 24, 2023  
Subject: Utilization of Venous Blood Gas Testing

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**Venous blood gas (VBG) analysis (including repeat VBG) should not be used in place of routine chemistry testing. Plasma lactate is offered on-site at all Central Zone laboratories and has a median total turnaround time of less than 40 mins.**

Important notes:

1. First-line testing for acid-base status should be performed in plasma by routine in-lab chemistry tests, including electrolytes, total CO<sub>2</sub>, anion gap and lactate in patients who are not critically ill and have no respiratory system concerns:
  - a. Patients who have respiratory related acid-base abnormalities should be assessed using an arterial blood gas (ABG).
  - b. Venous blood gas (VBG) analysis can be considered as an alternative to arterial blood gas (ABG) analysis for assessing acid-base abnormalities in critically ill patients who have no respiratory system concerns, such as in diabetic ketoacidosis (DKA).
2. VBG testing requires special pre-analytical instructions, such as collection of whole blood specimens using syringes rather than vacutainers, avoiding bubbles and micro-clots and rapid sample delivery. The acceptable collection-to-analysis time of 30 minutes for VBG (particularly VBG lactate) may pose challenges for some clinical sites and lead to subsequent test cancellations which may delay patient management. The unit where the collection occurs must ensure **delivery to the laboratory within 15-20 minutes** to allow time for testing within 30 minutes.
3. VBG involves greater manual processing and higher expense of consumables compared to routine chemistry testing. Appropriate utilization is hence necessary to avoid unnecessary consumption of valuable lab resources.

If you have any questions, please contact Dr. Amy Lou at (902) 473-1528