

Date: March 9, 2012

To: South Zone: Rural Laboratories, Physicians and Nursing Managers
Fran Pratt, Brian Daudlin, Mike Peta, Denise Patton

From: AHS Laboratory Services

Re: LB-04-12 Blood Gas Specimens Should be Left at Room Temperature

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Messages:

Clinical Laboratory Standards Institute (CLSI) states: "Before the era of plastic syringes, it was customary to collect blood gas specimens in glass syringes and ice these samples to minimize reduction in O₂ levels. Unlike glass, polypropylene and other polymer materials of which plastic syringes are made are somewhat permeable to gases. Icing increases the permeability of plastic to gases and raises the pO₂. All blood gas specimens are collected in SafePICO plastic syringes and therefore **icing of plastic syringes can falsely elevate pO₂ values**".

The Society for Gynecology (SOGC) Fetal Health Surveillance: Ante partum and Intrapartum Consensus Guidelines states that specimens from the umbilical artery are stable for pH and blood gas assessment for up to 60 minutes at room temperature.

Cord blood gas specimens that can not be analyzed within one hour are the only exception to the room temperature rule. These samples should be kept cool and are stable for 12 hrs but the pH is the only valid result.

Icing of Blood gas specimens collected in plastic syringes is no longer an accepted practice.

Why is this important?

To ensure we are following best practice and avoid introducing pre-analytical errors in blood gas analysis.

Action Required:

Sample Type	Temperature	Stability	Reportable Parameters
Cord Blood Gas Arterial Blood Gas	Room Temperature	Test within one hour of collection	pH, pCO ₂ , pO ₂ , lactate, TCO ₂ , HCO ₃ , BE, sO ₂
Cord Blood Gas	On Ice	Stable for 12 hrs	pH only because sample was iced

Inquires and feedback maybe directed to:

Dr. Barbara Popma by phone at 403-388-6153, or by email at Barbara.Popma@albertahealthservices.ca or Dr. Michael O'Connor by phone at 403-529-8867 or by email at Michael.O'Connor@albertahealthservices.ca.

This bulletin has been reviewed and approved by
Dr. Barbara Popma, Zone Clinical Department Head (Co-Lead) Laboratory Medicine, South Zone
Dr. Michael O'Connor Zone Clinical Department Head (Co-Lead) Laboratory Medicine, South Zone