Providence HEALTH CARE	Department: **Respiratory Services**	Date Originated: April 1997 Date Reviewed/Revised: **June 2010**
POLICY & PROCEDURE	Topic: Critical Care – Arterial Blood Gas Clinical Practice Guideline Critical Care (Respiratory Therapy) Number: B-00-12-12012	Related Links:

APPLICABLE SITES:

St. Paul's Hospital
Mount Saint Joseph Hospital

POLICY STATEMENT:

Routine or regular arterial blood gas draws are generally not indicated. Staff working in Critical Care areas will adhere to the Arterial Blood Gas Clinical Practice Guideline when determining the need for the procurement of an ABG.

The Clinical Practice Guideline for Arterial Blood Gas Measurement was developed by a multidisciplinary team chaired by Dr. Dodek. The purpose of the CPG is to minimize unnecessary blood draws for ABG analysis, while continuing to deliver high-quality care to the patient.

GENERAL GUIDELINES:

INITIAL ASSESSMENT – ALL PATIENTS:

Baseline and routine (once daily) [(1)] ABG should be measured when any of the following are present:

- Suspected or proven respiratory failure
- Hemodynamic instability
- New dysrhythmia
- Acid/base disturbance

ONGOING CARE – ALL PATIENTS:

PRN ABG should be measured with any of the following situations:

- Respiratory distress [(2)] (change in WOB, use of accessory muscles, altered mental status, diaphoresis, cyanosis, change in respiratory rate of 20%
- A decrease in SpO_2 > 5%
- Hemodynamic instability or decrease in organ perfusion
- Acid/base disturbance

ONGOING CARE – INTUBATED PATIENTS:

PRN ABG [3] should be measured with any of the following:

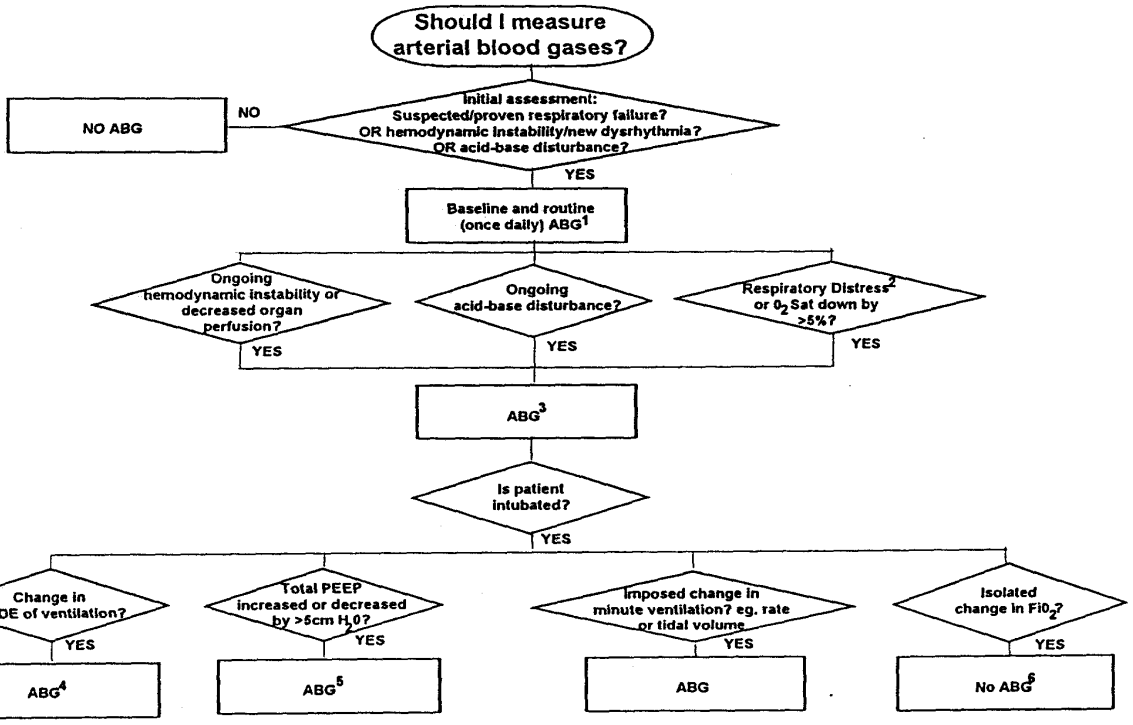
- Change in mode of ventilation [4]
- A change in total PEEP > 5 cmH_2O [5] (increase or decrease)
- Imposed change in minute volume (i.e. rate or minute volume)

NOTE: *For an isolated change in FiO_2 ABG [6] is NOT indicated.*

1. Routine (once daily) ABG may be done in patients who do not have any other indications beyond this point, however routine (once daily) ABG is NOT indicated for chronic, stable respiratory failure.
2. Increase or decrease in work of breathing (use of accessory muscles, 20% increase or decrease in respiratory rate), altered mental status, diaphoresis, or cyanosis.
3. Frequency dependent on severity of underlying disorder and duration of treatment.
4. ABG is NOT indicated if change is within a given ventilator mode unless there is a subsequent change in O_2 saturation, minute ventilation, or hemodynamics.
5. ABG is NOT indicated for change in PEEP of less than 5 cmH_2O, unless there is a subsequent change in O_2 saturation, minute ventilation, or hemodynamics.
6. ABG is NOT indicated for changes in FiO_2 unless there is a subsequent change in O_2 saturation, minute ventilation, or hemodynamics.

PRACTICE GUIDELINE FOR ARTERIAL BLOOD GAS MEASUREMENT

(If the response to any decision point is "NO", no further action is required)



1 Routine (once daily) ABG may be done in patients who do not have any of the indications beyond this point. Routine (once daily) ABG are not indicated for chronic, stable respiratory failure.

2 Increase or decrease in work of breathing (use of accessory muscles, 20% increase or decrease in respiratory rate), altered mental status, diaphoresis, cyanosis.

3 Frequency dependent on severity of underlying disorder and duration of treatment.

4 ABG not indicated if only a change within a given ventilator mode without any subsequent changes in O_2 saturation, minute ventilation or hemodynamics.

5 For change in PEEP less than 5cm H_2O, ABG indicated if there is a subsequent change in O_2 saturation, minute ventilation, or hemodynamics.

6 ABG not indicated for changing FiO_2 if no associated changes in O_2 saturation, minute ventilation or hemodynamics