Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg Caring for Health / À l'écoute de notre santé **CRITICAL CARE CLINICAL PROTOCOL**	**Title:** **Intra Abdominal Pressure Monitoring Via Indwelling Urinary Catheter (Adult)**	
	Approval Date: *Febuary 15, 2018*	**Pages:** *1 of 4*
	Approved By: *Standards Committee* *Professional Advisory Committee*	**Supercedes:** *New*

1.0 PURPOSE:

1.1 To provide guidelines for measuring intermittent intra abdominal pressure (IAP).

2.0 DEFINITIONS:

2.1 **Intra Abdominal Pressure** (IAP) is the pressure concealed within the abdominal cavity. IAP is measured indirectly using the bladder to obtain the inferred measurement. A normal pressure reading is 0 mmHg, while in a critically ill patient it may rise to 5-7 mmHg.

2.2 **Intra Abdominal Hypertension** (IAH) is defined as an IAP of greater than or equal to 12 mmHg.

IAH is graded by severity:
Grade I: 12-15 mmHg
Grade II: 16-20 mmHg
Grade III: 21-25 mmHg
Grade IV: >25 mmHg

2.3 **Abdominal Compartment Syndrome** (ACS) is a clinical syndrome caused by a sustained IAP greater than (>) 20 mmHg that is associated with new organ dysfunction/failure.

2.4 **Abdominal Perfusion Pressure** (APP) is defined as Mean Arterial Pressure minus IAP.

3.0 GUIDELINES:

3.1 Registered Nurses who have been orientated to equipment and upon a written order from a physician, may perform intra abdominal pressure monitoring. Performance of IAP measurement requires advanced knowledge and skill.

3.2 Report an IAP reading greater than 12mmHg to the Attending physician or designate.

3.3 IAP measurements are preformed intermittently as per physician's order.

3.4 The most accurate and reliable measurement of intra-abdominal pressure is obtained on a patient in supine position, who is sedated and on a controlled mode of mechanical ventilation.

4.0 EQUIPMENT:

4.1 Indwelling urinary catheter with drainage bag
4.2 Pressure Transducer Set (pole or patient mounted)
4.3 500 mL sterile Normal Saline (NS) Intravenous (IV) bag
4.4 1- Non-toothed (or rubber-tipped) forceps or clamps
4.5 4x4 Gauze (as required)
4.6 2- Alcohol Swabs (70% alcohol)
4.7 1 - Large volume leur lock syringe (30-60 mL)
4.8 1- IV pole
4.9 1 -Transducer holder and leveling device if pole mounted system is used

5.0 PROCEDURE:

5.1 Connect 500 mL NS IV bag to the pressure transducer set. Prime set to remove all air. Label the transducer set with date and time.

5.2 Connect transducer set to pressure cable and monitor. Adjust scales to 30 mmHg scale.

5.3 Turn the transducer stopcock off to the patient and remove the non vented cap. This will open the system to atmosphere. Select the zero function on the monitor. Once zeroed, turn the stopcock off to air and replace the non vented cap asceptically.

5.4 Connect large volume leur lock syringe to transducer stopcock (patient mounted) or distal stopcock (pole mounted).

5.5 Clean the culture aspirator port on the urinary drainage bag tubing (distal to patient) with an alcohol swab for 30 seconds and allow port to dry. Aseptically connect the transducer set to the culture aspirator port.

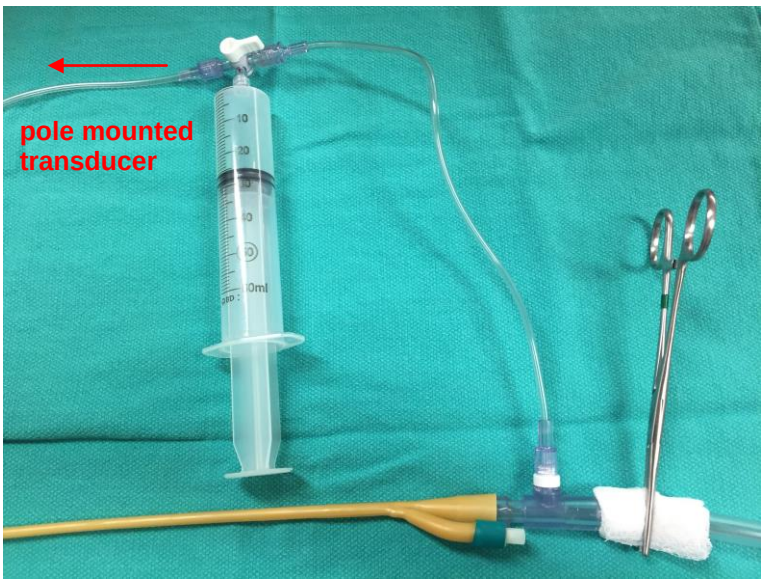
5.6 Place patient in the supine position unless contraindicated.
NOTE: If patient does not tolerate Head of Bed (HOB) being flat, raise HOB slightly to less than 20 degrees. A HOB greater than 20 degrees can significantly increase the IAP measurement.

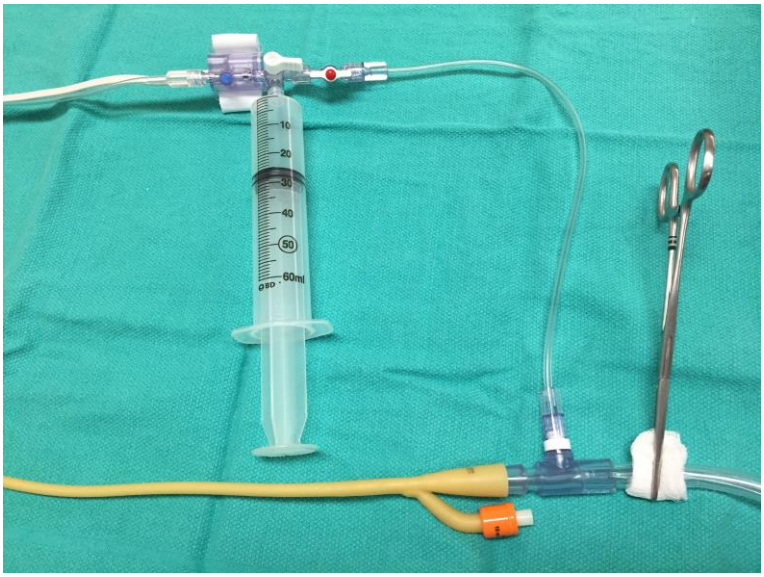
5.7 Level transducer to iliac crest at the mid-axillary line.

5.8 Clamp the urinary drainage bag immediately distal to the culture aspirator port using rubber-tipped forceps.
NOTE: If rubber-tipped forceps are unavailable protect urinary drainage tubing using a 4X4 gauze prior to clamping.

5.9 Turn the stopcock off to the patient, open to the leur lock syringe and pressure transducer set.

Pressure Transducer Set with Leur Lock Syringe Attached to Distal Stopcock (pole mounted)





Pressure Transducer Set with Leur Lock Syringe Attached to Transducer Stopcock (patient mounted)

5.10 Aspirate 25 mL of NS into leur lock syringe from the IV bag by pulling the flush device on the transducer and pulling back on the luer lock syringe.

5.11 Turn stopcock off to the pressure transducer set, open to the patient and NS-filled leur lock syringe.

5.12 Inject 25 mL of NS into the bladder.

5.13 Release clamp on urinary drainage bag momentarily to release air from the catheter. **NOTE**: Air in the system may dampen the pressure reading.

5.14 Re-clamp and wait 30-60 seconds after instillation, prior to measuring IAP to allow for bladder detrusor muscle relaxation.

5.15 Turn stopcock off to leur lock syringe ensuring it is open to transducer and patient to take the IAP measurement.

5.16 The abdominal pressure waveform will fluctuate with respiration. Measure pressure at end-expiration. The patient's IAP is expressed in mmHg.

5.17 After IAP is obtained, remove the clamp from the urinary drainage system and allow the bladder to drain. The 25 mLs of NS instilled is to be subtracted from the patient's urinary output.

5.18 Disconnect the pressure transducer set and apply a sterile cap to the end of the pressure monitoring tubing to maintain sterility between intermittent readings. Change the pressure transducer set every 24 hours.

6.0 DOCUMENTATION

6.1 Document IAP and HOB elevation in unit specific documentation records.

7.0 REFERENCES

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8.0 RESOURCES

8.1 Critical Care Clinical Educators

8.2 Critical Care Resource Nurse