



## RCNIC MANUAL

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**SUBJECT: Bladder Pressure Monitoring [Intraabdominal Pressure- IAP]**

### APPROVAL

Objective: To provide guidelines and nursing responsibilities for obtaining bladder pressures (IAP) in the RCNIC

Personnel: RN

#### Equipment

1. AbViser setup (#113930)
2. 500 ml bag 0.9% saline
3. Dr. Benzing transducer set (#105206)
4. Chlorhexidine scrubber
5. sterile gloves
6. sterile field
7. 4x4 sterile gauze
8. Red transducer cable

## If using the Kendall Precision 400 Urine Meter

1. Wash hands
2. Open AbViser kit. Be careful to keep all ends sterile.
3. Remove stopcock (with yellow cap) from end of AbViser Kit
4. Open Dr. Benzing Transducer Kit and disconnect at the stopcock port closest to the actual transducer box. Keep the short transducer system. Discard the longer piece that was disconnected, leave stopcock with blue cap in place; it will be used to zero transducer.
5. Attach the AbViser to the transducer. It can only attach one way.
6. Turn the stopcock off to the AbViser system.
7. Spike the saline bag with the AbViser spike
8. Prime the entire system with normal saline by pulling and pushing with the in-line syringe (this is possible with the one way valve). Be sure there is no air in the system to insure an accurate reading.
9. Place sterile field under area where the Foley catheter connects to the drainage bag.
10. Open CHG scrubber and the 4 x 4 gauze and place on sterile field.
11. Lay AbViser connection on sterile field.
12. Put on sterile gloves.
13. Scrub connection (Foley and bag) with CHG for 30 seconds holding catheter and bag tubing with 4 x 4 as a barrier. Let air dry for 30 seconds.
14. Connect AbViser to Foley cath (narrow end goes into Foley).
15. Connect drainage bag to other end of AbViser (drainage bag goes into rubbery end of AbViser).

## Steps for measuring abdominal pressure with Kendall 400 Urine Meter:

1. Obtain MD order for:
  - a. Amount of NS to use for installation (use formula  $1\text{ml/kg} + 2\text{ml}$ ) or 20 ml, whichever is less.
  - b. Frequency of bladder pressure monitoring.
  - c. Pressure parameters
2. Attach transducer to red hemodynamic monitoring cable.
3. Change name on monitor to CVP if it does not automatically appear.
4. Level and zero transducer with mid axillary line directly across from the umbilicus. Do this once per shift or if transducer is moved. Zero transducer to atmosphere by turning stopcock nearest to patient off to patient and opening stopcock with blue cap to air then loosening the blue cap and zero like an arterial line. Be sure to re-tighten cap and turn stopcocks after zeroing.
5. Retract the plunger on the AbViser syringe until the ordered amount of saline is in the syringe.
6. Compress the syringe briskly, infusing saline into bladder. There is a one way valve in the set up so that the fluid will go into the bladder. There is no need to clamp the tubing. The green balloon will inflate to keep the fluid in the bladder.
7. Allow the system to equilibrate. Note the pressure reading on the monitor at end respiration. The reading will only last about 45 seconds to 1 minute at which point the green valve/balloon will automatically deflate and release the fluid into the drainage bag.
8. Be sure to document infusion amount on I & O by subtracting the volume from the urine output.

### **If using Uri-cath set (comes in 3.5 or 5 Fr)**

1. Wash hands
2. Open AbViser kit. Be careful to keep all ends sterile.
3. Remove stopcock (with yellow cap) from end of AbViser Kit
4. Remove Green "button" with Foley connector and tubing from "T" piece.
5. Open Dr. Benzing Transducer Kit and disconnect at the stopcock port closest to the actual transducer box. Keep the short transducer system. Discard the longer piece that was disconnected, leave stopcock with blue cap in place; it will be used to zero transducer.
6. Attach the AbViser to the transducer. It can only attach one way.
7. Turn the stopcock off to the AbViser system.
8. Spike the saline bag with the AbViser spike
9. Prime the entire system with normal saline by pulling and pushing with the in-line syringe (this is possible with the one way valve). Be sure there is no air in the system to insure an accurate reading.
10. Place sterile field under area where the Foley catheter connects to the drainage bag.
11. Open CHG scrubber and the 4 x 4 gauze and place on sterile field.
12. Lay AbViser connection on sterile field.
13. Put on sterile gloves.
14. Locate stopcock with rubber stopper on Foley system.
15. Scrub stopcock with rubber stopper at both ends with CHG for 30 seconds holding catheter and bag tubing with 4 x 4 as a barrier. Let air dry for 30 seconds.
16. Remove stopcock with rubber stopper and discard.
17. Connect the leur-lock Foley to the stopcock on transducer set (it will only fit in one position)
18. Connect the drainage system to the "T" portion of the stopcock between the transducer and the Foley catheter.

### **Steps for measuring abdominal pressure using Uri-cath set:**

1. Obtain MD order for:
  - a. Amount of NS to use for installation (use formula 1mg/kg) or 20 ml, whichever is less. The minimum volume to be used is 1ml to insure that the fluid reaches the bladder.
  - b. Frequency of bladder pressure monitoring
  - c. Pressure parameters

Attach transducer to red hemodynamic monitoring cable.

2. Change name on monitor to CVP if it does not automatically appear.
3. Level and zero transducer with mid axillary line directly across from the umbilicus. Do this once per shift or if transducer is moved. Zero transducer to atmosphere by turning stopcock nearest to patient off to patient and opening stopcock with blue cap to air then loosening the blue cap and zero like an arterial line. Be sure to re-tighten cap and turn stopcocks after zeroing.
4. Turn stopcock off to drainage system.
5. Retract the plunger on the AbViser syringe until the ordered amount of saline is in the syringe.
6. Compress the syringe briskly, infusing saline into bladder, (may need to hold Foley catheter in place to prevent dislodgement during flushing.) There is a one way valve in the set up so that the fluid will go into the bladder. There is no need to clamp the tubing, but the stopcock must be off to the drainage system.
7. Allow the system to equilibrate. Note the pressure reading on the monitor at end respiration.
8. Once the reading is obtained, turn the stopcock off to the transducer and open to the drainage system.
9. Be sure to document infusion amount on I & O by subtracting the volume from the urine output.

Tips:

1. The NS bag needs to be changed every 24 hours.
2. The transducer set and AbViser set up needs to be changed every 72 hours.
3. Be sure to clearly label NS bag, tubing set up and transducer with dates hung and expiration dates.

Elevated pressures can lead to respiratory distress, as well as intestinal and renal ischemia.

0-5 mm Hg	Normal
6-11 mm Hg	Minimal elevation; common finding in the critically ill
12-15 mm Hg	Mild to moderate intra-abdominal hypertension. Watch for pathophysiologic changes related to abdominal compartment syndrome.
> 20 mm Hg	High risk for abdominal compartment syndrome.

NON-STOCK FORM NO. 1472

**References:**

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