Purpose

1. To promote adequate fluid balance in women in the postpartum period.
2. To reduce the risk of long term bladder dysfunction from postpartum urinary retention.
3. To promote the use of non-invasive screening methods (ie. bladder scanner) for detecting postpartum urinary retention.

Policy Statement

All nurses, physicians, residents, and medical/nursing students working on the Postpartum Units at the Grey Nuns Community Hospital are required to be educated in postpartum bladder management to provide knowledgeable, supportive and timely care to postpartum mothers.

Principles

1. Incidence of postpartum urinary retention (PPUR) is 1.7% - 17.9% or approximately 1/200 vaginal deliveries.
2. In the early postpartum period the bladder tends to be hypotonic with increased bladder capacity under the influence of elevated progesterone levels.
3. Contributing factors to PPUR:
   - Primigravida
   - Prolonged labour, especially prolonged second stage
   - Epidural for labour/delivery
   - Need for catheterization in labour
   - Assisted vaginal delivery
   - Caesarean section
   - Perineal injury
   - Edema in tissue surrounding the urethra and/or bladder neck
   - Increased blood volume in pregnancy
4. Bladder ultrasound scanning offers a reliable, non-invasive alternative to catheterization. It should be used as a complement to, not in isolation from, clinical evaluation.
5. The return of bladder sensation after epidural appears to be delayed for up to 8 hours after delivery.
6. Intrathecal opioids, such as epimorph, may increase the risk of urine retention that may last for 14 – 16 hours regardless of the dose used.
7. The rate of urinary tract infections is higher in those women who have had indwelling catheters than intermittent catheterization. Intermittent catheterization is preferable to indwelling catheterization, where appropriate.

Applicability

All staff that have a role in the care of postpartum mothers at the Grey Nuns Community Hospital.

Responsibility

Pertaining to the BVI 9400 BladderScan: It is the responsibility of the health care provider to read the entire user manual and have received a clinical in-service or formal training prior to operation of the BladderScan.
POSTPARTUM ASSESSMENT and MANAGEMENT:

1. Initiate nursing measures as part of ongoing assessment, which include:
   1.1 Administering oral analgesia
   1.2 Encouraging ambulation
   1.3 Providing privacy
   1.4 Providing warm shower
   1.5 Spraying/pouring warm water over perineum
   1.6 Running water or immersion of hand in cold water
   1.7 Applying ice pads to perineum for the first 24 – 48 hours post delivery

2. Ensure patient attempts to void every 2 – 3 hours.

3. Record first 3 or ongoing void volumes until voids are ≥ 200 ml x 3.

4. Ensure patient voids within 4 hours of delivery or catheter removal.
   4.1 Measure residual volumes with bladder scanner if patient has not voided within 4 hours, or is voiding < 200 ml each void (empty bladder immediately prior to bladder scanning). NOTE: To help determine if bladder has emptied, check fundus immediately following void. If fundus is still high and deviated to the side, the bladder likely contains urine. Proceed to bladder scanning.
   4.2 If scanned bladder volume < 500 ml, wait for 1 hour for spontaneous void and continue utilizing nursing measures:
      - If no void or voids < 200 ml by 1 hour, repeat scan and perform intermittent (in & out) catheterization once. Return to step 4.1.
      - If voids ≥ 200 ml, continue recording ongoing voided volumes until voids are ≥ 200 ml x 3 (step 3).
   4.3 If scanned bladder volume ≥ 500 ml, perform intermittent (in & out) catheterization once after voiding attempt.
   4.4 If still unable to void within the next 4 hours or post-void residual volume by bladder scan ≥ 150 ml, insert indwelling catheter for 24 hours.

5. Notify physician if persistent difficulty voiding by 48 hours as shown by:
   - Patient unable to void within 4 hours following catheter removal; or
   - Scanned residual volumes ≥ 150 ml x 2

6. If patient is discharged with an indwelling catheter, notify Public Health and provide follow-up instructions re: care of indwelling catheter.

BLADDERSCAN BVI 9400:

1. Turn on the scanner by pressing the POWER ON/OFF button.
2. Select scanning mode. The BVI 9400 is designed to scan in three patient-specific modes. Select the proper exam mode to ensure the accuracy of your scan. Press the button repeatedly until the desired setting appears. Please see the User’s Quick Reference laminated document located on the bladder scanner.

3. Have the patient lie in the supine position, muscles relaxed. Palpate the patient’s symphysis pubis (pubic bone). Place an ample amount of ultrasound gel (with as few air bubbles as possible) midline on the patient’s abdomen, approximately one inch (3 cm) above the symphysis pubis.

4. Aim toward the bladder. Standing at the patient’s right side, place the probe on the gel and aim toward the expected location of the bladder. For most patients, this means tilting the probe slightly toward the patient’s coccyx (tailbone) so the scan clears the pubic bone.

5. Press the SCAN button. This is located on the underside of the probe. As the scan progresses, sections of the bladder will appear on the console screen. When you hear the end-scan tone, the scan is complete.

6. Verify the scan. If the scan is ‘on target’ all eight arrows will flash on the probe screen, and the bladder will be shown in the center of the crosshair on the console screen. Since no re-aiming is needed, no arrows will appear on the console screen. If re-aiming is needed, see User’s Quick Reference located on the bladder scanner.

7. Finish exam. Once you have completed the scan, wipe the ultrasound gel off the patient and the probe.

8. Clean the probe. The probe can be wiped with hospital approved cleaner (i.e. Virox). Thoroughly dry the instrument with a clean, soft cloth.

*A bladder scan should be used in preference to catheterization in the measurement of PVR volumes.

*The BladderScan BVI 9400 is NOT intended for fetal use or for use on pregnant patients.

Risk of Inaccurate Measurements/Results
The following conditions can affect ultrasound transmission and decrease the accuracy of exam results:
- Patients who have had suprapubic or pelvic surgery
- Scar tissue, surgical incisions, sutures, and staples
- Do NOT use on a patient with open skin or wounds in the suprapubic region
- Do NOT use on a patient with ascites
- If you scan a patient with a catheter in-situ, the catheter may affect measurement accuracy. However, the information obtained from the measurement could still be clinically useful for detecting problems such as a blocked catheter.

Definitions
Postpartum Urinary Retention (PPUR): Absence of urination within 6 hours post vaginal delivery, or 6 hours after removal of an indwelling catheter (following caesarean section or previous insertion).
References

Adapted from Calgary Health Region (2008). *Women’s and infant health clinical practice guideline: bladder management in the peripartum period.*


Appendix A: Postpartum Bladder Management Algorithm

Voids within 4 hours of delivery or catheter removal

HNV or Voided < 200ml

Measure residual volume with ultrasound scanner

< 500 ml

Wait spontaneous void x 1 hr
Continue nursing measures

≥ 500 ml

I&O catheterization

Note:
Check fundus immediately after voiding.
If fundus is still high, deviated off to the side or there is an ↑ in lochial flow, the bladder likely contains urine. Follow up with ultrasound scan

Teach Self Catheterization:
- If persistent difficulty voiding by 48 hours postpartum:
  - Still unable to void within 4 hours following catheter removal
  - If scanned residual volume ≥ 150 ml X 2
- Instruct patient to continue to catheterize q 4-6 hrs until voided volumes ≥ 200 ml with residual < 150 ml x3

If still unable to void within the next 4 hours or post void residual volumes by ultrasound scan ≥ 150 ml insert indwelling catheter for 24 hours

Voided ≥ 200 ml within next 4 hours

Voided ≥ 200 ml

Ensure continues adequate voiding
Record ongoing voids until voids ≥ 200 ml X 3
Provide nursing measures

Voide ≥ 200 ml