



ACI NSW Agency
for Clinical
Innovation

ACI Urology Network – Nursing

Bladder scanning (non-real time) - Adult

Clinical Guideline

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Guidelines on Bladder scanning (non-real time) - Adult

Non-invasive, portable, hand held, battery operated, bladder ultrasound devices are a quick, safe and painless method to monitor or measure bladder volume e.g. for urinary retention and post void residual (PVR). The information gained is used to assist with assessment and management.

Use of a scanner is a less invasive method than insertion of a urethral catheter to assess bladder volume thereby reducing the risk of catheter-associated urinary tract infection (CAUTI), urethral trauma, bladder over distention and unnecessary urinary catheterisations.

Considerations

- Clinicians need to be trained in the use of the bladder scan device in order to obtain accurate results and interpret the results.
- The patient must be cooperative and able to lie still throughout the procedure.
- Use of the scanner is contra indicated in pregnancy due to the presence of amniotic fluid, ascites and in patients with open wounds in the supra pubic region.
- The bladder scanner cannot register urine volumes greater than 999mLs.
- Patients with wounds require individual assessment. Consider placing the scanner head near the recommended site either beside, above or below the sutures, surgical staples, incisions or over clear dressings, adjust the angle of the scanner head to compensate whilst considering patient comfort.
- A physical assessment i.e. percussion and palpation to assess bladder size and in and out catheterisation maybe required in some patients when there is difficulty interpreting the results. Record an accurate fluid balance chart for ongoing monitoring.
- A PVR greater than 200mLs will usually require monitoring and a repeat bladder scan. Encourage patient to double void. Acceptable PVR volumes vary and require individual patient assessment. Refer to facility guidelines.
- For advice or staff training with bladder scanners, refer to staff that are competent with the use of the bladder scanner, biomedical engineering department or supplier.
- The bladder scanner should be maintained and used according to the manufacturer's recommendations and facility guidelines. This includes periodic calibration and assessment of the scanner measurement that should be similar to the volume of urine drained from the bladder on catheterisation. Refer to operator's manual.
- Accuracy may be affected:
 - If an indwelling urinary catheter (IUC) is insitu due to the fluid filled balloon; however it may assist in determining a blocked catheter.
 - In post-partum women, the obese patient and patients with scar tissue from previous surgery, surgical staples, sutures, incisions, haematomas or fluid-filled cysts.

- Artefact and misrepresentation of the image may affect diagnosis and interpretation. For accuracy, in and out catheterisation maybe necessary if the patient has lower abdominal scars or a thick layer of subcutaneous fat.

Equipment required

- Alcohol based hand rub.
- 70% Isopropyl alcohol wipes.
- Non-sterile gloves if required.
- Tissue or paper hand towel to remove the gel.
- Bladder scanner with charged battery (spare battery should be charging).
- Printer paper.
- Ultrasound transmission gel – Do Not use lubricating jelly as it affects conductivity.

Procedure

1. Perform hand hygiene in accordance with 5 Moments for Hand Hygiene.
2. Verify patient's identity and confirm correct patient and procedure.
3. Assess patient's clinical history, symptoms and reason for the bladder scan.
4. Explain the procedure to the patient, obtain verbal consent and identify the need for a chaperone during scanning.
5. Ensure patient privacy.
6. Before taking the bladder scanner to the bedside:
 - a. Check that the battery is charged (spare battery should be charging).
 - b. Check that there is adequate paper on the roll for printing results.
 - c. Check that there is sufficient transmission gel.
 - d. Check the cables and scanner head for faults or cracks.
7. Perform hand hygiene.
8. Position the patient supine and flat with head elevated on a pillow and abdominal muscles relaxed.
9. Turn the scanner 'ON' by pressing the 'ON/OFF' button on the console and select gender. Select the 'Male' icon on the console if the female patient has had a hysterectomy, this allows the machine to exclude the uterus.
10. Ask the patient or assistant to fold back the bedclothes.
11. Place a generous amount of ultrasound transmission gel midline on the abdomen and about 3cms above the pubic bone.
12. Check the direction of the scanner head. The head of the 'human' icon on the side of the scanner head pointing towards the patients head.
13. Position the scanner head midline on the abdomen and about 3cms above the pubic bone directed slightly downward toward the patient's coccyx to clear the pubic bone.
14. **Do not move** scanner head while scanning.
15. Press and release the scan button on the side of the scanner head. The scan is complete when a beep is heard and the volume is displayed on the screen.

16. The scan is on target when the bladder image is centred on the **crosshairs** on the screen.
17. Repeat the bladder scan to obtain two to three readings.
18. Press the 'Done' button and check the image on the screen.
19. Seek advice if there is discrepancy between the result and clinical symptoms from staff competent in using the bladder scanner and interpreting the results.
20. Press the 'Print' button to print the result if applicable and turn off the device.
21. Wipe transmission gel from the patient and the scanner head.
22. Cover the patient and ensure patient comfort.
23. Clean the scanner head, console and trolley, if applicable with 70% isopropyl alcohol wipes only and place the scanner head into the correct slot on the trolley if applicable.
24. Dispose of waste according to facility policy.
25. Perform hand hygiene.
26. Write patients name, MRN, time and date on printed result.
27. Document or tape the printed result into the patient clinical progress notes and fluid balance chart if applicable.
28. Perform hand hygiene.
29. Report results to the team doctor if necessary.
30. Follow the facility's Infection Control and Prevention Policy.
31. Follow the facility's Manual Handling WH&S Policy.
32. Follow manufacturer's instructions to set up the scanner.

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Appendix 1.

Clinical Skill Assessment Form: Bladder scanning (non-real time) - Adult

Name of Assessee

Signature of Assessee

Ward/Location

Date of Assessment

Name of Assessor

Signature of Assessor

Performance Criteria		
Professional Attitude and Patient Communication.	Yes	No
Introduced self to patient.		
Explained that the procedure is being observed and assessed.		
Gained verbal or inferred consent from the patient.		
Addressed any patient concerns that may have arisen during the procedure.		
Performance Criteria		
Patient Assessment and Planning.	Yes	No
Explained the procedure to the patient.		
Stated indications and reasons for the bladder scanning.		
Followed the requirements for patient preparation – as per facility policy.		
Identified and planned for potential difficulties.		
Performance Criteria on Procedure		
Use of the Bladder scanner	Yes	No
Performed hand hygiene.		
Prepared equipment. Checked battery, scanner head and paper.		
Performed hand hygiene.		
Provided privacy, positioned patient in the supine position, with head		

elevated on a pillow and abdominal muscle relaxed and continually reassured the patient during the procedure.		
Turned the scanner 'ON' by pressing the 'ON/OFF' button on the console and selected gender.		
Exposed the lower abdomen.		
Palpated the pubic bone and applied a generous amount of transmission gel, midline on the abdomen and about 3cms above the pubic bone.		
Aligned the scanner head correctly, i.e. the head of the 'human' icon on the side of the scanner head pointing towards the patients head.		
Placed the scanner head on the transmission gel about 3cm above the symphysis pubis and directed it slightly downward toward the patient's coccyx (tail bone) to clear the pubic bone.		
Asked the patient not to move and kept the scanner head still while scanning.		
Pressed and released the scan button on the side of the scanner head. The scan is complete when a beep is heard and the volume is displayed on the screen.		
Assessed the bladder image and the bladder volume on screen. The scan is on target when the bladder image is <i>centred on the crosshairs</i> on the console screen.		
Re-aimed and rescanned the bladder if necessary for a more accurate result.		
Pressed the 'Done' button and checked the image on the screen.		
Pressed the 'Print' button to print result if applicable and turned off the device.		
Wiped transmission gel from the site and the scanner head and then covered the patient and ensured patient comfort.		
Cleaned the scanner head, console and trolley (if applicable) with 70% isopropyl alcohol wipes only and ensured the head of the scanner is protected by placing it into the correct slot on the trolley if applicable.		
Performed hand hygiene.		
Writes patient's name, MRN, time and date on printed result.		
Documented or taped the printed result into the patient clinical progress notes and fluid balance chart if applicable.		
Reported results to the team doctor if necessary.		

Performance Criteria		
WH&S Issues Identified and Applied.	Yes	No
Identified the following aspects of WH&S and performed a risk assessment prior to performing the bladder scan.		
Positioned patient to minimise need to twist, bend or maintain awkward position. Obtained assistance if required.		
Maintained clean technique.		
Use of personal protective equipment (facial protection, gown/apron, gloves).		
Correctly disposed of waste.		
Performed hand hygiene in accordance with 5 Moments for Hand Hygiene.		

Agreement: Clinical Skill Assessment

Competency Performance on bladder scanning (non-real time) – Adult:

Knowledge on bladder scanner procedure

- Satisfactory _____
- Unsatisfactory _____

Bladder scanning Skill

- Satisfactory _____
- Unsatisfactory _____

Comments by Assessor:

Comments by Assessee (reflection of learning):

Clinical Assessor (print name): _____

Signature _____

Date: _____

Assessee (print name): _____

Signature: _____

Date: _____