

**Portable Bladder Scanner**  
**Self-Learning Module**  
**for**  
**Regulated Nurses**  
**(RN, RPN, LPN)**



**BVI 9400**



**BVI 6100**



**BioCon 700**

## Introduction

Bladder scan is a minimally invasive method for assessing urinary function. Because bladder scan readings have been shown to be very accurate when performed correctly, it is increasingly being used in care settings for bladder management programs.

There are three different bladder scanner models at Carewest. Some care units use the BVI 6100 (hand held), some units use the BVI 9400 (console on wheels) and some units BioCon 700 (console on wheels). All three models are featured on the front cover. Basic operation of the models is similar; differences between the models are noted in this module.

Due to the nature of bladder scanning (ultrasound waves penetrate the dermis), bladder scanning is considered a restricted activity. As a result, all regulated nurses must complete this self-study module and a successful return demonstration before they are allowed to perform the procedure independently.

## Module Objectives

- Review anatomy of the urinary tract
- Understand the reasons for using a bladder scanner
- Demonstrate how to measure post void residual volume (PVR) using a bladder scanner
- Know when an order for bladder scanning must be obtained and when to notify the physician
- Know how to document
- Know how to charge the battery
- Know how to clean the bladder scanner

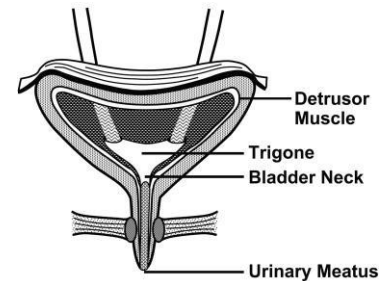
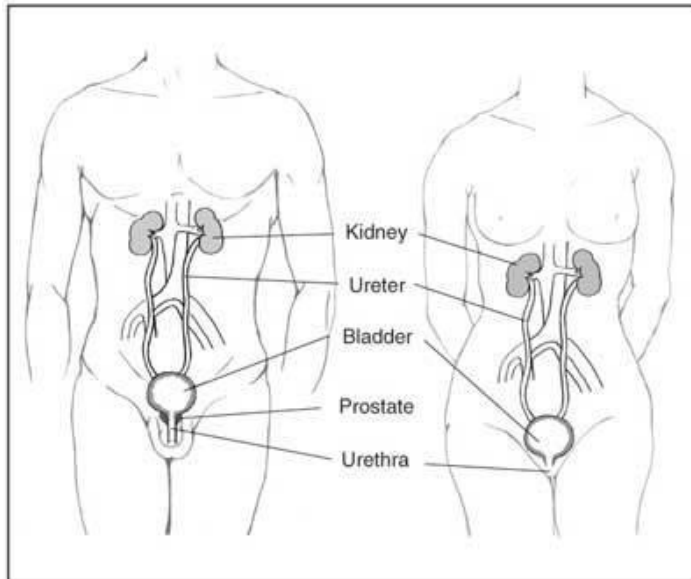
## Roles and Expectations

- Bladder scanning is a regulated nurse function
- An order for bladder scanning must be obtained from a physician or nurse practitioner except for urgent situations
- Before performing a bladder scan independently, regulated nurse must:
  - Read this Bladder Scanner training module
  - Read Carewest Policy CS-02-03-12 Portable Bladder Ultrasound
  - Perform a return demonstration of the skill to Educator or designate

## Bladder Scanner:

- A portable ultrasound that measures the volume of urine in the bladder
- Quick and easy to use
- Minimally invasive
- Allows client comfort and dignity

## Review of Urinary System



## Why Use a Bladder Scanner?

- Assess reasons for urinary incontinence
  - A common cause of urinary incontinence is urinary retention
- Assess for urinary retention
  - Bladder does not empty completely by voiding
  - Signs and symptoms of urinary retention: unable to void, urinary incontinence, urinary frequency, urinary urgency, feeling of a full bladder after voiding, palpable bladder
- Determine post void residual volume (PVR) and total bladder volume (TBV)
  - PVR is the amount of urine left in the bladder after voiding
  - TBV is the amount of void plus the PVR
- Assess the need for in and out catheterization
- Reduce urinary tract infection (UTI)
  - Urinary retention can cause UTIs
  - Unnecessary catheterization can increase the risk of UTI

## Getting the Client Ready

- Explain the procedure to the client
- Have the client void no more than 15 minutes before scanning for PVR
- Ask the client to lie flat or in a semi-fowlers position
- Expose the lower abdomen



## Using the Bladder Scanner

- Check that the scanner is in good working order and that there are no cracks in the casing, etc.
- Clean the scan head with an Accel Prevention Cleaner/Disinfectant wipe before use
- On the scanner, select gender M (male) or F (female). Choose the Male setting for females who have had a hysterectomy
- Apply approximately 30ml of water soluble gel about 4 cm above the symphysis pubis. If scar tissue or dressings are in this location, apply gel to either side, above or below the affected area. Use only on intact skin
- Smooth the gel with scan head to remove air bubbles
- Place the scan head on the gel and apply light pressure while aiming slightly downwards toward the coccyx
- Press and release the scan button; hold the scanner steady
- Scanner beeps when the scan is completed
- Verify the aim

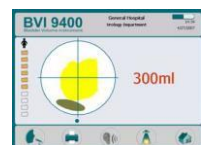
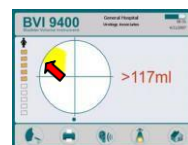
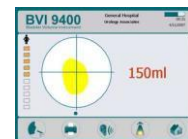
### BVI 6100 (hand held)

- **Accept scan** - solid arrows or no arrow on the scanner
- **Re-aim scan** - flashing arrow below the measurement indicates that the bladder was not completely scanned. Re-aim the scan head in the direction of the arrow and repeat



### BVI 9400 (console on wheels)

- **Accept scan** - bladder is centred on the console screen crosshairs and all 8 arrows are flashing on the scan head
- **Re-aim scan** - solid arrow means that the scan is slightly off- target. Flashing arrow means that the scan is significantly off- target (shown on the scan head and the console screen). Re-aim the scan head in the direction of the arrow and repeat
- Pubic bone on the console screen means that you need to re- aim the scan head until the pubic bone is no longer on the screen
- Wipe the gel from the client's abdomen and from the scan head with a tissue
- Clean the scan head with an Accel Prevention Cleaner/Disinfectant wipe
- Document

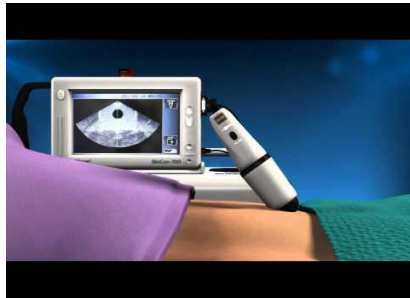


## BioCon-700

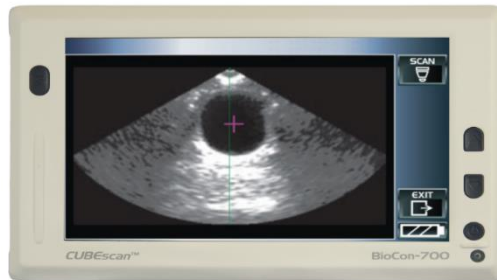
- Ensure probe is aligned with client's position. Small horizontal figure on the probe must align with client's body position. Head toward client's head and feet to client's feet.



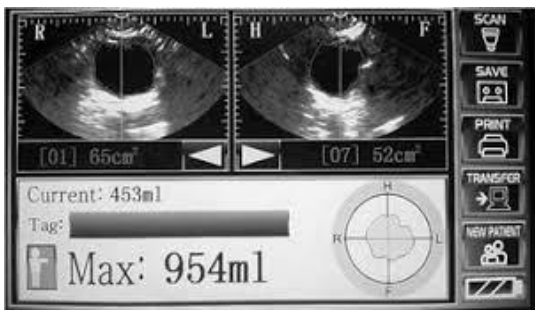
- Place gel applied probe on client's lower abdomen and aim toward bladder.



- Press scan button to start pre-scan mode and locate bladder. Pre-scan function shows a live bladder image.



- When the bladder image on the screen appears to be at its most prominent then press the scan button for actual bladder scan.



Option to save on a SD card or print results.



**NOTE: Store the probe with the probing surface pointing upward to prevent damage to the device.**

## Gels

- Ideally single-use, individual packets of gel are to be used. These packets are used for one scan and discarded
- If your site/unit is using multi-use medical ultrasound gel, make sure to follow these steps
  - Inspect gel container for leaks or cracks and discard any cracked or leaking containers
  - Record the opening and expiry date on the bottle; expiry date is 30 days from the date of opening the bottle
  - Wipe the tip of the nozzle with an alcohol wipe before using
  - Ensure that the tip of the bottle does not touch the client's skin or any other surfaces when applying the gel
  - Wipe the gel bottle with an Accel Prevention Cleaner/Disinfectant wipe after use

## Documentation

Document on the **Total Team Record** and any other document used on your unit. Include:

- how the client tolerated the bladder scan
- total bladder volume and/or post void residual
- time physician was notified
- any actions you took

## Notifying the Physician

Follow the physician's order or unit protocol to identify specific volumes and interventions. If there is no physician's order or protocol, notify the physician when urinary retention is suspected or when the PVR volume is **greater than 300ml**

## Quality Assurance Program (QA)

- Physical Plant Services (PPS) schedules a QA at least annually to ensure calibration of the scanner
- Any scanner that cannot be calibrated is removed from service

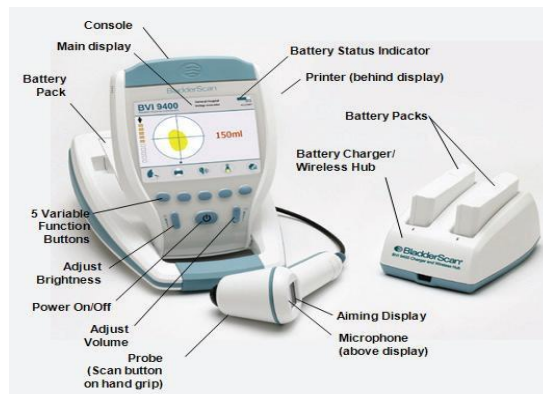
## Charging the Battery

### BVI 6100 (hand held)



- The BVI 6100 battery recharges when the hand held instrument is in the battery charger
- Store the scanner in the charger to make sure it is charged at all times
- If the battery is completely discharged, press “ACTIVATION” button before charging

### BVI 9400 (console on wheels)



- The battery fits into a slot at the back of the console under the screen
- The BVI 9400 comes with 2 rechargeable battery packs and a battery charger
- The battery can be recharged at any time

**\*\*\*Do not remove the battery while the scanner is turned on!**

### BioCon 700

- Ensure unit is plugged in when not in use.
- If Battery is not charging notify PPS.



## **Cleaning the Bladder Scanner**

Wipe the scanner before and after each use with an Accel Prevention Cleaner/Disinfectant wipe

## **Resources**

Carewest Policy CS-02-03-12 Portable Bladder Ultrasound

Health Professions Act. Accessed 2014-08-26 at [www.health.alberta.ca/professionals/regulated-professions.html](http://www.health.alberta.ca/professionals/regulated-professions.html)

ROXON.ca, How to Use Quick Guide For Cubescan (BioCon 700 Bladder Scanner)

Verathon Medical, Quick Reference for Bladder Volume (BVI 6100 & BVM 6500)

Verathon Medical, BVI 9400 User's Quick Reference