Urinary Retention: Nursing Management (Adults & Pediatrics)

Quick Links:

- Bladder Scan Procedure
- Intermittent Urinary Catheter, Procedure for Insertion (aseptic technique) (in Acute)
- Clean Intermittent Catheter (CIC), Insertion Procedure (in Community)
- Appendix A: Treatment for Urinary Retention Algorithm in Adults

Site Applicability

All VCH Acute and Community sites

Practice Level

RN: Basic Skill:

- Assessment of risk factors relating to urinary retention
- Assessment of bladder fullness using a bladder scanner or physical assessment
- Interpretation of post-void residual volume

Advanced Skill:

- **Performance of a Nurse Initiated Activity (NIA)** (see NIA/NIP Policy) is an advanced skill requiring additional education. Education includes CCRS NIA Course.
  - The following NIA has been approved for use in **acute sites only**:
    - Intermittent Urinary Catheter, Procedure for Insertion (aseptic technique), including use of lidocaine 2% jelly.
    - Assessment of benefit to patient and exclusion criteria for independent practice to catheterize the patient using an intermittent catheter

RPN, LPN: Basic Skill

- Insertion of an intermittent urinary catheter by an LPN or RPN requires an order from a physician or nurse practitioner.

Policy Statement

- A consult with an urologist or attending service (as per Urology specialty at VCH) is required when there is a history of the following. Do not catheterize without consulting if the patient has/had:
  - Radical prostatectomy within 6 weeks
  - Urethroplasty or other urethral surgery within 6 weeks
  - Urethral/Bladder trauma within 6 weeks
  - Presence of an artificial urinary sphincter
- Incontinence surgery (sling) is not a contraindication for urinary catheterization.
- Urinary catheterization for confirmation and treatment of urinary retention should only be used if all non-invasive strategies have failed.
- Intermittent catheterization should be the first type of catheter inserted. There is a lower risk of urinary infection compared to indwelling urinary catheters.[12]
- NIA at approved sites (e.g. Acute care sites):
  - Where a nursing disagnosis of urinary retention is made RNs are authorized to perform intermittent catheterization a total of 2 times as an NIA. Notify the appropriate healthcare provider of the initiation of the NIA.
  - Urinary retention that is not resolved with 2 intermittent catheterization attempts, requires follow up with a physician or other health care professional (i.e. nurse practitioner, nurse continence advisor where available). See Appendix A: Treatment for Urinary Retention Algorithm.

- For sites where NIAs are not approved or for nurses who are unable to perform NIAs, if urinary catheterization is require to treat urinary retention an order should be obtained from a physician or nurse practitioner.
- If resistance is met when inserting catheter, stop and consult physician or nurse practitioner.
- Sites that do not have a bladder scanner available will use clinical judgment and physical assessment skills to determine need for catheterization.

Need to Know

Definitions	
Acute Urinary Retention	• The sudden inability to pass urine. • Present as complete lack of voiding, incomplete bladder emptying or overflow incontinence.[8] • Treated as a medical emergency as back pressure of urine building up in the ureter and kidneys can cause renal damage and/or bladder dysfunction.[7] • Typically pain is felt in the pelvis and/or abdomen. • If the patient who is unable to communicate, or is confused has sustained pelvic trauma, and/or is receiving postoperative epidural anesthesia, it may present as extreme restlessness, agitation, diaphoresis, or new hypertension in patients without a history of hypertension.

Autonomic Dysreflexia (AD)	• Potentially life threatening syndrome characterized by hypertension that can be experienced by persons with spinal cord injury at the T6 level or above (some cases in persons with injury as low as T8 have been reported).
	• Can be caused by irritating stimuli below the level of the spinal cord injury including urinary retention.
	• The key to resolving AD is treating the underlying cause.
	• If a patient is exhibiting evidence of AD and has no medical orders to manage AD then:
	  ○ In acute settings or community setting with MD/NP immediately available, contact the MD/NP for directions or orders.
	  ○ In community settings with no MD/NP immediately available, call 911.

Chronic Urinary Retention or Ongoing Retention	• Patient is able to void but unable to empty bladder completely, resulting in a moderate to large volume (300 to 500 mL) of residual urine[7,11] but many sources cite varying volumes. • A compromised ability to completely empty the bladder that gradually develops over several months or even years. • The patient may present with frequent, small volume voids and urinary leakage during activities associated with increased abdominal pressure. • The patient is often unaware of the problem. • The volume of residual urine may slowly increase over time. • The most common causes are benign prostatic hypertrophy and neurogenic processes such as diabetic cystopathy (decreased innervations to the bladder).
Clients living at home with chronic urinary retention often self manage with scheduled intermittent self-catheterization. When admitted to acute care, if their clinical condition permits, efforts should be made to continue with client's home schedule for intermittent self-catheterization.	

Neurogenic Bladder	• Loss of normal bladder function caused by neurologic dysfunction resulting from disease, insult or trauma to the brain, spinal cord, spinal nerves and/or peripheral nerves. The damage causes reflexic (spastic) or areflexic (flaccid) bladder muscles and/or discoordination of bladder muscles and sphincter relaxation (detrusor sphincter dyssergia) presenting as retention or incontinence. • The damage can cause the bladder to be unable to contract and empty completely, contract too frequently without the ability to inhibit the urine flow or the inability to coordinate bladder contractions with sphincter relaxation known as detrusor sphincter dyssynergia (DSD).[9] • Saddle Distribution: Numbness in the saddle region (perineal area, S2 to 4) associated with flaccid/atonic bladder.
Post Void Residual (PVR)	• Volume of urine remaining in the bladder after voiding. • Repeated abnormal PVR readings are an indication of voiding dysfunction or bladder outflow obstruction.
Urodynamic Studies	• Bladder function test evaluating the lower urinary tract, capacity, pressure and ability to empty.[7] Must be ordered by urology.

History and Causes		
Type of Retention	**Causes and Frequency**	**Related to:**
Obstructive	• Obstruction of the lower urinary tract at or distal to the bladder neck.	• Most common is outlet obstruction due to benign prostatic hyperplasia (BPH) especially in males over age 70[12] • Urethral stricture[12] • Urethral stones • Prostate cancer • Benign or malignant pelvic, uterine, or gastrointestinal masses • Pelvic organ prolapse – cystocele or rectocele • Fecal impaction
Pharmacologic	• Medication: Combination of medication interactions and side effects • Duration of affects	• Opioids: affect detrussor or sphincter control.[6] • Anesthetic agents[12] • Anticholinergic medications[12] • Anti depressants • Anti histamines • Anti hypertensives • Anti parkinsonians • Anti psychotics[12] • Muscle relaxants • NSAIDS[8] This list is not exhaustive and other classes of medications can cause urinary retention.
Other	• Perioperative factors • Pregnancy related factors • Trauma • Epidural Infusion at T11, L1, L2 and L3 • For epidurals above T10 the indwelling catheter may be removed before epidural is removed • Intrathecal or epidural anesthetics or analgesics	• Perioperative factors include – Type and length of surgery • Anesthesia[12] • Use of intraoperative opioids such as intrathecal morphine can have effects lasting 16 to 18 hours. • Lumbar Epidural, below T11 is **more likely** to result in urinary retention and may have a doctor's order for an indwelling catheter • Pain • Decreased mobility due to injury or surgery
Neurologic	• Normal functioning of urinary tract is reliant on the interaction between the autonomic nervous system, the brain and the nerves that supply the urinary system including the bladder and urethra. Dysfunction along these pathways may result in partial or complete retention or incontinence. • Detrussor muscle hyporeflexia	• Spinal cord disease such as tumors, spinal stenosis • Spinal tumors • Spinal cord injury (surgical or non surgical) [12] • Pelvic fractures • Diabetes with Peripheral neuropathy • Neurological diseases such as Multiple Sclerosis, Guillian-Barré Syndrome[12] • Stroke[12]
Infectious or Inflammatory	• Caused by urethral edema	• UTI or cystitis • Acute Prostatitis • Urethritis from UTI or Sexually transmitted infection • Vulvovaginitis • Postpartum inflammation or pain

Practice Guideline

A. Assessment	

General Patient Assessment/ History	• Review patient medical history for contributing factors to urinary retention as above and including the following:
	  ○ Assess if patient has a previous history of voiding dysfunction or retention or frequent UTI's
	  ○ Assess whether patient has home schedule of intermittent self-catheterization.
	  ○ Cognitive impairment (e.g. inability to communicate bladder distention symptoms)
	  ○ Assess for alterations/impairment of perineal sensation in the saddle distribution and when passing catheter
	  ○ Administration of intravenous fluids (e.g. volume of infusion)
	  ○ Childbirth
	  ○ Constipation
	• Consider whether the client has a care plan for chronic urinary retention that specifies their usual bladder volume.

Physical assessment for urine retention	• Gently palpate the suprapubic area. A normal bladder should not be detectable, but a smooth round tense mass may be palpable if the bladder is distended.[10,13] A percussed full bladder will sound dull and may extend up into the umbilicus.[10,13] • For patients unable to void at all – Bladder scan for bladder volume Q4 to 6 hours and PRN • Follow Clinical Skills for Bladder Scan *(Clinical Skills provides an overview of the process for performing a bladder scan)*. Refer to the user guide of your particular model of bladder scanner for specific user instructions. • For patients who void incompletely, assess PVR.
B. Treatment/Interventions	

Acute Urinary Retention Strategies	• Consider all non-invasive strategies to encourage voiding (to prevent urinary retention).
	  ○ early post-op ambulation
	  ○ have patient sitting on commode or toilet as able
	  ○ provide privacy
	  ○ run tap in room
	  ○ encourage adequate fluid intake
	  ○ decrease narcotic use as able

Chronic Urinary Retention Strategies	• Review non invasive strategies with client
	  ○ Preparation enabling access to toileting facilities: ensure clients' toilet is at correct height when seated; feet should be flat on the floor to maximize bladder emptying. Regulating fluid intake and avoid evening drinking.
	  ○ Reducing alcohol intake.
	  ○ Reducing tea and coffee intake.
	  ○ Teach bladder retraining and regular voiding.
	• Discuss with GP / Specialist physician / nurse practitioner / continence advisor / wound, ostomy and continence nurse:
	  ○ Review potential pharmacological causes and discuss continuation
	• Identify pharmacological strategies to increase bladder tone / assist bladder emptying (e.g. tamsulosin)
	• If chronic retention persists, intermittent self-catheterization is preferable to long-term catheterization because:
	  ○ Reduced risk of urinary tract infections
	  ○ Self-catheterization has less impact on those who are sexually active

<table>
<tr><th>Age</th><th>If urinary volume is greater than</th><th>Acute</th><th>Community</th></tr>
<tr><td>Greater than 17 Years</td><td>400 mL</td><td>• Refer to Appendix A (Treatment for Urinary Retention Algorithm-Adult)
• For VGH Acute Spine Program patients only, refer to Appendix B (Acute Spine Bladder Management Algorithm)
• Refer to Procedure for Intermittent Urinary Catheter</td><td>• Refer to Appendix A (Treatment for Urinary Retention Algorithm-Adult)
• Contact most responsible physician or NP If intermittent urinary catheterization is ordered, refer to CIC – Insertion Procedure in Community</td></tr>
<tr><td>13-17 Years</td><td>400 mL</td><td colspan="2" rowspan="3">• Contact most responsible physician or NP
• If urinary catheterization is ordered, refer to BC Children's Hospital: Intermittent Urinary Catheterization</td></tr>
<tr><td>2-12 Years</td><td>¼ Expected Bladder Capacity[14]
EBC mL = [(age in years / 2) + 6] X 30mL
Example for 4 year old:
[(4 / 2)+6] X 30mL = 240mL EBC
¼ EB C = 240mL / 4 = 60mL</td></tr>
<tr><td>Less than 2 Years</td><td>¼ Expected Bladder Capacity[14]
EBC mL = [(age in years X 2) +2] X 30mL
Example for 6 month old:
[(0.5 X 2)+2] X 30mL = 90mL EBC
¼ EBC = 90mL / 4 = 22.5mL</td></tr>
</table>

Specific Strategies for Treatment of Acute Retention	

Intermittent Catheterization	• Topical lidocaine 2% jelly may be used for maximum patient comfort in adults. Lidocaine in males also helps with dilation and ease with insertion. Refer to Procedure for Intermittent Urinary Catheter: NIA: Use of lidocaine 2% jelly prior to urinary catheterization or obtain an order from a physician or nurse practitioner.
	• Consult the physician or appropriate health care professional if:
	  ○ attempted intermittent catheterization is unsuccessful or,
	  ○ urinary retention is unresolved after 2 straight intermittent catheterizations
	• Refer to Appendix A for Treatment for Urinary Retention Algorithm.

Male patients with a history or risk of BPH	• Physician assessment with possible referral to urology. The physician may consider starting the patient on Alpha blocker with reinsertion of indwelling catheter for 5 to 7 days followed by a 2nd trial of voiding.[7,8] • The patient may require further diagnostic studies (e.g. Urodynamic studies).
For patients at risk for partial bladder emptying and post indwelling catheter removal	• For patients who are voiding small amounts, measure Post Void Residual Volume immediately using a bladder scan.
For patients with possible neurogenic bladder	• Institute bladder retraining/Intermittent catheterization program when there is patient or caregiver ability and in absence of contraindications e.g. strictures, small bladder capacity. • Condom catheters to manage urine leakage/reflex voiding between catheterizations for patients with spastic bladders. • Medications (alpha blockers, botulinum toxin injections) to increase bladder capacity or decrease uninhibited contractions.[3]
Urinary Tract Infection	• UTI's may initially cause urinary retention but will resolve with antibiotic treatment • Consider using topical lidocaine 2% jelly for maximum patient comfort. Refer to Procedure for Intermittent Urinary Catheter: Appendix A: NIA: Use of lidocaine 2% jelly prior to urinary catheterization or obtain an order from a physician or nurse practitioner.

Expected Patient/Client/Resident Outcomes

Intended Patient Outcomes

- Urinary retention will be relieved with either non-invasive or straight intermittent catheterization. The patient will remain free of urethral trauma and/or infection.

Unintended Patient Outcomes

- Unsuccessful attempt at urinary catheterization
- Traumatic injury to the urethra
- Unresolved urinary retention
- UTI post urinary catheter insertion

Patient/Client/Resident Education

- Kegel exercises (*pending*)
- Bladder Function Test (FP.114.Ur6)
- Self Catheterization & You (FP.157.548)
- Urinary Catheter: Care & Removal at Home (FP.157.In71)

Evaluation

- Urinary retention is relieved
- Prevent or reduce the risk of catheter-associated UTI and urethral trauma

Documentation

Fluid Balance – PVR, Amount voided

- Document amount of void to indicate voiding volume
- Record PVR volume (bladder scan)
- If intermittent catheter required, record urine amount
- Document PVR and residual volume whatever the care site uses to record fluid balance. For example, on Vancouver Acute Care 24 Hour Fluid Balance Record, document PVR volume (bladder scan) using second output column (mark as PVR/Bladder Scan), use 3rd output column to indicate Intermittent catheter (mark it as Residual/I.C)

Site Specific practices: VGH Spine Program

Bladder Management Record

- Refer to Bladder Record (VCH.VA.0094) for recording "Voided/Urinary Bag", "PVR/Bladder Scan", "Residual/I.C"

Document in appropriate flowsheet or progress notes as per site practices

- Initial and ongoing assessment
- Interventions and response to treatment
- Catheterization process (type of catheter, size and number of attempts)
- Description of drainage (i.e. colour, odour, clarity)
- Client outcomes
- Client teaching
- Consultation with Physician or appropriate health care professional and any related orders for ongoing management

NIA

- Document the NIA as per Intermittent Urinary Catheter, Procedure for Insertion (aseptic technique).

Related Documents

- Intermittent Urinary Catheter, Procedure for Insertion (aseptic technique)
  - Appendix A: NIA: Use of lidocaine 2% jelly prior to urinary catheterization
- Indwelling urethral catheter, Procedure for Insertion and Removal
- Clean Intermittent Catheter (CIC), Insertion Procedure (in Community)
- Nurse Independent Activities (NIA) and Nurse-Initiated Protocols (NIP) Policy

Vancouver Acute: Delirium: Screening, Assessment and Management

Clinical Skills: Bladder scan

References

1. Casey, G. (2011). Incontinence and Retention-How the Bladder Misfunctions. Kai Tiaki Nursing New Zealand. 17 (7), pg. 26–31.
2. Clinical Policy Office and Nursing Professional Practice Council. (2011). Practice Guideline: Urinary retention (Adult) – Registered Nurse Initiated Management. Fraser Health Authority.
3. Consortium for Spinal Cord Medicine. (2006). Bladder Management for Adults with Spinal cord Injury: A Clinical Practice Guideline for Health-Care Providers. Retrieved March 3, 2014 from www.pva.org
4. Doughty, Dorothy. Urinary & Fecal Incontinence. Current Management Concepts. 3rd Ed. St. Louis: Mosby Elsevier, 2006, pp. 225-226.
5. Haylen, B.T. (2008). Management of Abnormal Post-Void Residual. Australian and New Zealand Continence Journal. 14 (3), pg. 68–69

6. Ladak, S.S., Katznelson, R., Muscat, M., Sawhney, M., Beattie, W.S., O'Leary, G., (2009). Incidence of Uirnary Retention in Patients with Thoracic Patient-controlled Epidural Analgesia (TPCEA) Undergoing Thoracotomy. Pain Management Nursing. 10 (2) pg. 94-98.
7. Steggall, M.J. (2007). Acute Urinary Retention: Causes, clinical Features and Patient Care. Nursing Standard. 21 (29) pg. 42-46.
8. Selius, B.A., Subedi, R. (2008). Urinary Retention in Adults: Diagnosis and Initial Management. Retrieved October 29, 2013 from American Family Physician Website at https://www.aafp.org/afp/2008/0301/p643.html
9. Urology Care Foundation. (2011). Neurogenic Bladder. Retrieved February 27, 2014 from https://www.urologyhealth.org/
10. Seidel, H.M., Ball, J.W., Dains,J.E., and William Benedict, G. (1995) Mosby's Guide to Physical Examination p 501. 3rd ed Mosby St Louis.
11. Kaplan SA, Wein AJ, Staskin DR, et al. Urinary retention and post-void residual urine in men: separating truth from tradition. Journal of Urology. 2008 Jul;180(1):47-54. PMID 18485378.
12. Mangnall, J., (2012). Key consideration of intermittent catheterisation. British Journal of Nursing, 21(7).
13. Williams, L.S., Hopper, P.D. (2017). Understanding Medical-Surgical Nursing. 4th Ed. Philadelphia: F.A. Davis Company, pg 832.
14. BC Children's Hospital. Treatment of Acute Urinary Retention Registered Nurse Initiated Activity. Retrieved March 1st, 2017 from http://policyandorders.cw.bc.ca/resource-gallery/Documents/BC%20Children's%20Hospital/CC.15.05%20Treatment%20of%20Acute%20Urinary%20Retention%20Registered%20Nurse%20Initiated%20Activity%20(RNIA).pdf

Developed by

CPD Developer Lead(s):

Practice Initiatives Lead, Professional Practice Nursing, VA
RN BScN, Clinical Quality & Safety Coordinator, (NSQIP)

Other members:

Anesthesiologist, Anesthesia Services, VA
Clinical Educator/PCC ABI program, GFS
Clinical Nurse Educator /PCC, Solid Organ Transplant, VGH
Clinical Nurse Educator, Acute Spine, VGH
Clinical Nurse Educator, Clinical Staffing, VGH
Clinical Nurse Educator, Neurosciences, VGH
Clinical Nurse Educator, Professional Practice Nursing, VA
Clinician and nurse continence advisor, Purdy, UBCH
Clinician, Emergency Department, LGH
Continence Management, Nurse Continence Advisor, VC
Nurse Continence Advisor, Ambulatory, RH
Orthopaedic-trauma, Clinical Nurse Educator, VGH
Practice Initiatives Lead, Professional Practice Nursing, VA
Practice Initiatives Lead, Professional Practice Nursing, VC
Regional Residential Quality Practice Council
RN, Clinical Quality & Safety Coordinator (NSQIP)
Urologist, Dept of Urology Services, VA

Endorsed by

(Regional SharePoint 2nd Reading)

Health Authority Profession Specific Advisory Council Chairs (HAPSAC)
Health Authority & Area Specific Interprofessional Advisory Council Chairs (HAIAC)
Operations Directors
Professional Practice Directors

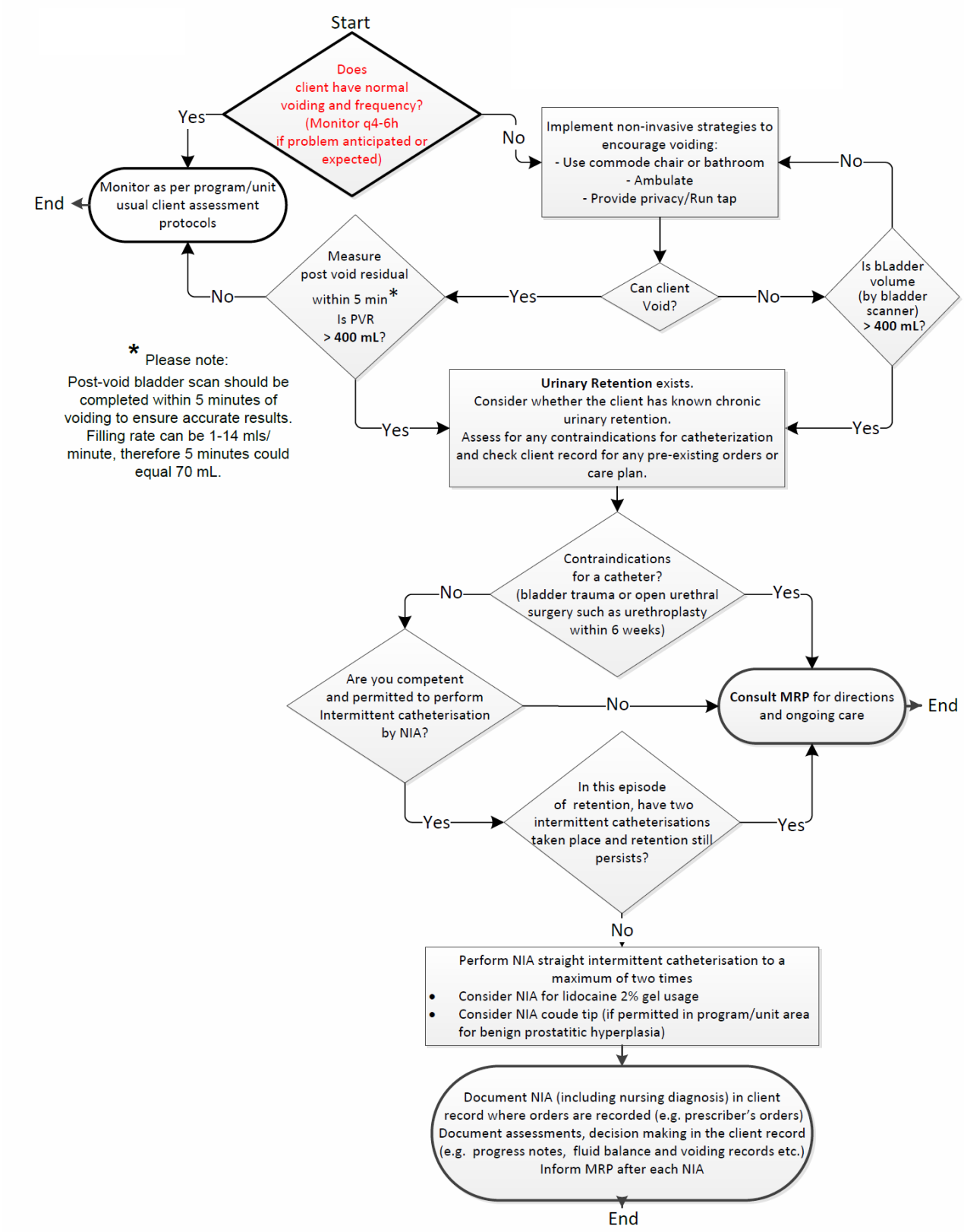
Final Sign-off & Approved for Posting by

Vice President Professional Practice and Chief Clinical Information Officer, VCH

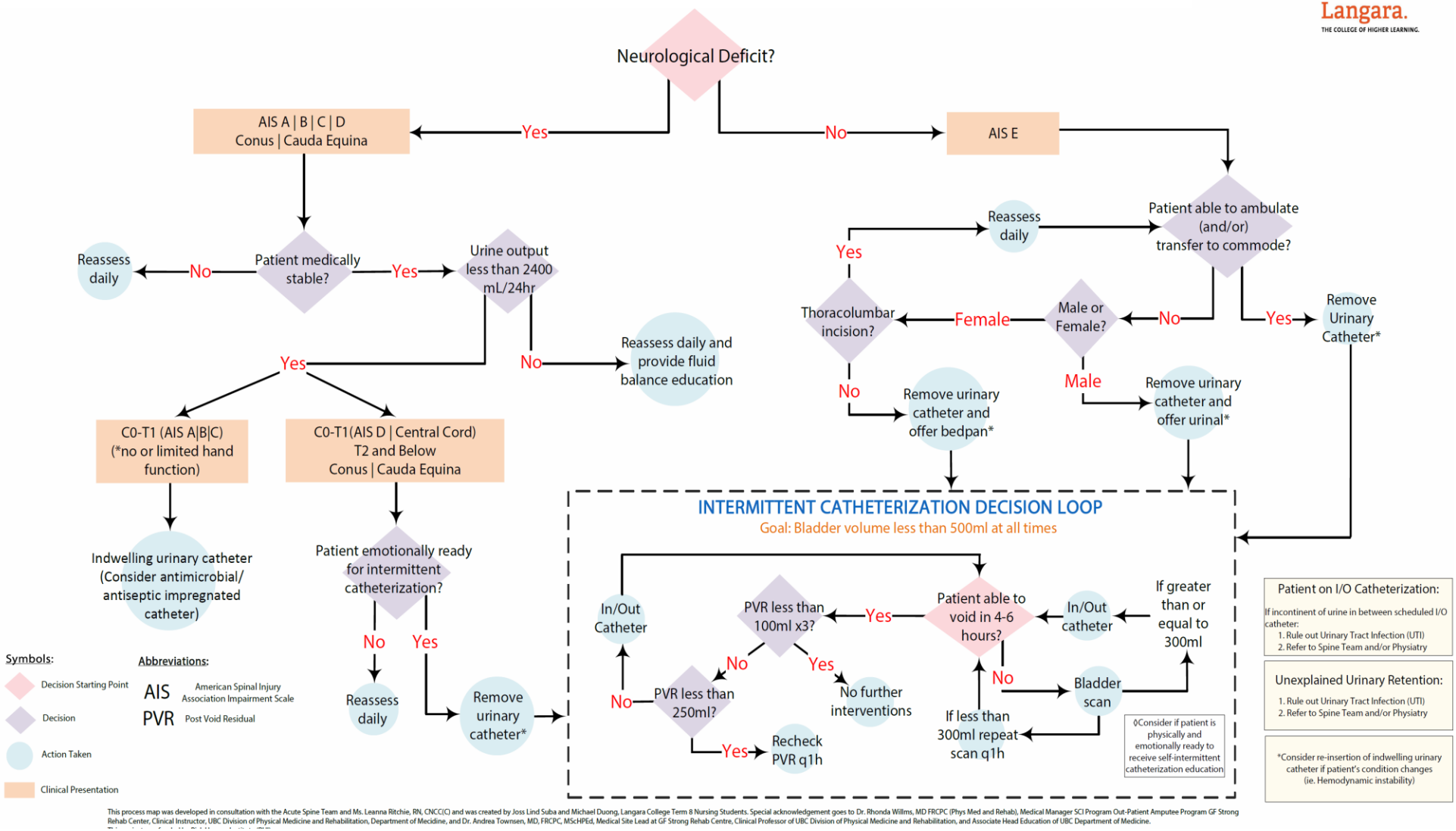
Date of Approval/Review/Revision

Approved: July 17, 2017
Posted: July 17, 2017
Revision: March 2, 2023 – updated Delirium link

Appendix A: Treatment of Urinary Retention Algorithm for Adults



Appendix B: VGH Acute Spine Bladder Management Algorithm for Acute Spine Program Patients



This process map was developed in consultation with the Acute Spine Team and Ms. Leanna Ritchie, RN, CNCC(C) and was created by Joss Lind Suba and Michael Duong, Langara College Term 8 Nursing Students. Special acknowledgement goes to Dr. Rhonda Willms, MD FRCPC (Phys Med and Rehab), Medical Manager SCI Program Out-Patient Amputee Program GF Strong Rehab Center, Clinical Instructor, UBC Division of Physical Medicine and Rehabilitation, Department of Mecidine, and Dr. Andrea Townsen, MD, FRCPC, MScHPEd, Medical Site Lead at GF Strong Rehab Centre, Clinical Professor of UBC Division of Physical Medicine and Rehabilitation, and Associate Head Education of UBC Department of Medicine.