UroOncology Rotation Handbook

Introduction to the UroOncology Rotation

Urologic urology is a specialized field within urology that focuses on the diagnosis, treatment, and management of genitourinary malignancies. For a urology resident, gaining experience in urologic oncology is essential not only to understand how to surgically and medically manage common malignancies, such as prostate, urothelial, and renal cancer, but also to develop skills in communicating with patients and their families, managing complex multidisciplinary cases of rarer GU tumours (ie. penile and testis cancer), and mastering surgical approaches (open, laparoscopic, and robotic).

Contents

Rotation Specific Objectives

Medical Knowledge

1. Develop an understanding of the pathophysiology and diagnosis of inflammatory and infectious conditions as they pertain to the urological patient. It is especially important to learn to distinguish benign from malignant etiologies for the same symptoms (e.g. hematuria, red patch in bladder, penile rash, etc…).
2. Develop an approach to the management, follow-up and monitoring (for potential complications) of the urological patient with inflammatory or infectious conditions.
3. Develop an approach to intraoperative consultation for a urological concerns .
4. Develop an understanding and develop an approach of assessment, diagnosis, classification and management of genitourinary trauma in a multidisciplinary manner.
5. Develop an understanding and develop an approach for the assessment, diagnosis, and management of common urological emergencies such as testicular torsion, priapism, and infected ureteral calculi.
6. Develop an understanding of the pathophysiology, management and follow-up of upper and lower urinary tract obstruction .
7. Develop an understanding of the natural history, diagnosis, staging, treatment, clinical outcomes, and complications for the common genitourinary malignancies:
    a. Prostate cancer
    b. Urothelial cancer
    c. Kidney cancer and renal masses
    d. Penis cancer
    e. Testicular cancer
8. Develop an understanding of the natural history, diagnosis, staging, treatment, clinical outcomes, and complications for less common genitourinary malignancies including:
    a. Adrenal tumors and cancers
    b. Urachal tumors and cancers
    c. Genitourinary sarcomas
    d. Paratesticular tumors and cancers
9. Develop an understanding of the role, indications, and potential complications of the major treatment modalities used in the management of urological malignancies, including:
    a. Open, laparoscopic, and robotic surgery

b. Interventional radiology options, including percutaneous biopsy, percutaneous ablation, and angiography/angioembolization
c. Systemic therapies, including chemotherapy, immunotherapy, anti-body drug conjugates, and vaccines
d. Radiation therapies, including brachytherapy, external beam, and stereotactic approaches
e. Intravesical therapies, including BCG, viruses, and chemotherapies
f. Cutaneous topical therapies, including chemotherapies and immune modulators

10. Develop an understanding of the role of multidisciplinary team members in the contemporary management of urologic cancers, including medical oncologists, radiation oncologists, interventional and conventional radiologists, surgical oncologists, pathologists, anesthesiologists, and nursing.

Surgical Skill and Knowledge

11. Develop the ability to competently perform the procedures (open/MIS) to alleviate obstruction of the upper and lower urinary tract
12. Develop the ability to competently apply the technical skills required for open procedures for the diagnosis and treatment of urological malignancies including the management of postoperative complications
13. Develop the ability to competently apply the technical skills required for minimally invasive procedures in the diagnosis and treatment of urological malignancies including the management of postoperative complications
14. Develop an understanding of the indications and technical skills required for transrectal ultrasound with or without prostate biopsy and management of potential complications

Achievable EPAs during Oncology Rotation

Transition to Discipline	Foundations	Core	Transition to Practice
TD1, TD2, TD3, TD4	F1. F2, F3, F4, F5, F6, F7, F8	C1, C2, C3, C5, C6, C7, C8, C9, C11, C12, C13, C14, C15, C17, C18, C19 - Senior	P1, P2, P3, P4, P5, P6

Potential Diagnostic and Surgical Procedures Exposure

Common	Less Common	Diagnostic
Orchidectomy: simple, radical, partial	Partial cystectomy	Complex urethral catheter insertion
Transurethral resection and fulguration of lesions of the bladder and urethra	Cavernosal shunt: distal or proximal	Ureteric catheterization, including insertion and removal of ureteral catheter/stent
Laparoscopic and robot-assisted nephrectomy (simple, radical)	Repair of penile fracture	Rigid and flexible cystoscopy, and urethroscopy
Laparoscopic and robot-assisted partial nephrectomy	Ureterolysis	Rigid and flexible ureteroscopy
Laparoscopic and robot-assisted nephroureterectomy	Uretero-ureterostomy	Retrograde urethrography, cystography and pyelography
Laparoscopic and robot-assisted radical prostatectomy	Ureteric reconstruction	Cystoscopic and ureteroscopic stricture dilation and incision of the urinary tract
Laparoscopic and robot-assisted radical cystectomy	Cystorrhaphy	Loopography
Open nephrectomy	Perineal urethrostomy	Antegrade nephrostography
Open partial nephrectomy	Trauma nephrectomy (Rare)	Collection of cytological specimens from the genitourinary tract
Open nephroureterectomy	Urethral dilatation and visual internal urethrotomy	Office biopsy of lesions of urothelium and penis
Open pelvic lymphadenectomy	Laparoscopic and robot-assisted adrenalectomy	
Open cystectomy, simple and radical	Open adrenalectomy	
Open prostatectomy, simple and radical	Open retroperitoneal lymphadenectomy	
Open urinary diversion; continent, incontinent	Open and endoscopic inguinal lymphadenectomy	
Penectomy; partial, radical	Urethrectomy , male and female	

Exploration for testicular torsion with or without orchidopexy		
Drainage/debridement of genital abscess		
Debridement of genital necrotizing fasciitis		
Cystostomy tube insertion		
Transurethral resection of prostate, using standard or alternative electrocautery or laser		

Expectations and Responsibilities

Rounding

Time	Urology inpatients	Inpatient Consults	Documentation
Morning	Round on all urology inpatients and document a progress note that includes a management plan. Communicate patient statuses and plans to the attending urologists prior to 8 AM. Communicate according to their individual preference (call, text message, or email).	Round on all active consult patients and document a progress note that includes management recommendations. Ensure discharge plans are present if required. Email appropriate secretary to set up post-discharge appointments if relevant.	Ensure the electronic patient problem list, past medical history, and active diagnoses are up-to-date. Electronically document your progress note.
Afternoon	Round on all inpatients.	Round on patients that are very ill or that might require urologic intervention.	Document serious events with a brief electronic note.

Weekly Schedule – please note the schedule changes from week to week

Day	Time	Dr. Huynh	Dr. Inman	Dr. Izawa	Dr. Power
Monday	8:00 AM	Clinic	Admin	OR	Clinic
	1: 00 PM				
Tuesday	8:00 AM	Virtual Clinic / Admin	Clinic	Clinic	OR
	1: 00 PM				
Wednesday	8:00 AM	Clinic	OR	Biopsies @ SJHC	Clinic
	1: 00 PM			Clinic	Virtual clinic
Thursday	8: 00 AM	**Thursdays rotate between the staff**: 8-6 pm OR GU MDT / PDAP Clinic			
	1: 00 PM				
Friday	8: 00 AM	OR	Admin	Clinic	Clinic
	1: 00 PM				

Outpatient Clinics

Location: E2 Urology Clinics
Start: 8:00 AM - *Punctuality is a must, and tardiness will be considered unprofessional.*
Etiquette:

- Charts that are placed outside the door mean that the patient is ready to be seen
    - When seeing patients try to preferentially see consults instead of follow-ups, we do notice.
- Always introduce yourself to the patient and the parents
    - Ask for permission to do a physical exam
    - For female pelvic exams, make sure there is a chaperone
- Review every patient with faculty
    - If the faculty is busy, it can be efficient to see a 'quick' follow-up in between
- If the nurses are busy, feel free to do the PVR's yourselves
- When patient encounter is finished, put the cardboard and stickers at the nurses' station so that they know the patient is ready to leave, and they will give them all the paperwork and help facilitate scheduling the next appointment
- Always have a management plan. Attendings might critique your plan, but you should view this as a learning opportunity.

End: 3:00 - 4:00 PM

Genitourinary Multidisciplinary Clinics

Location: Baines Centre in Verspeeten Family Cancer Centre
Start: Thursdays at 9:00 AM
Etiquette:

- Patients are first seen by nurses, and they will hand you the chart once they are ready
- Review patient with the whole team (surgical oncology, radiation oncology, medical oncology)
- Remember to copy ALL specialists on the dictation. 

PDAP Clinics

Location: B4-Urology Clinic at St. Joseph's Hospital
Start: Thursdays at 1:00 PM
Etiquette:

- Charts that are placed outside the door mean that the patient is ready to be seen.
- Review every patient with faculty
- Try to preferentially see the new consults first

Consults and Ward Management

Consultations will be directed to the residents on the Urologic Oncology rotation.

- Triage the consultations and determine their urgency (see now or later)
- Assess the patient, review their medical history, update Powerchart if diagnoses or surgeries or key things are missing, and formulate plan to review with faculty
- Ensure succinct emails with PIN are sent to the faculty immediately after review. Do not place patient identifiers (name, initials, PIN) in the subject of the email as these are not secure electronically.
    - Always include the name of the physician requesting the consult in your email as this is required for billing.
    - Please cc the faculty's administrative assistant
- Dictate a consultation note and place the patient on consult list if the patient requires following

Ward concerns and issues will be directed to the residents on the Urologic Oncology rotation.

- Triage and determine the urgency.

- **If patient is sick or if you are unsure, then contact the next person in the chain of command immediately. The chain of command is Junior Resident --> Chief Resident --> Urologic Oncology Fellow --> Attending urologist.**

Operating Room

Location: D Zone – Second Floor at Victoria Hospital
Start: Wednesday – 9:00 AM, Monday, Tuesday, Thursday, Friday – 8:00 AM
Etiquette:

- Meet the patient and family and introduce yourself
    - Be there 15 minutes before OR start time
    - Mark the side, ensure paperwork is properly filled out
    - Answer any questions but say 'I do not know' if you do not.
- Be present in the OR 5 minutes before the start time
    - Bonus points – set up OR, get sutures, position patient
    - Required to do the surgical pause
    - Inform the surgeon if you are not 100% sure how they would like the patient to be positioned so that they can be there to show you. Take notes; the attending should not have to show you twice their preferences.

Tips and Tricks:

- Be polite, the nurses probably know more than you
- Make sure you adhere to sterile technique
- Read up on the procedure or watch videos the day before
    - KNOW the patient and why we are doing the procedure (again, we will notice)

After the OR:

- Confirm ANY questions about the postoperative care with the faculty
    - This is important, we will assume you know otherwise
- Ensure you bring the patient to the PACU
- Ensure that the postoperative orders are there
    - Ensure the scripts are on the chart for the patient
    - Ensure that any postoperative investigations (ie. cystograms) are also ordered promptly

Documentation

Ensure that all consultations, operative notes, progress notes, ED notes are done in a timely manner. **Electronic documentation is the standard at LHSC and SJH in 2025 onwards.** Discharge summaries are to be done the day of discharge.

Dictations:

Consultations Code: 34

Elements:
Identification
History of Presenting Illness
Past Medical and Past Surgical History
Allergies and Medication
Birth History and Family History
- **focus on the history of bleeding disorders or malignant hyperthermia**

Social History
Investigations
Physical Exam
- **Include weight, Tanner stage and back exam**

Impression and Plan

Clinic Code: 80

Elements:
Patient age, diagnosis, previous plan
Current status or changes
Physical Exam
Investigations
Impression and Plan
- **Ensure to include what if's**
  - **If this then we will do this**
  - **If that then we will do that**

Operative Notes Code: 32

Elements
Preoperative Diagnosis
Postoperative Diagnosis
Procedure
Surgeon
Assistant
Anesthesiologist
Anesthetic
Blood Loss
Complications
Specimen
Clinical Note
Operative Note

Plan
- **Include scripts, follow-up plan and instructions given**

ED Note Code: 35

Elements
MUST include Diagnosis

The rest is the consultation/clinic format

ALWAYS:
- CC the family doctor
- Put DICTATED BUT NOT PROOFREAD

Common Postoperative Orders by Procedures

Post-Cystectomy

- Diet:
    - Inman: diet as tolerated, encourage very small bites only
    - Power, Izawa, Huynh: liquid diet and advance
- Antibiotics: Ancef and Flagyl for 24 hours in the perioperative period
- Stent removal:
    - If irradiated or difficult ureters: 4 weeks
    - Inman: when belly deflates (POD 5-7)
    - Power: Ask Faculty
    - Izawa: Ask Faculty
    - Huynh: until STENT-OPT trial results available, 4-5 weeks in clinic, discharge with prescription for antibiotics the day of stent removal
- Neobladder:
    - Read Dr. Inman's neobladder manual and give patient a copy
    - Cystostomy tube:
        - Inman: none
        - Power/Izawa: yes
    - Urethral catheter:
        - Irrigate twice daily with 50-60 mL water for mucous evacuation
        - Teach patient to self-irrigate prior to discharge.
    - A cystogram is performed at postop visit (3-4 weeks)
        - If there is no leak the SP is removed
        - The urethral Foley is removed 24 hours later
- Discharge:
    - Expected length of stay is 5-7 days
    - Discontinue drain prior to discharge if no leak / drain creatinine negative
    - Discharge with anticoagulation for 4 weeks (apixaban 2.5 mg BID or 5000 units fragmin sc)
    - Consider sodium bicarbonate 1000 mg BID – TID if acidosis postop
    - No heavy lifting (<10 lbs) for 6 weeks to avoid a hernia
- Follow-Up: Clinic in 3-4 weeks

Post-Prostatectomy

- Expected length of stay is overnight (home next day)
- Pain Management:
    - NSAIDs and Tylenol alternating regularly
    - Opioids PRN
- Bladder Spasm Control: anticholinergics, mirabegron, or diazepam PRN
- Antibiotics:
    - Ancef for 24 hours perioperatively
    - Antibiotics at time of catheter removal
        - Cipro or Septra DS for 3 days, starting the day prior to Foley removal
- Diet: DAT
- IV Fluids: Continue post op to ensure catheter remains free of clots
- Home Instructions:
    - Continue antispasmodics, Advil/Tylenol
    - CCAC for routine catheter care
    - Do NOT allow anyone to remove or manipulate the catheter aside from a member of the urology team
    - No heavy lifting (<10 lbs) for 6 weeks to avoid a hernia
    - Discharge with anticoagulation for 4 weeks (apixaban 2.5 mg BID or 5000 units fragmin sc) if extensive lymphadenectomy
- Follow-Up: ~1-2 weeks post-op for catheter removal

Post-Laparoscopic Radical Nephrectomy or Nephroureterectomy

- Expected length of stay: overnight to 2 days
- Pain Management:
    - Tylenol regularly for 48 hours, then PRN
    - Opioids PRN
- Catheter out POD 1 if mobilizing
- Antibiotics:
    - Ancef for 24 hours perioperatively
- Diet: DAT
- Home Instructions:
    - No heavy lifting (<10 lbs) for 6 weeks to avoid a hernia
    - For nephroureterectomy Foley:
        - Inman: homecare to remove foley on Day 7-10
        - Huynh: cystogram in 7-10 days in clinic
- Follow-Up: 4 weeks post-op for wound check and pathology review

Post-Open Partial or Radical Nephrectomy

- Expected length of stay: 2-5 days
- Pain Management:
    - +/-Epidural
    - Tylenol regularly for 48 hours, then PRN
    - Opioids PRN
- Catheter out POD 1 if mobilizing, unless epidural for pain
- Antibiotics:
    - Ancef for 24 hours perioperatively
- Diet: Diet as tolerated
- Home Instructions:
    - No heavy lifting (<10 lbs) for 6 weeks to avoid a hernia
    - Discharge with anticoagulation for 4 weeks (apixaban 2.5 mg BID or 5000 units fragmin sc)
- Follow-Up: 4 weeks post-op for wound check and pathology review

Post-RPLND

- Pain Management:
    - +/-Epidural
    - Tylenol regularly for 48 hours, then PRN
    - Opioids PRN
- If prior bleomycin:
    - Minimize oxygen utilization
    - Avoid fluid overload, prefer “dry” patient
    - Daily weights can be helpful for fluid management and to assess for postop ascites
- Antibiotics:
    - Ancef for 24 hours perioperatively
- Diet:
    - Inman: diet as tolerated
    - Power: Ice chips day 1, fluids (no tray) POD#2, DAT POD#3
- Home Instructions:
    - No heavy lifting (<10 lbs) for 6 weeks to avoid a hernia
    - Discharge with anticoagulation for 4 weeks (apixaban 2.5 mg BID or 5000 units fragmin sc)
- Follow-Up: 4 weeks post-op for wound check and pathology review

Common Urological Conditions

The following are common topics you will see and manage during your rotation. Please ensure that you are familiar with the following:

Prostate cancer

- PSA screening
- Prostate biopsies
- Risk stratification and management of prostate cancer
    - Principles of active surveillance
    - Indications for radical prostatectomy
        - Postoperative management of a radical prostatectomy
    - Indications for radiotherapy (definitive, salvage, SBRT)
    - Indications for androgen deprivation therapy
        - Understand side effects and difference between LHRH agonists and antagonists
- Imaging investigations: CT, bone scan, MRI, PSMA PET
- Genetic testing (somatic and germline) and hereditary syndromes
- Advanced/Metastatic prostate cancer
    - ADT
    - ARPIs
    - Chemotherapy (docetaxel)
    - Lutetium
    - Radiotherapy
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf

Bladder and Upper Tract Urothelial Cancer

- AUA hematuria evaluation guidelines
- Risk stratification and management options for NMIBC
    - Cystoscopic surveillance
    - Intravesical treatments: immunotherapy (BCG), chemotherapy, nadofaragene firadenovec, Nogapendekin alfa inbakicept-pmln (N-803)
    - Systemic therapy: pembrolizumab
- Management options for MIBC
    - Neoadjuvant and adjuvant chemotherapy and immunotherapy
    - Radical cystectomy and urinary diversion options
        - Understand potential surgical complications
    - Trimodal therapy
- Staging investigations: CT, MRI, FDG-PET
- Genetic testing (somatic and germline) and hereditary syndromes

- Indications for adjuvant systemic therapy:
    - Immunotherapy
    - Chemotherapy
- Management of advanced urothelial cancer
    - Immunotherapy
    - Chemotherapy
    - Enfortumab-vedotin
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/bladder.pdf

Kidney Cancer

- Bosniak cystic renal mass classification and management
- Solid renal mass evaluation and differential diagnosis
- Indications for renal mass biopsies
- Genetic testing (somatic and germline) and hereditary syndromes
- Localized renal cell carcinoma
    - Active surveillance
    - Partial nephrectomy
    - Radical nephrectomy
    - Ablation
- Advanced/metastatic renal cell carcinoma
    - Role of cytoreductive nephrectomy
    - Principles of systemic therapy
        - Immunotherapy
        - TKIs
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/kidney.pdf

Testicular Cancer

- Types of testicular and paratesticular tumours (benign, germ cell, non-germ cell)
- Staging of testicular cancer:
    - Imaging: CT T/A/P, FDG-PET
    - Serum tumour markers
- Indications for RPLND AND Technical Considerations
    - Retroperitoneal Lymph Node Dissection: Anatomical and Technical Considerations from a Cadaveric Study - PubMed
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/testicular.pdf

Penile Lesions

- Differential of benign and malignant penile lesions
- Indications for inguinal lymph node dissection and Technical Considerations
    - Anatomical characterization of the inguinal lymph nodes using microcomputed tomography to inform radical inguinal lymph node dissections in penile cancer - PubMed
- Adjuvant and neoadjuvant chemotherapy
- Staging of penile cancer:
    - Imaging: CT T/A/P, FDG-PET
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/penile.pdf

Adrenal Lesions

- Workup of an adrenal nodule
- Differential of benign and malignant adrenal lesions
- Imaging of adrenal nodules
- Indications for adrenalectomy
- Management of advanced adrenocortical carcinoma
- Guidelines:
    - NCCN: https://www.nccn.org/professionals/physician_gls/pdf/testicular.pdf

Imaging in Urologic Oncology

- Ultrasound
- CT scan
- MAG3 Renal Scan
- MRI
- FDG-PET scan
- PSMA-PET scan
- Sestamibi scan
- DOTATE-PET scan
- MIBG scan

Urologic Oncology Rotation – Key Contacts

Name	Admin	Office	Office Phone	Cell	Pager
Dr. Huynh	Carol Gerster	E2-651	519-685-8451	226-239-6763	19313
Dr. Inman	Amy Gerster	E2-653	519-685-8459	519-857-8556	17203
Dr. Izawa	Traci Devlugt	E2-649	519-685-8550	519-319-5816	18550
Dr. Power	Tawnya Murray	E2-634	519-667-6787	519-868-5344	18172

Name	Admin	Fax	Email
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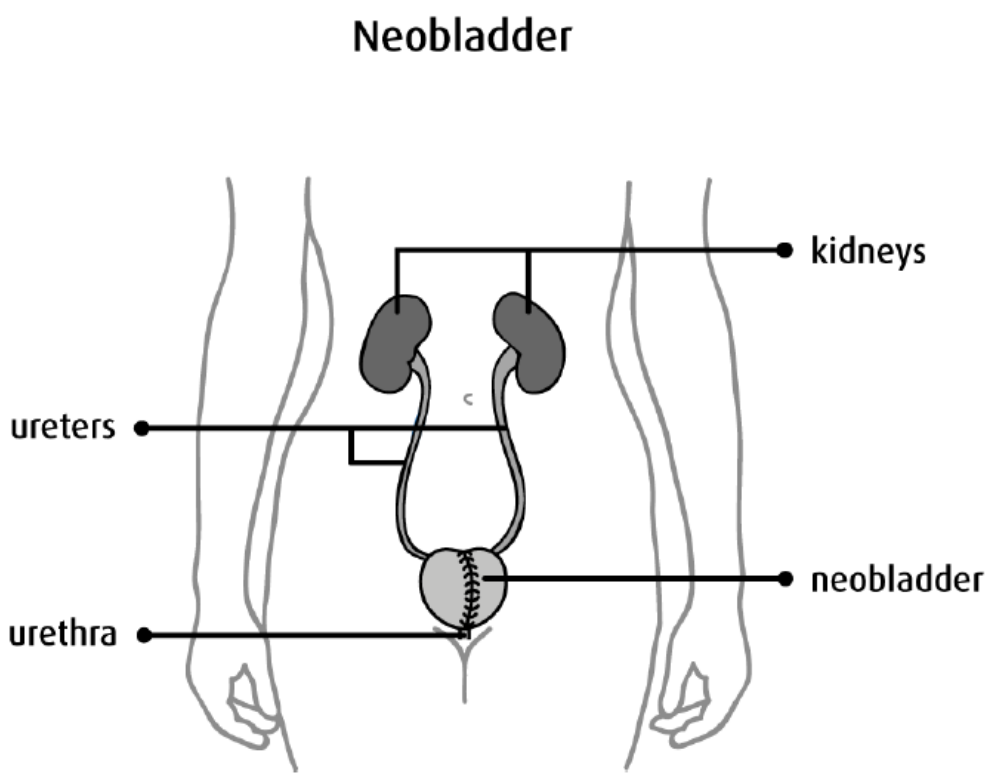
Useful Resources & References

- **Books:** Campbell-Walsh Urology, Hinman's
- **Guidelines:** CUA, AUA, NCCN, & EAU urologic oncology guidelines
- **Online Resources:** Urology teaching websites and case studies
- **Key Journal Articles:** Recent advancements and landmark studies in pediatric urology.

Appendix

Schulich MEDICINE & DENTISTRY | London Health Sciences Centre | St JOSEPH's HEALTH CARE LONDON | Western

Understanding Your Neobladder



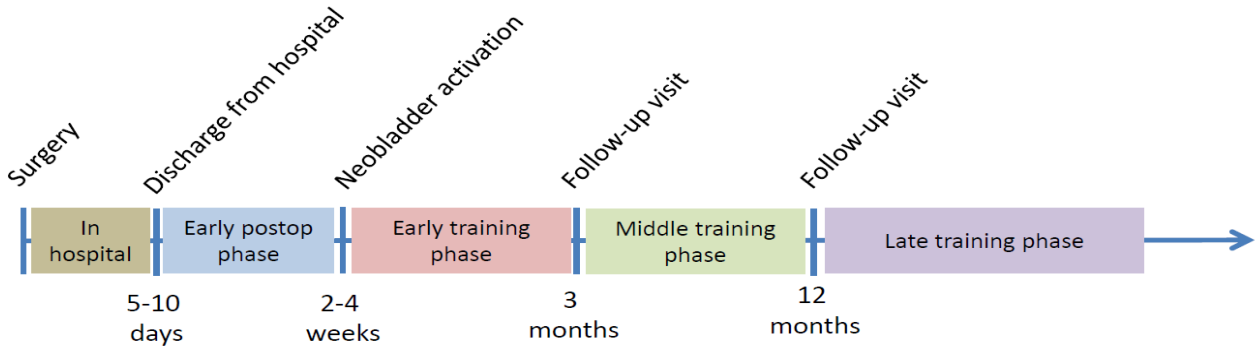
Inman's Neobladder Manual

What is a Neobladder?

The term "neobladder" means a "new" bladder. Neobladders are designed to hold urine and replace the normal human bladder. Neobladders are connected to the patient's own urethra, so they empty through the normal urine passageway. Normally about 1.5 feet of intestine are used to make a neobladder. Intestinal function is not usually affected.

What to Expect after Neobladder Surgery

Getting a neobladder is a life-changing experience. Patients with neobladders need life-long follow-up and care. If a patient is unwilling or unable to maintain a good long-term relationship with their urologist, then they probably should not consider a neobladder. Patients that cannot or are unwilling to perform bladder catheterization on their own should not receive a neobladder. A typical timeline for recovering from bladder removal and neobladder surgery is shown below. We will discuss each of these phases.



Surgery

The first part of surgery is to remove the bladder. This procedure is called a "cystectomy". In men, the prostate is usually removed with the bladder (prostatectomy). In women, the uterus, fallopian tubes, and ovaries are usually removed with the bladder (hysterectomy). The cystectomy part of the operation usually takes 1 to 2 hours. In patients that have bladder cancer, the pelvic lymph nodes are also usually removed. That procedure is called a lymphadenectomy. Lymph node removal usually takes an additional 1 hour of surgery time. Building a neobladder takes another 2-3 hours. The entire surgical procedure (cystectomy + lymphadenectomy + neobladder) lasts about 4 to 7 hours.

To make a neobladder, a 1.5 foot (60 cm) long piece of intestine is disconnected from the intestinal tract. The intestine is then hooked back together. The piece of intestine that was disconnected is then opened up and sewn into the shape of a ball, creating a neobladder. The ureters (the tubes that drain the kidneys into the bladder) are then sewn into the

neobladder to bring urine from the patient's kidneys to their neobladder. The neobladder is then sewn to the urethra so that it can empty to the outside world.

In-hospital Phase (Week 1)

Goals for this phase:

I. Start walking again
II. Start eating again
III. Start moving your bowels again
IV. Pain control
V. Learn how to care for the Foley catheter

After surgery, patients with neobladders will be on a special postoperative care pathway called Enhanced Recovery after Surgery (ERAS). This pathway is designed to speed recovery and decrease complications.

You will have a few tubes exiting your body after surgery. These include:

- Foley catheter
  This is a catheter with a balloon at the end that goes up the urethra and into the neobladder. This is how the neobladder will drain while it is healing. The Foley catheter normally stays in place for 3 to 4 weeks.

- Ureteral stents
  These are small tubes that go from the kidneys, down through the ureters, into the neobladder and exit onto the abdomen. They help ensure that the ureters heal into the neobladder without leaking. The ureteral stents normally stay in place for 5-10 days but sometimes up to 4 weeks.

- Drains
  One or more drains may be placed into the abdomen and pelvis to drain away any extra fluids after surgery. The drains normally stay in place for 5-10 days.

While in the hospital, our team of doctors and specialized wound/ostomy nurses will teach you about your neobladder. We will teach you how to irrigate your Foley catheter while the neobladder is healing and how to look out for common problems. You will leave the hospital with a Foley catheter.

Our goal is to discharge you from the hospital 5 -7 days after surgery.

Early Postoperative Phase (Weeks 2 to 4)

Goals for this phase:

I. Increase physical activity
II. Have a normal appetite
III. Eat a normal diet
IV. Regain strength and energy

After discharge from hospital, most patients will go home. Some patients may require a short stay in a rehabilitation facility to help them recover from surgery. To assist with the transition to home, home health nursing is sometimes set up. There are several tasks that you will need to do while you are recovering at home:

- **Irrigate the Foley catheter**
  Neobladders make a lot of mucous and the mucous needs to be irrigated out. To do this, you will need to irrigate the Foley catheter at least twice daily using the following steps:

1. Wash hands.
2. Wipe the tip of a 60 ml syringe with an alcohol swab.
3. Fill the syringe with 60 ml of sterile water/saline.
4. Unhook the bag from the catheter and insert the syringe into the end of the catheter.
5. Push the water/saline slowly into the catheter.
6. Gently pull back on the syringe to remove any trapped mucous or urine. Discard any mucous or urine that you remove into the toilet. If you do not get any urine or mucous back, reattach the catheter to the bag and allow the neobladder to drain slowly by gravity into the bag.
7. Repeat steps (e) and (f) until all the mucous is washed out.
8. Remove the plunger from the syringe and wash the syringe and plunger with antibacterial soap and water. Rinse thoroughly and allow to dry.

If the Foley catheter is not draining, the first thing to do is to irrigate and aspirate the Foley catheter as described in steps (a) through (h) above. If the catheter is still not draining after irrigation, this is an emergency and you should call your doctor and proceed to the nearest emergency room.

Signs of a plugged catheter include:
Abdominal cramping
Discomfort or bloated feeling
Pain in the kidney area
Low back pain

Decrease in the urine in the drainage bag even when you are drinking an adequate amount of liquids

Saline for Use at Home

Buy a one-gallon bottle of distilled water at the grocery store. Add 8 measured teaspoons of salt to the distilled water. Keep saline in the refrigerator. It can be used for one month. Throw out any saline that is left at the end of the month. Saline should be at room temperature when it is used. Pour the amount needed from refrigerated bottle into a clean, covered container each day. Leave this out of the refrigerator until it is at room temperature. Throw out any saline that is out of the refrigerator after 24 hours.

- **Inspect wound and drain sites**
  Surgical incision and drain sites should be looked at twice daily for signs of redness. Keep the skin dry and clean. Wash gently with antibacterial soap and pat dry daily.

- **Walk for at least 15 minutes every 2 hours**
  Walking is the best way to regain your strength. It helps prevent blood clots and promotes deep breathing.

- **Drink at least 2 liters (64 ounces) of fluids per day**
  Drinking plenty of water will thin the mucous. If the urine is dark orange/yellow, then you need to drink more fluids until the urine is almost clear.

- **Eat healthy foods**
  After surgery the body needs a lot of nutrients in order to heal. Your body will need protein, carbohydrates, minerals and vitamins to heal. It is a good idea to take a multivitamin and an iron supplement for a few months after surgery to help restore the nutrients that the body has lost. It is best to avoid fatty foods (e.g. fried foods, fast food). It is better to eat lots of fruit and vegetables. Protein should be eaten every day. Protein can come from animal meat (e.g., chicken, beef, pork, lamb, goat, fish, etc…) or in the form of vegetable protein (e.g., soy, tofu, beans,lentils). If you are having trouble eating because of a poor appetite or because of nausea/vomiting, you should call your doctor.

- **Check your weight**
  Weight loss is common after major surgery but it should not be too severe. Weigh yourself twice per week. If you lose more than 10 pounds after leaving the hospital, let your doctor know at your first postoperative visit. This visit will be about 1 month after surgery.

Call the doctor if you have any of the following problems:

- Fever over 101
- Nausea and/or vomiting
- Severe pain not relieved by medication
- Catheter comes out
- Pain with irrigation
- Saline won’t go into the catheter

Neobladder Activation (first post-op appointment with doctor)

Around 3-4 weeks after surgery, you will meet with the doctor to evaluate how things are progressing. This is usually a very long appointment.

Be sure to bring incontinent briefs to use after the catheter is removed.

- **Blood tests**
  Your blood will be drawn to check for electrolyte imbalances, kidney problems, and anemia.

- **Physical examination**
  The doctor will look at your incision and drain sites for signs of problems. If you have any staples, sutures, or drains, they may be removed. Sometimes patients feel weak or sick if they are not eating well. This may require readmission to hospital for IV fluids.

- **Cystogram X-ray**
  A cystogram is an X-ray of your neobladder to look for urine leaks. To do the cystogram, a radiology technician or your doctor will inject a small amount of contrast (dye) into the catheter and take X-rays of the neobladder. If no leaks are detected, then your neobladder is safe to activate.

  If a leak is detected, it will be managed by leaving the catheter in place for an additional 2-3 weeks. You will then have another cystogram.

- **Catheter removal**
  If there are no leaks seen on the cystogram and you are otherwise well, then the catheter will be removed. We fill the neobladder with 100-200 ml of sterile water and then pull out the catheter. Then you will empty your neobladder for the first time.

- **Learn how to catheterize the neobladder**
  After you void for the first time, the nursing staff will teach you how to catheterize your neobladder. Catheterization means inserting a small catheter into the urethra to empty the neobladder. This is a VERY important skill to learn and is critical to the early management of the neobladder.

  Catheterization will need to be done at least daily for the first week.

Early Neobladder Training Phase (Weeks 4 to 12)

Goals for this phase:

I. Learn how to empty the neobladder
II. Master neobladder catheterization
III. Practice pelvic floor muscles exercises

This is a difficult period and patients are often frustrated that they are not progressing to dryness fast enough. It is important to be patient and realize that bladder control takes time. It may take up to a year for good control.

Emptying the neobladder and preventing overfilling

It is very important that your neobladder does not get too full. When the neobladder gets too full or is not emptying fully, severe complications can occur. The complications may include:

- Abdominal pain
- Urinary tract infections
- Kidney failure
- Rupture of the neobladder (which can be fatal)

To avoid these problems, it is important that you learn to empty your neobladder properly and try to void according to a schedule.

Symptoms of a Urinary Tract Infection

- Increased mucus in the urine (not reliable)
- Cloudy, strong-smelling urine (not reliable)
- Fever
- Confusion
- Back pain
- Nausea and vomiting
- Blood in urine

  If you have these symptoms, contact your doctor.

How to empty your neobladder

You should try to void every 2-3 hours at first. The best way for patients to urinate when they have a neobladder is:

1. Sit on the toilet (this includes men and women)
2. Lean forward and rest forearms on thighs
3. Breathe deeply and relax the entire body, then slowly contract the abdominal muscles

The Credé method

The Credé method is another way to help the neobladder empty better if standard pelvic floor relaxation and abdominal contracting are not working well. This method helps you squeeze the urine out of the neobladder. To perform the Credé method:

1. Place both hands just below your belly button.
2. Lean forward and relax the pelvic muscles
3. Gently press on the lower abdomen just below the belly button
4. Slowly press harder and harder, pushing toward the pubic bone

Neobladder Emptying Schedule After Catheter Removal

	Daytime	Nighttime
Week 1-2	Every 2 hours	Every 3 hours
Week 3-4	Every 3 hours	Every 4 hours
Week 5-8	Every 4 hours	Every 5 hours

- **The post void residual**

  The post void residual is the amount of urine left in the neobladder AFTER you urinate on your own. To measure the post void residual:

  1. You first urinate on your own into a container (had-held urinal or potty hat) and try to empty as much urine as possible from your neobladder.
  2. Measure and record the volume of urine.
  3. Then, immediately after urinating, catheterize your neobladder and measure and record how much urine was left inside the neobladder. This is the post void residual.

Normally, we do not want the post void residual to be more than 100 ml.

If the post void residual is high (more than 100 ml), you may need to

- Try the Credé method or
- Catheterize on a regular basis.

Catheterizing neobladders in the early training phase

We recommend doing these catheterization checks at bedtime. A neobladder that is fully emptied prior to going to bed is less likely to leak urine during sleep. The basic procedure is:

1. Wash hands
2. Empty the bladder into a urinal using pelvic relaxation, abdominal contraction, and possibly the Credé method
3. Measure the amount of urine that was voided and write it in the **Neobladder Diary**
4. Insert a catheter into the urethra and empty the neobladder of any remaining urine. Use a clean washed or a new catheter and lubrication
5. Measure the amount of the post void residual and write in the **Neobladder Diary**
6. Take a 60 ml syringe filled with sterile water/saline and insert it into the catheter
7. Inject the water into the neobladder and then suck out any mucous
8. Repeat the water irrigation until the neobladder is free of mucous

(An example of a Neobladder Diary is on the last page of this hand-out)

- During the first month after neobladder activation (weeks 4 to 8 after surgery), you need to catheterize your neobladder every night.
- During the second month (weeks 9 to 12 after surgery), you can catheterize their neobladder once a week.

What to do if the post void residual is high (more than 100 ml)

Remember that the most dangerous thing with the neobladder is overfilling. A neobladder should never be allowed to fill to more than 500 ml. If the post void residual is more than 100 ml on any given catheterization, you will need to recheck it. We recommend the following:

Post void residual	When to catheterize
Less than 100 ml	First month: before bed every night Second month: before bed, once a week
100 to 200 ml	Morning and Before bed
200 to 300 ml	Morning, Afternoon, and Before bed
300 to 400 ml	Morning, Afternoon, and Before bed
400 to 500 ml	Early Morning, Lunchtime, Afternoon, Dinner/Supper time, and Before bed
More than 500 ml	Call your doctor Increase catheterizations until the post void residual is less than a 100 ml

Learning to control neobladder leakage (continence)

Once emptying of the neobladder is mastered, you can start working on trying to reduce urine leakage. It is normal for you to be totally incontinent in the early training phase. Leakage is especially common at night. A continence undergarment (e.g., Depends, Poise) is normally needed during daytime and nighttime during the early training phase. There are exercises that can help with continence.

- **Pelvic Floor Muscle Exercises**
  These exercises strengthen your pelvic floor muscles so that you can prevent urine leakage. These are the muscles that you use to hold gas in or to stop your urine stream when you are urinating. To do the exercise:
  1. Slowly and gently squeeze and lift your pelvic floor. Hold the contraction for a count of 5 seconds and then relax. As your become pelvic muscles become stronger, increase the hold to 10 seconds.
  2. Repeat 20 times.
     Try to do 100-200 contractions per day. Don't be tempted to squeeze too hard or you will be using the wrong muscle fibers. This exercise is about increasing endurance.

  If you are going to cough or sneeze, contracting these muscles will help prevent leakage.

- **Physical Therapy (pelvic floor rehabilitation)**
  We highly recommend that patients learn to do Kegel exercises from professionals. There are physical therapists that specialize in training patients to do these exercises right. They have special tools that can help improve the quality of the Kegel exercises that you do.

Middle Neobladder Training Phase (Months 3 to 12)

Goals for this phase:

I. Master neobladder control during the daytime
II. Learn to control the neobladder during the nighttime
III. Return to a normal way of living

By this phase, you should have recovered to about 80-90% of your pre-surgery energy and activity levels. Most patients that work have usually returned to work at this point. By 3 months, you should have gained control of your neobladder during the daytime and can avoid major leakage episodes. However, several more months of training are required in order to allow the neobladder to expand and hold more urine.

- **Expand the neobladder**
  The freshly made neobladder will hold about 200 to 250 ml of urine. As you gain continence by doing Kegel exercises, the bladder size will grow. **The goal is to have a neobladder that holds 400 to 500 ml of urine and empties completely (less than 100 ml residual).** In the middle training phase, you should really become an expert at Kegel exercises and should try to incorporate them into everyday life. For example, you can do these exercises while watching television, while working at a desk, while driving or while at work. As the neobladder expands, the time between voids will increase from 2-3 hours to 3-5 hours. In general, it is not a good idea to wait longer than 5 hours between voids since the risk of leakage will increase. Of course, if you drink more fluids you will need to urinate more often.

- **Becoming continent at night**
  Leakage at night is the single biggest issue with neobladders. Since the pelvic muscles are not contracted when you sleep, the risk of leakage at night is higher. This means that bedwetting is frequent. In the middle phase of training, the neobladder is starting to grow in size, and as it grows it will hold more urine before it leaks. There are a few additional tricks to reduce nighttime leakage:
  a) Don't drink fluids in the evening (since this will turn into nighttime urine). Do drink lots during the day.
  b) Avoid diuretics like alcohol and caffeine in the evening.
  c) Make sure the neobladder is fully empty before going to bed, and consider catheterizing before bed to ensure complete drainage. A completely empty neobladder will hold more urine before it leaks.
  d) Set an alarm to wake up every 3 hours to urinate.

Sexual Concerns for Men after Neobladder Surgery

What will happen as a result of my surgery?

- Surgery to remove your bladder and prostate will affect the nerves to the penis.
- You may not be able to have an erection after surgery or your erection may not be adequate to have sexual intercourse.
- It may take up to a year to determine if some or all erectile function will come back.
- You will not have any semen coming out during sexual activity.

What can I do about this?

- Speak with your urologist about this problem.
- Talk with your partner and ask for their support.
- There are many ways to express love and closeness to another person.

Is there any treatment for this condition?

- There are several ways to improve your sexual function
    - Prostheses (penile implants) can restore the ability to have erections.
    - Prostaglandin E1 is a substance naturally produced in the body that can produce erections. It can be injected almost painlessly into the base of the penis 5 to 10 minutes before intercourse or introduced into the urethra as a suppository.
    - Vacuum devices can create an erection. These mechanical pumps are placed around the entire penis before intercourse.
    - Drugs such as Viagra®, Levitra®, or Cialis® that can promote erections by increasing blood flow to the penis.

  Ask your urologist about these options and how to get one of these treatments.

Sexual Concerns for Women after Neobladder Surgery

What will happen as a result of my surgery?

- Surgery to remove your bladder may affect the nerves in your pelvic area.
- The surgery may also cause your vagina to be shorter.

Is there anything I can do about these changes?

- When you doctor says it is OK to have sex again, go ahead and try having intercourse.
- Talk with your partner about the fact that there may be changes that will make this difficult either on a short term or long-term basis.
- If it is painful or just feels different, try adjusting the position you and you partner take to see if another one is more comfortable.
- You may need to try a vaginal lubricant such as Replens® or Astroglide®
- Vaginal lubricants come in tubes, bottles, and as vaginal suppositories. Which product works best for your situation is mostly a matter of personal preference.
- Talk with your gynecologist or urologist about any problems you are having that interfere with your enjoyment of sex.

Late Neobladder Training Phase (after the first year)

By the time you reach the late phase of training, most of the issues have been worked out. However, a few issues can remain.

- **Persistent incontinence (urine leakage)**
  In this phase of training continence is usually quite good during the day and moderately good at night. You need to continue doing Kegel exercises forever in order to stay dry. Some patients, unfortunately, are not able to stay dry. If this happens to you, you should discuss the surgical options for fixing this urinary incontinence with your doctor.

- **Checking for overfilling**
  You should catheterize once every month or two in order to check a post void residual. It is very important to monitor neobladder emptying from time to time. If the post void residual is more than 100 ml on one of these checks, you should check daily for a few days to ensure that the neobladder is not constantly retaining urine. If the neobladder is not emptying well, then you will need to start performing regular catheterization using the schedule listed above.

Neobladder Diary			
Date	Time	Amount of Urine Voided	Post Void Residual