A mitrofanoff procedure involves using the appendix to create a continent stoma for emptying the bladder. Through this opening, the bladder can be catheterized. The appendix “tube” connects the exterior wall of the bladder to the belly button or newly created stoma. This allows a person the independence of cathing themselves. After the surgery, a horizontal line along the length of the abdomen will be healing. An indwelling catheter also will remain in place at the site of the stoma for a few weeks following to allow the area to heal. A clean intermittent technique is used to cath via the new stoma, usually every 4 hours.

A monti procedure also creates an alternative cathing method. However, a portion of the ileum (small intestine) is used to create the tube that connects the bladder wall to the abdominal wall. This can be used if the appendix is not long enough or unavailable for a Mitrofanoff procedure.

Using the colon, ileum or ureter, the bladder is enlarged. An enlarged bladder helps hold urine at a lower pressure than was previously tolerated. However, because the colon or ileum usually secrete mucous, the new bladder will also secrete mucous. Therefore, the bladder will need to be irrigated daily to keep it patent. Flushing with NSS will help reduce the incidence of kidney stones or urinary tract infections. A specific volume of NSS should be ordered to be instilled so that the bladder expands enough to clean any folds in the structure. The NSS is then aspirated out. Sometimes, this needs to be done more than once to be sure all the mucous is cleared.

The stoma, or new opening that was created on the abdominal wall should not leak and should not require any bags or appliances to cover it. The stoma should lay flat against the skin and not be visible under the clothes. Complications that can occur usually include stenosis, or narrowing, of the stoma opening. A minor surgical revision can be done to help dilate this opening. If leakage does occur from the opening, a minor procedure can also be used to correct.
**Basic cathing procedure**

1. Wash hands and don clean gloves.
2. Prepare supplies.
3. Lubricate catheter.
4. Slowly insert catheter into stoma, advance until urine begins to flow.
5. Assess urine output for volume, color and consistency.
6. Remove catheter and wipe stoma area clean.

**Helpful hints**

- Healthcare provider should order catheterization times, catheter type and size
- Do not force catheter into stoma
- Use of clean technique
- The stoma may require flushing with NSS to help clear mucous debris, per order
- A specific volume of NSS should be instilled, then aspirated, per order

<table>
<thead>
<tr>
<th>Types of surgical procedures</th>
<th>URINARY</th>
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<tbody>
<tr>
<td>Continent stoma</td>
<td>Mitrofanoff Monti</td>
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<tr>
<td>Incontinent stoma</td>
<td>Vesicostomy Ureterostomy Nephrostomy Ileal conduit</td>
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</tbody>
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**SHNIC school nurses information:**

**Specific health issues for individual health care plans**

- Diagnosis and reason for catheterization, date of bladder surgery
- Current medication list, noting medications that would affect urine color, volume and odor
- Provider’s order for cathing procedure including scheduled times, cath type and size
- Baseline status including color, consistency, and amount of urine during catheterization
- Parameters of when physician is to be notified regarding output amount, color or temperature
- Note history of urinary tract infections
- Student's position during catheterization
- Documentation of latex allergy
- Fluid intake goals
- Ability for student to have water with them at all times to encourage intake
- Accommodations for field trips
- Note student's ability to self cath, if appropriate following surgery
- Foster independence for learning and participating in steps of procedure

Resources & Manuals

- **Mitrofanoff, Maces and Bladder Augmentation Oh my! (Power Point)**
- **Reconstructing the lower urinary tract: The Mitrofanoff principle (Journal Article)**
  http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3822348/
- **Management of the pediatric neurogenic bladder (Journal Article)**
  https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4992015/