

4. Urine Collection - Other

a) Ileal conduit urine

- (1) Remove the external urinary appliance, and discard the urine within the appliance.
- (2) Gently swab and clean the stomal opening with a 70% alcohol pad and then with an iodine solution (1 -2% tincture of iodine or a 10% solution of povidone-iodine [1% free iodine]). Remove excess tincture of iodine with 70% alcohol after procedure to avoid burn.
- (3) Using sterile technique, insert a double catheter into the stoma. (A double catheter helps to minimize contamination of the specimen with skin flora.)
- (4) Catheterize the ileal conduit to a depth beyond the fascial level.
- (5) Collect the urine drained into a sterile container.

b) Straight catheter urine (in/out catheter urine specimens)

- (1) In/out catheter urine specimens are useful when clean-catch urine cannot be obtained or when results from clean-catch urine specimens are equivocal and a diagnosis is critical.
- (2) Prior to catheterization, the patient should force fluids until the bladder is full. (Forcing fluids may reduce organism number.)
- (3) Clean the patient's urethral opening (and in females, the vaginal vestibule) with soap, and carefully rinse the area with water .
- (4) Using sterile technique, pass a catheter into the bladder.
- (5) Collect the initial 15 - 30 ml of urine, and discard it from the mouth of the catheter .
- (6) Collect a sample from the mid or later flow of urine in a sterile container.

c) Indwelling catheter urine -- Indwelling catheters are place in patients who are unable to pass urine.

- (1) Clean the catheter collection port with a 70% alcohol wipe.
- (2) Using sterile technique, puncture the collection port with a needle attached to a syringe. (*Note: Do not collect urine from collection bag.*)
- (3) Aspirate the urine, and place it in a sterile container.

d) SPA of the urinary bladder

- (1) SPA is useful in determining urinary infection in adults in whom infection is suspected and for whom results from routine procedures have been equivocal and diagnosis is critical. SPA is also useful in pediatric patients when clean-catch urine specimens are difficult to obtain.
- (2) Before SPA, the patient should force fluids until the bladder is full. (Forcing fluids may reduce the organism number.)
- (3) Shave and disinfect the suprapubic skin overlying the urinary bladder.
- (4) The physician will make a small lance wound through the epidermis, just above the symphysis pubis.
- (5) Aspirate urine from the bladder by using a needle aspiration technique.

e) Bladder washout test (Fairly)

- (1) The bladder washout test is useful in determining the site of infection in the urinary tract. Results are equivocal in about 10-20% of patients.
- (2) Prior to test, have the patient force liquids until the bladder is full. (Forcing liquids may reduce organism number.)
- (3) Clean the urethral area with soapy water, and rinse the area well with water.
- (4) Insert an indwelling catheter into the bladder through the urethra.
- (5) Collect an initial urine specimen into a sterile container, and refrigerate it
- (6) Empty the bladder through the urethral catheter, and then irrigate it. (Use a sterile nonbacteriostatic 0.85% NaCl solution to irrigate the bladder.)
- (7) Collect three additional specimens (5 -10 ml each) at 10-minute intervals into separately labeled containers after irrigation of the bladder is performed.
- (8) Submit the initial and timed collection samples to the clinical microbiology laboratory for culture. (*Note: It is imperative that each specimen container be clearly labeled with the time of specimen collection.*)

- f) Cystoscopy: bilateral ureteral catheterization
- (1) Bilateral ureteral catheterization is useful in determining the site of infection in the urinary tract.
 - (2) Prior to cystoscopy, have the patient force liquids until the bladder is full. (Forcing liquids may reduce the organism number.)
 - (3) Clean the urethral area (and vaginal vestibule in females) with soapy water, and rinse the area well with water. Insert a cystoscope (obturator in place) into the bladder.
 - (4) With sterile technique, collect approximately 5-10 ml of urine from open stopcock into a sterile container.
 - (5) Label this sample CB, for catheterized bladder urine, and refrigerate it. Then irrigate the bladder. (Use sterile nonbacteriostatic 0.85% NaCl to irrigate the bladder.)
 - (6) After irrigation of the bladder and insertion of the ureteral catheters, collect irrigating fluid passing from the bladder through the ureteral catheters by holding the ends of both catheters over an opened sterile container.
 - (7) Label this sample WB, for washed bladder urine, and refrigerate it.
 - (8) Pass the ureteral catheters to each midureter or renal pelvis without introducing additional irrigating fluid. Open both stopcocks of the cystoscope to empty the bladder .
 - (9) Discard the first 5-10 ml of urine from each ureteral catheter.
 - (10) Collect four consecutive paired cultures (5-10 ml each) directly into opened sterile containers.
 - (11) Label these specimens LK-1, RK-1, LK-2, and RK-2 (LK for left kidney and RK for right kidney). Submit all samples to the clinical microbiology laboratory for culture.
- g) Urine specimen collection considerations are summarized in Table 12.

Table 12: Collection Considerations for Urine Specimens

| Culture | Vol (ml) ^a | Comments |
|--------------|-----------------------|--|
| Bacteria | 0.5 –1 | Do not collect 24-hour specimen. After proper cleansing of patient, use first morning midstream void. |
| Fungi | >20 | Do not collect 24-hour specimen. First morning void is recommended. |
| Mycobacteria | >20 | Do not collect 24-hour specimen. First morning three consecutive voided urine specimens are recommended. |
| Anaerobes | 1 | Use suprapubic aspirate. Send in sterile screw-cap cup or tube. |
| Virus | 10-50 | Do not collect 24-hour specimen. First morning void is recommended. Useful for adenovirus, mumps, and CMV detection. Send on ice, and transport to laboratory immediately. |
| Parasites | 24-hour collection | Use for detecting <i>Shistosoma haematobium</i> eggs, <i>Trichomonas vaginalis</i> trophozoites in males, and <i>Onchocerca volvulus</i> microfilariae. |

^aAmount are guidelines. Greater volumes will increase the chance of organism recovery.