

**Illinois Department of Public Health  
Division of Laboratories**

**General Submission Guidelines for Bacteriology Specimens**

1. Collect the specimen before administering antimicrobial agents when possible.
2. Collect the specimen with as little contamination from indigenous micro biota as possible to ensure that the sample will be representative of the infected site.
3. Use sterile equipment and aseptic technique to collect specimens and to prevent introduction of microorganisms during invasive procedures.
4. Collect an adequate specimen (refer to the *Manual of Services* for adequate amount necessary) to perform each test.
5. Assure the specimen container is clearly and correctly labeled with the patient name, date and time of collection, source and/or specific site so that the proper culture media will be selected during processing in the laboratory.
6. Complete all information on the test requisition. The patient identifier on the test requisition must match the identifier on the specimen.
7. Clinics must transport all specimens to the laboratory promptly to ensure the survival and isolation of fastidious organisms, to prevent overgrowth by more hardy bacteria, to shorten the duration of specimen contact with some local anesthetics used in collection procedures that may have antibacterial activities and to provide more accurate diagnosis of infectious-disease process.

**Specimen Collection**

**Female genital tract**

Genital tract specimens are submitted primarily for the detection of sexually transmitted pathogens [such as *N. gonorrhoeae*, *Chlamydia trachomatis*, *Lymphogranuloma venereum*, HSV, human papillomavirus (HPV), trichomonas, *Haemophilus ducreyi*, group B streptococci and *Candida* infections]. If infection is not caused by any of these pathogens, anaerobic bacteria may be involved.

**Cervix**

1. Do not use lubricant during procedure.
2. Wipe the cervix clean of vaginal secretion and mucus.
3. Rotate a sterile swab, and obtain an exudate from the endocervical glands.
4. If no exudate is seen, insert a sterile swab into the endocervical canal, and rotate the swab.

**Illinois Department of Public Health  
Division of Laboratories**

**Vagina**

1. Use a speculum without lubricant.
2. Collect secretion from the mucosa high in the vaginal canal with sterile pipette or swab.

**Male**

**Penile lesion**

Used primarily to detect sexually transmitted pathogens such as *N. gonorrhoeae*, *C. trachomatis*, *Lymphogranuloma venereum*, HSV, *T. palladium* and *H. ducreyi*. Illinois Department of Public Health laboratories only culture *N. gonorrhoeae* and *H. ducreyi*.

1. Clean the surface of the lesion with 0.85 percent NaCl. If a crust is on the lesion, remove it.
2. Scrape the lesion until serous fluid emerges.
3. Wipe away fluid and debris with sterile gauze (try to avoid bleeding).
4. Press the base of the lesion until clear fluid is expressed.
5. Aspirate vesicular fluid with a 26 to 27 gauge needle.
6. Scrape the base of an open vesicle with a sterile scapel blade, and rub the base vigorously with a sterile swab (for *H. ducreyi* detection).

**Urethra**

Used primarily to detect *N. gonorrhoeae*

1. Collect specimens at least two hours after the patient has urinated.
2. Insert a thin urethrogenital swab 2 to 4 cm into the endourethra, gently rotate it, leave it in place for one to two seconds and withdraw it.

**Illinois Department of Public Health  
Division of Laboratories**

**Specimen Collection**

**Ocular specimens**

1. Obtain viral and chlamydia samples before topical anesthetics are instilled.
2. Obtain samples for chlamydia with calcium alginate swabs and viral cultures with Dacron® swabs or cotton swabs with non-wood shafts.
3. Send prepared smears and inoculated media to the laboratory immediately.

**Conjunctival scraping**

1. One or two drops of topical anesthetic are generally instilled.
2. Scrape the lower tarsal conjunctiva with a sterilized kimura spatula.
3. Inoculate the appropriate media directly.
4. Prepare smears by applying the scraping in a circular manner to a clean glass slide or by compressing material between two glass slides and pulling the slides apart.
5. Alternatively, use a calcium alginate swab or cotton-tipped applicator to swab the inferior tarsal conjunctiva (inside the surface of an eyelid) and the fornix of the eye. However, organisms are more readily detected in scraping than from a swab.

Collection considerations of ocular specimens

---

Culture	Comments
Bacteria	Inoculate media directly with ocular scraping (If <i>N. gonorrhoeae</i> is suspected, inoculate a Thayer-Martin agar plate also).
Fungi	Inoculate media directly with ocular scraping; see mycology manual.
Mycobacteria	Inoculate medium directly with ocular scraping; see mycobacteriology manual.

---

**Illinois Department of Public Health  
Division of Laboratories**

**Specimen Collection**

**Respiratory specimens**

1. Twenty-four hour sputum collections are not recommended for culture.
2. If *Corynebacterium diphtheriae*, *Achromobacterium haemolyticum*, *N. gonorrhoeae* or *Legionella* are suspected, the physician should contact the clinical microbiology laboratory prior to specimen collection because special techniques and/or media are required for the isolation of these agents.

**Upper respiratory tract infections**

**Throat (pharyngeal specimens)**

Submitted primarily for the detection of group A streptococci (also can be used to detect *N. gonorrhoeae*, *H. influenza*, and *A. haemolyticum*)

1. Do not obtain throat samples if epiglottis is inflamed, as sampling may cause serious respiratory obstruction.
2. Depress tongue gently with tongue depressor.
3. Extend a sterile swab between the tonsillar pillars and behind the uvula. (Avoid touching the cheeks, tongue, uvula or lips).
4. Sweep the swab back and forth across the posterior pharynx, tonsillar areas and any inflamed or ulcerated area to obtain a sample.

**Nasal swabs**

Submitted primarily for the detection of staphylococcus carriers.

1. Insert a sterile swab into the nose until resistance is met at the level of the turbinates (approximately 1 inch into the nose).
2. Rotate the swab against the nasal mucosa.
3. Repeat the process on the other side.

**Nasopharyngeal suction**

Submitted for the detection of carriers of *S. pyogenes*, *N. meningitidis*, *C. diphtheria* and *B. pertussis*.

1. Suction material from the nasopharynx, and collect it in a sterile container.

**Nasopharyngeal swabs**

Submitted primarily for the detection of carriers of *N. meningitidis*.

1. Carefully insert a flexible-wire calcium alginate-tipped swab through the nose into the posterior nasopharynx, and rotate the swab.
2. Keep the swab near the septum and floor of the nose.

**Illinois Department of Public Health  
Division of Laboratories**

**Urine Culture Specimen Collection**

**General considerations:**

1. Never collect urine from a bedpan or urinal.
2. Thoroughly clean the urethral opening (and the vaginal vestibule in females) prior to collection procedures to ensure that the specimen obtained is not contaminated with colonizing microorganisms.
3. Soap rather than disinfectant is recommended for cleaning the urethral area. If disinfectants are introduced into the urine during collection, it may be inhibitory to the growth of microorganisms.
4. Transport specimens to the laboratory within two hours of collection. If it cannot be transported within two hours of collection, the urine specimens should be refrigerated. (Bacterial counts remain stable for at least 24 hrs at 4 C.) Do not freeze.
5. Use sterile cups or tubes to transport urine. Also, urine transport kits containing a preservative are available.
6. Any urine collection procedure involving catheterization must be done with scrupulous aseptic technique to avoid introducing microorganisms.
7. Send the first morning voided urine. Three consecutive first morning urine specimens are recommended for mycobacterial culture.
8. Do not submit 24-hour urine collections for culture.

**Urine collection techniques**

**Clean catch urine specimens (female)**

1. The person obtaining the urine specimen should wash hands with soap and water, rinse and dry. If the patient is collecting the specimen, she should be given detailed instructions, including diagrams or a pictorial display.
2. Cleanse the urethral opening and vaginal vestibule area with soapy water or clean gauze pads soaked with liquid soap.
3. Rinse the area well with water or wet gauze wipes.
4. Hold labia apart during voiding.
5. Allow a few milliliters of urine to pass (Do not stop the flow of urine).
6. Collect the midstream portion of urine in a sterile container.

**Clean catch urine specimens (male)**

1. The person obtaining the urine should wash hands with soap and water, rinse and dry. If the patient is collecting the specimen, he should be given detailed instruction, including diagrams or a pictorial display.
2. Cleanse the penis, retract the foreskin (if not circumcised) and wash with soapy water.
3. Rinse the area well with sterile water.
4. Keeping the foreskin retracted (to minimize contamination with skin flora), allow a few milliliters of urine to pass.

**Illinois Department of Public Health  
Division of Laboratories**

5. Collect the midstream portion of urine in a sterile container.

Straight catheter urine (in/out catheter urine specimens)

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.

1. Prior to catheterization, the patient should force fluids until the bladder is full (forcing fluids may reduce organism number).
2. Clean the patient's urethral opening (and in females, the vaginal vestibule) with soap, and carefully rinse the area with water.
3. Using sterile technique, pass a catheter into the bladder.
4. Collect the initial 15 to 30 mL of urine, and discard it from the mouth of the catheter.
5. Collect a sample from the middle or later flow of urine in a sterile container.

**Indwelling catheter urine**

Indwelling catheters are placed in patients who are unable to pass urine

Clean the catheter collection port with a 70 percent alcohol wipe.

1. Using sterile technique, puncture the collection port with a needle attached to a syringe; do not collect urine from a collection bag.
2. Aspirate the urine, and place it in a sterile container.

**Suprapubic bladder aspiration (SPA) of the urinary bladder**

SPA is useful in determining urinary infection in adults in whom infection is suspected and for whom results from routine procedure have been equivocal and diagnosis is critical. SPA is also useful in pediatric patients when clean catch urine specimens are difficult to obtain.

1. Before SPA, the patient should force fluids until the bladder is full.
2. Shave and disinfect the suprapubic skin overlying the urinary bladder.
3. The physician will make a small lance wound through the epidermis, just above the symphysis pubis.
4. Aspirate urine from the bladder by using a needle aspiration technique.

**Illinois Department of Public Health  
Division of Laboratories**

**Transport Medium**

**Genital**

1. The specimen is collected on a swab transport system (i.e., culturette).
  2. The specimen should be kept moist and plated within 12 hours.
  3. Dry specimens are rejected.
  4. The preferable method of transport for *N. gonorrhoeae* is a transport medium such as Jembec plates, Gono-Pak or Transgrow.
- 

**Eye and ear**

1. The specimen is collected on a swab transport system.
  2. The ampule of the kit must be broken to keep the specimen moist.
  3. Dry specimens are rejected.
- 

**Throat (Strep A) and nasal**

1. The specimen is collected on a swab transport system.
  2. Dry specimens are rejected.
- 

**Urine**

1. The specimen is submitted in a urine collection tube (BD, Sage).
  2. If urine is sent in a sterile cup, it must come to the laboratory on ice.
  3. Urine more than four hours old is rejected.
- 

**Nasopharyngeal**

1. The specimen is collected on a nasopharyngeal swab.
  2. Put swab into swab transport system and then send to the laboratory.
- 

**Sputum**

1. Send to the laboratory in a sterile cup.
  2. All sputa will be screened with a gram stain.
  3. Saliva specimens will be rejected.
- 

**Wound/Abscess**

1. The specimen is collected on a swab transport system.
2. Gram stain will be done if two swabs are sent.

**Send to           IDPH Laboratory  
                      2121 W. Taylor St.  
                      Chicago, IL 60612-7260  
                      Phone 312-793-4760  
                      Fax 312-793-1322**