Clean Specimens are Needed to Diagnose a True Urinary Tract Infection (UTI)

**Bacteriuria:** Bacteria in the urine

**UTI: Clinical Symptoms** + Bacteriuria with one bacterium ≥ 10^5 Colony Forming Units (CFU)/ml

**Pyuria:** > 10 White Blood Cells (WBC) per High Power Field (HPF) of unspun urine
PREVENTING ERRORS AT THE OUTSET

Ensure that all fields on the lab requisition slip are completed

- Specify the collection technique, i.e., clean catch vs. catheterized.
- Laboratory reporting criteria differ for clean catch vs. catheterized specimens.
- Specify the collection date and time.
- Specify if the patient is on an antimicrobial and identify the antimicrobial.
- Ensure that the name on the requisition slip and the specimen are identical.

SPECIMEN INTEGRITY

Specimen Collection

Clean Catch Mid-stream Voided Specimens

- Improper instruction or patient impatience can lead to a contaminated specimen.
- Can be contaminated with skin flora from the anterior urethra and peri-anal area.

Straight Catheterization Specimens

- You must disinfect the peri-urethral area prior to inserting the catheter.

Foley Catheter

- Only collect specimen on insertion.

Specimen Handling and Transport

- Highly recommended to use urine transport tubes that contain a preservative (check expiration date).
Unpreserved specimens must be refrigerated until processing.
Unpreserved, unrefrigerated urine is worthless unless processed within 2 hours of collection.

**Specimen Stability**

**Urine Culture Stability**
- **PRESERVED:** Bacterial counts stable for 48 hours at room temperature (RT)<sup>1</sup>
- **UNPRESERVED:** Bacterial counts stable for 2 hours at RT<sup>1</sup>

**Urinalysis Stability**
- **PRESERVED:** Stable for 72 hours at RT<sup>2</sup>
- **UNPRESERVED:** Stable for 2 hours at RT<sup>3</sup>

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**WHEN TO SUSPECT A CONTAMINATED SPECIMEN**

**Contaminated Urinalysis**
- Epithelial cells on microscopy

**Contaminated Urine Cultures**
- Clean catch specimens suspect contamination:<sup>4</sup>
  - ≥2 species of bacteria each <10<sup>5</sup> CFU/mL
  - ≥ 3 species of bacteria each >10<sup>5</sup> CFU/mL
- Straight catheter specimens suspect contamination:<sup>4</sup>
  - ≥ 3 types of bacteria each ≥10<sup>5</sup>

**Organisms Suggesting Contamination**
- Diphtheroids
- *Staphylococcus* spp. (exceptions: *S. saprophyticus, S. lugdunensis*)
- *Lactobacilli* spp.
- Viridans streptococci
- Reports indicating skin flora or urethral flora
References:

Created by a multi-disciplinary advisory panel in collaboration with IPRO.

Marina Keller, MD
Infectious Disease, Orange Regional Medical Center, Middletown, NY

Eve Bankert, MT (ASCP)
IPRO, Albany, NY

Elliot L. Rank, Ph.D., D(ABMM)
Quest Diagnostics, Technical Director, Microbiology, Teterboro, NJ

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