URINE SPECIMENS
TYPES AND COLLECTION PROCEDURES

I. PRINCIPLE

Collection and transportation of urine specimens to the clinical laboratory are important because variables such as collection method, container, transportation, and storage affect the analysis outcome and consequently diagnostic and therapeutic decisions based on the results. Clinical staff are responsible for patient instruction, collection and labeling of urine specimens and timely transportation of specimens to the Laboratory.

II. SPECIMEN REQUIREMENTS

A. Specimen types

1. Random specimen

For chemical and microscopic examination, a voided specimen is usually more suitable. A randomly collected specimen may be collected at unspecified times and is often more convenient for the patient. A random specimen is suitable for most screening purposes.

2. First morning specimen or 8-hour specimen

The patient should be instructed to collect the specimen immediately upon rising from a night's sleep. Other 8-hour periods may be used to accommodate insomniacs, night-shift workers, and in certain pediatric situations. The bladder is emptied before lying down and the specimen is collected on arising so that the urine collected only reflects the recumbent position. Any urine voided during the night should be collected and pooled with the first morning voided specimen.

3. Fasting specimen

This differs from a first morning specimen by being the second voided specimen after a period of fasting.

4. 2-Hour postprandial specimen

The patient should be instructed to void shortly before consuming a routine meal and to collect a specimen 2 hours after eating.

5. 24-hour (or timed) specimen

To obtain an accurately timed specimen, it is necessary to begin and end the collection period with an empty bladder. The following instructions for collecting a 24-hour specimen can be applied to any timed collection (consult test requirements to determine if a special preservative is required):

Day 1 - 7 AM: Patient voids and ***discards*** specimen. Patient ***collects*** all urine for the next 24 hours.

Day 2 - 7 AM: Patient voids and ***adds*** this urine to the previously collected urine.

6. Catheterized specimen

This specimen is collected under sterile conditions by passing a hollow tube through the urethra into the bladder.

7. Midstream "clean catch" specimen

This specimen provides a safer, less traumatic method for obtaining urine for bacterial culture. It also offers a more representative and less contaminated specimen for microscopic analysis than the random specimen. Adequate cleansing materials and a sterile container must be provided for the patient. The procedure for the collection of a "clean catch" urine is described below in section VI of this policy.

8. Suprapubic aspiration

Urine may be collected by external introduction of a needle into the bladder. It is free of extraneous contamination and may be used for cytologic examination.

9. Pediatric specimens

This may be a sterile specimen obtained by catheterization or by suprapubic aspiration. The random specimen may be collected by attaching a soft, clear plastic bag with adhesive to the general area of both boys and girls.

B. Transportation of specimens

Urine specimens should be delivered to the within 2 hours of collection or refrigerated and transported to the lab as soon as possible.

III. REAGENTS AND SUPPLIES (for collection of "clean catch" specimens)

A. Disposable, clean, dry, leak-proof container (sterile container with lid required for microbiological cultures)

B. Screw top specimen tube

C. Disposable gloves

D. Betadine swabs (Hibiclens if allergic to betadine)

E. Dry, clean gauze

F. Patient's bedpan or urinal, if patient is unable to go the bathroom.

IV. CALIBRATION

No calibration is required for this procedure.

V. QUALITY CONTROL

Identification of the patient must be performed by asking a conscious patient his or her full name and birthdate. Verify by checking the identification band if available.

VI. PROCEDURE

A. Patient preparation:
For FEMALE patients:

1. Wash hands thoroughly before beginning the procedure and put on disposable gloves.

2. Use betadine swabs or Hibiclens to cleanse the perineal area.
   a. Separate the folds of the labia and wipe the betadine swab or Hibiclens from front to back (anterior to posterior) on one side, then discard swab or towelette.
   b. Using a second betadine swab or Hibiclens, wipe the other side from front to back, then discard.
   c. Using a third betadine swab or Hibiclens, wipe down the middle from front to back, then discard.
   d. Pat dry periurethral area with clean dry gauze to remove excessive betadine while keeping the labia separated.

For MALE patients:

1. Wash hands thoroughly before beginning the procedure and put on disposable gloves.

2. If the patient is not circumcised, pull the foreskin back (retract the foreskin) on the penis to clean and hold it back during urination.

3. Using a circular motion, clean the head of the penis with betadine swabs or Hibiclens. Discard the swab or towelette.

B. Urination should begin, passing the first portion into the bedpan, urinal, or toilet.

C. After the flow of urine has started, the urine specimen container should be placed under the patient collecting the midportion (midstream "clean catch") without contaminating the container.

D. Any excess urine can pass into the bedpan, urinal, or toilet.

E. Cover the urine container immediately with the lid being careful not to touch the inside of the container or the inside of the lid.

F. Transfer urine to specimen tube if tubes are used for transport instead of urine containers.

G. Attach label to tube or container and place specimen in the transport bag.

H. Remove gloves and wash hands.

I. Record date and time of collection and initials of the person collecting (or submitting) the specimen on the specimen container. Transport specimen to the Laboratory within 2 hours of collection or refrigerate and transport to the lab as soon as possible.

VII. CALCULATIONS
Not applicable.

VIII. REPORTING RESULTS
Not applicable.

IX. PROCEDURAL NOTES
Specimens submitted for routine urinalysis should be collected in clean, dry containers. The specimen may be random, first morning, fasting, 2-hour postprandial, 24-hour (or timed), catheterized, midstream, clean-catch, or suprapubic aspiration. The specimen should be submitted to the lab in a plastic screw-top transfer tube or specimen cup. Specimens submitted in syringes will not be accepted by the laboratory.

The specimen containers must be properly labeled with appropriate patient identification including: name, medical record number, date of birth/age, the date and time of collection, and initials of the person collecting (or submitting) the sample
Specimens should be submitted to the laboratory immediately. A specimen for urinalysis should be examined while fresh. Specimens left at room temperature will begin to decompose resulting in chemical and microscopic changes.

A minimum of 12 ml of urine should be submitted for analysis. Smaller sample quantities will be analyzed but the statement "QNS FOR ACCURACY: < 5 ML SUBMITTED FOR ANALYSIS" will accompany results of those specimens with volumes < 5 ml., e.g., babies or newborns.

SPECIMENS FOR PREGNANCY TESTING

First morning specimens are the best for pregnancy testing because the urine is more concentrated.

SPECIMENS FOR OSMOLALITY

No special sample preparation is required. Whole blood, serum, plasma, or urine may be used.

X. LIMITATIONS OF PROCEDURE

A. Specimens submitted in syringes will not be accepted.

B. Specimens improperly labeled must be discarded and recollected.

C. Urine osmolality cannot be collected with preservatives.

D. Urine samples leaking in the collection bag are unacceptable.