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Dispensing, Receiving, Processing 24-Hour Urine Containers - Royal Oak

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This procedure describes the process for dispensing the appropriate 24-hour urine container or P-Splitter™ for the test(s) requested. 24-hour urine containers are dispensed from Stat Lab for Inpatient and Outpatient collection or from Core Lab for Beaumont Reference Laboratory (BRL) collections. This procedure also describes the process for receiving urine container(s) back from the Nursing Units and processing a P-Splitter™ set.

II. SPECIMEN COLLECTION AND HANDLING:

A. The Chemistry Lab assistant or Technologist dispenses the appropriate 24-hour urine container(s), together with appropriate preservative, precautions sheet, safety and expiration labels as required. The 24-hour urine specimen is refrigerated or iced during collection. It is delivered promptly to the laboratory following collection.
NOTE: The P-Splitter™ is dispensed ONLY from the STAT Lab and is ONLY used for Inpatients.

III. SUPPLIES:

A. 24-hour Urine Container with attached collection tag

B. Safety Labels (Caution: Hydrochloric Acid (HCL), Boric Acid, Caution: Acid-Prevent Skin Contact)

C. Family Birth Center Bright Green Labels

D. Expiration labels for Containers dispensed with preservative

E. Copies of *Precautions for 24-Hour Urine Collections with Preservatives* (Attachment)

F. P-Splitter™ set with attached collection tags and usage instructions

G. Boric Acid (10g, 5g, 1g and 0.5 g vials)

H. Sodium Carbonate (5g and 2.5g vials)

I. 6 Normal (N) HCl in automatic dispenser bottle (15 mL, 10mL and 7.5 mL dispense)

J. Aliquot tubes/caps

K. Red Stat Bag

IV. REAGENTS:

A. **To prepare one liter 6N HCL from 12.1 N concentrated HCL:**

1. Use safety goggles, face shield or work in the fume hood with the cover lowered.
2. Always add ACID to WATER as significant heat may be generated.
3. Place 500 mL of distilled or deionized water into a large 2-liter beaker.
4. Measure 500 mL of concentrated (12.1 N) HCL using a graduated cylinder.
5. Slowly add the ACID to the WATER, swirling after each addition.
6. Use a funnel to carefully transfer the diluted acid into a 1-liter automatic dispensing reagent bottle.
7. Label the bottle appropriately for content and safety precautions.

B. **To prepare one liter 50% Acetic Acid from concentrated Acetic Acid:**

1. Follow instructions described above for preparation of 6N HCL, instead using Acetic Acid, Glacial (100%) as the concentrated acid.

V. PROCEDURE:

A. **Core Lab Dispensing for Beaumont Reference Laboratory**

1. Dispense preservative and label container with safety label(s) as required.
2. Complete front of collection tag w/ test(s) requested, preservative (if dispensed) and your initials.
3. Affix “Expires____” sticker to top of collection tag and on container, if preservative was dispensed. Complete with expiration of 6 months from date dispensed. (e.g. if dispense 9/1/22, note EXPIRES 3/1/23)
4. Attach safety sheet *Precautions for 24-Hour Urine Collections with Preservatives* whenever preservative is dispensed. Highlight specific preservative/safety action and staple to back of collection tag.

B. **Stat Lab Dispensing for Inpatients or Outpatient Lab**

1. **Nursing**

a. Order/Print all specimen label(s) at start of collection. (Note: 24-hour urine will display in Chart Review as “scheduled”)

b. Bring label(s) to Stat Lab and request 24-hour Urine Container.

2. **Lab Assistant or Technologist**
    a. Review label(s) presented and select appropriate 24-hour Urine Container or P-Splitter™.
    b. Place barcode label(s) on backside of attached collection tag.
    c. Dispense preservative(s) and label container with safety labels as required.
    d. Complete front of collection tag w/ test(s) requested, preservative (if dispensed) and your initials.
    e. Affix "Expires____" sticker to top of collection tag, if preservative was dispensed. Complete with expiration of 6 months from date dispensed. (e.g. if dispense 9/1/22, note EXPIRES 3/1/23)
    f. For Outpatient Lab, attach safety sheet *Precautions for 24-Hour Urine Collections with Preservatives* whenever preservative is dispensed. Highlight specific preservative/safety action and staple to back of collection tag.
    g. Instruct Nursing to keep container iced during the collection and to complete all information on the collection tag at completion of collection.

3. **Family Birth Center**
NOTE: These are processed STAT regardless if they are ordered STAT or Routine.
    a. **Dispensing**
        i. Family Birth Center will order a 24-hour protein urine (PRO24). This test requires a plain jug at beginning of collection.
        ii. Patient barcode label with PRO24 orders are placed on the back of the urine tag.
        iii. Complete information on the front of Urine tag with the patient information, test requested, and your initials.
        iv. Label jug and the Urine tag with bright green "Family Birth Center STAT" stickers.

        v. Instruct Registered Nurse (RN)/ Nursing Assistant (NA) to keep container on ice during the collection and to complete **all** information on the collection tag at completion of collection.
    b. **Receiving**
        i. RN/NA will return the 24-hour urine container(s) to the STAT Lab at the completion of the 24-hour collection period.

ii. Do not let RN/NA leave until you have verified all the information on the urine tag. Example: Start Dates/Times and End Dates/ Times.

iii. Under the “Receiving” tab, scan the PRO24 label on the back of the urine tag. In Specimen Update tab under "Questions" enter the 24 hour collection information.

iv. Select "Receive". Additional labels will print. Receive the additional labels and attach them to the urine container.

v. Record the total volume of the urine jug on the urine card and how many jugs were received with the order. Initial Card.

vi. Select the “Result Entry” tab. Record the number of jugs received and the total volume of urine. Enter the collection period specified in Lab Comments. If the Lab Tech note under Lab Comments does not specify a time to enter (eg. enter 24 hours into the Collection Period) specimen collection information is missing. Enter the information in Specimen Update. You do not have to Verify Results, they will automatically save.

vii. Properly label aliquot tubes with the Total Volume of urine and your initials.

viii. You will need 2 tubes. The first aliquot tube will end in .2. Fill this tube to the halfway mark. In Urinalysis, it will spin in the centrifuge and go to the Automated Line for testing.

ix. The second tube is an extra tube. This tube can be filled all the way to the top. This tube is saved in case more tests are added.

x. Cap and parafilm urine tubes.

xi. Place a “Family Birth Center STAT” Label on Red Bag. This will be a visual cue to everyone handling the urine, that the specimen needs to be processed and tested STAT.

xii. Put the 24-hour urine tag in the pocket of the bag and place the 2 parafilmed, aliquot tubes in the zipper part of the bag.

xiii. Send to Core Laboratory using the pneumatic system.

xiv. Call Urinalysis extension(18064) to notify them that a Family Birth Center (FBC) urine is on the way and is to be run STAT.

C. **Use of P-Splitter™**

1. The P-Splitter™ is a container set that is used when more than one assay is required on a single 24-hour urine, and the tests require different preservatives. Each set

contains the following:

a. two 2-liter amber collection bottles, banded together, with screw caps
b. one splitter funnel
c. two red stoppers
d. a disposal bag for the funnel

2. Lab will supply the following:
    a. aqua collection tags w/ fasteners
    b. printed instructions (stickered) for Nursing use of P-Splitter™.
3. The Stat Lab Assistant/Tech will pre-assemble the P-Splitter™ set as follows:
    a. Insert the splitter funnel securely into the two amber collection bottles.
    b. Affix a printed instruction sticker label to each container.
    c. Place the two red stoppers into the plastic disposal bag.
    d. Fold the bag and tape securely to one container, under its handle.
    e. Attach aqua collection tags to the handle of each container.
    f. Note **1A** on one collection tag and **1B** on the second tag on the bottom of the tags **in place of the container ___ of ___. This will identify the containers as belonging to the same P-Splitter™ set.**
4. The pre-printed sticker label instructions for using P-Splitter™ containing the following information is attached:
    a. Loosen caps of both containers
    b. **Pour** each urine sample through the P-Splitter™ funnel
    c. Follow through with a quick, uninterrupted pouring motion. Do NOT dribble or pour slowly
    d. Keep the urine level as high in the funnel as possible
    e. Disassemble the P-Splitter™ after collection is complete
    f. Tighten caps of both containers
    g. Remove and dispose of P-Splitter™ funnel
    h. Insert two red plugs into container holes
    i. Cover plugs completely with attached labels
    j. Do NOT remove elastic band holding containers

D. **Dispensing the P-Splitter™ from Stat Lab**

1. When the Technologist/Assistant determines that a P-Splitter™ set is appropriate for the labels presented, he/she will retrieve a pre-assembled set from the Storeroom. Follow the preceding instructions for preparing a 24-hour Urine container with the following differences.
    a. ***Dispense one half*** of the required preservative(s) to each respective

container.

b. Label ***each*** respective container tag with appropriate information required (ie. test(s) requested, preservative, expiration label dated 6-months from today's date - if preservative dispensed, appropriate safety labels and your initials).

c. Instruct Nursing that ***the containers must NOT be separated***.

d. Should Nursing require a second P-Splitter™ set during the 24-hour period to complete the 24-hour collection (i.e. volume of urine will exceed 4 liters), dispense the second set with preservatives, labeling etc. exactly as above. Label this set however as **2A** and **2B** to indicate that a second set is being collected ***for the same tests, same 24-hour period***. Hold the 1st set in Stat Lab's refrigerator labeled ("IN PROGRESS") until the 2nd set is delivered at the end of the 24-hour period. Patient Transportation will deliver both P-Splitter™ sets to Core Lab for specimen processing.

E. **Receiving Completed 24-hour Urine Inpatient Collection Containers in Stat Lab**

1. Nursing will return the 24-hour urine container or P-Splitter™ set to Stat Lab at the completion of the 24-hour collection period.
2. NOTE: Nursing is expected to document specimen collection in the computer at the end of the collection period, complete the attached collection tag(s) with beginning and end dates/times of collection, and deliver all containers to Stat Lab's reception window.
3. **While the delivery person waits**, the Stat Lab Technologist/Assistant will review the tag(s) and label(s) for accuracy/completeness, confirm the specimen is *collected* in the computer and receive the specimen along with all additional labels that print. **IF collection problems are discovered, Nursing must resolve before Stat Lab can accept the specimen.**
4. The Stat Lab Assistant/Tech will refrigerate the specimen(s) in Stat Lab.
5. Patient Transportation Services will pick-up and deliver all 24-hour Urine collection containers to Core Lab for Front Desk processing.

F. **Processing 24-hour Urine Containers at the Front Desk, Core Lab**

1. The Front Desk Tech processes each 24-hour urine container received. (See procedure, 24-Hour Urine Processing). There are notable exceptions for handling a P-Splitter™ set:

a. ***Never*** mix P-Splitter™ containers from the same set (i.e. 1A, 1B) together.

b. Reject a specimen which has been separated from the container set.

c. Add the two volumes ***on paper*** and report as total volume (TV) collected for the 24-hour period.

d. Prepare aliquots as needed from each container. Print all labels associated with urine order—labels will indicate aliquots for each testing area, pH, extra tube etc. Write the TV on all labels.

e. Record beginning/end dates and times of collection and TV in the

Laboratory Information system (LIS).

f. Be certain all labels and order numbers are accounted for.

g. Should a 2nd P-Splitter™ set be required, (i.e. over 4 L per 24-hour period), do combine volumes of 1A, 2A together and 1B, 2B together before pouring over aliquots.

VI. CALCULATIONS AND INTERPRETATIONS:

Measure TV and record as described above.

VII. REPORTABLE RANGE:

A. (AMR) Analytical Measurement Range = *See specific analyte procedure*

B. (CRR) Clinically Reportable Range = *See specific analyte procedure*

VIII. REFERENCES:

1. Package Insert for P-Splitter™

Attachments

Precautions for 24-Hour Urine Collections with Preservatives.pdf

Approval Signatures

Step Description	Approver	Date
Medical Director	Ann Marie Blenc: System Med Dir, Hematopath	4/17/2023
Policy and Forms Steering Committee Approval (if needed)	Colette Kessler: Mgr, Division Laboratory	4/5/2023
Policy and Forms Steering Committee Approval (if needed)	Gail Juleff: Project Mgr Policy	4/5/2023
Lab Chemistry Best Practice Committee	Caitlin Schein: Staff Physician	4/5/2023
Lab Chemistry Best Practice Committee	Qian Sun: Tech Dir, Clin Chemistry, Path	3/28/2023

Colette Kessler: Mgr, Division Laboratory	3/28/2023