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Kaiser Permanente Medical Care Program California Division - South	SCPMG Laboratory Systems PreAnalytic Processing Procedure

Urinalysis and Urine Culture Processing Guidelines

Purpose

This procedure provides instructions for preanalytical processing of urinalysis and/or urine culture collections.

Scope

This procedure is intended for staff who provide patients with supplies for urine collections and staff who perform preanalytical processing steps prior to submission to the testing laboratory.

Policy

- Sterile containers are provided to patients with an order for urinalysis and urine culture.
  - Specimens collected in a non-sterile container may be accessioned for Urinalysis only.
- Plating for culture (primary inoculation)may be performed by unlicensed personnel (Laboratory Assistants) under direct and constant supervision of a qualified individual.
- Urine culture specimens collected in a sterile cup and stored/transported at ambient temperature must be aliquoted into grey top tube or plated within 2 hours of collection.
  - Urine culture specimens collected in a sterile cup and stored/transported refrigerated must be aliquoted into grey top tube or plated within 24 hours of collection.
- Urinalysis specimens collected in a sterile/non-sterile cup and stored/transported at ambient temperature are stable for 2 hours post collection.
  - Urinalysis specimens collected in a sterile/non-sterile cup and stored/transported refrigerated temperature are stable for 24 hours post collection.

Equipment

- Urine Specimen Containers and Transport Containers
- Transfer pipettes

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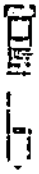
Urinalysis and Urine Culture Processing Guidelines, Continued

Supplies

The following contains the list of supplies, minimum volume and specimen stability specifications post collection.

Collection containers

Description	Minimum volume	Stability
Sterile Screw-Cap Container (StrlCont or Strl Cup) Various color caps 	• No set minimum volume • Dead space when resting flat	Ambient: 2 hours Refrigerated: 24 hours
BD Urinalysis Preservative conical urine tube (REF#BD 364992) 	• Minimum fill line: 7 mL • Maximum fill line: 9 mL	Ambient: 72 hours
BD Vacutainer Plus C&S Preservative Tube (REF#BD 364951) 	• Minimum fill line: 4 mL	Ambient: 48 hours

Note: Tiger and grey top tubes shown above are preferred aliquot containers for urinalysis and urine culture testing.

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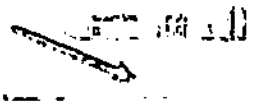
Urinalysis and Urine Culture Processing Guidelines, Continued

Supplies, continued

Description	Minimum volume	Stability
Conical urine non-preservative tube	• No set minimum volume Dead space	Ambient: 2 hours Refrigerated: 24 hours
BD Urinalysis Conical urine tube (REF# BD 364980) 	• Capacity: 8 mL No set minimum volume	Ambient: 2 hours Refrigerated: 24 hours
BD Urinalysis round bottom urine tube (REF# BD 364979) 	• Capacity: 10 mL No set minimum volume	Ambient: 2 hours Refrigerated: 24 hours

Description
Urine Transfer Straw 
Biplate of Blood Agar: BAP; trypticase soy agar with 5% sheep blood) / MacConkey Agar (MAC) 
1:1000 calibrated loop (light green)
1:100 calibrated loop (blue)

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Urinalysis and Urine Culture Processing Guidelines, Continued

Safety

Refer to the safety manual for general safety requirements.

Before you begin-Orders

Provider may place either an order or order set (usually based on symptoms/age/diagnosis).
An order set contains more than 1 orderable (e.g., URINE CULTURE, PREGNANCY+ URINALYSIS, AUTOMATED)

KPHC Order Name	Cerner Display Name	Cerner Label	Sterile Collection Cup required?
REFLEX ORDER			
URINALYSIS, AUTOMATED W REFLEX TO MICROSCOPY AND CULTURE	UA wRfx C	UA wRfx C	YES
Not orderable in KPHC-will reflex on same accession number if qualifies	C Urine	C URINE	YES
STANDALONE CULTURE ORDER			
URINE CULTURE, PREGNANCY	Urine Culture (in Pregnancy)	UR-PG	YES
URINE CULTURE	Urine Culture	URCUL	YES
URINE CULTURE, TRANSPLANT PROTOCOL	Urine Transplant Culture	UR-TR	YES
URINE CULTURE, STERILE COLLECTION	Urine Culture (1:100)	C UR 1:100	YES
STANDALONE URINALYSIS ORDER			
URINALYSIS, AUTOMATED	Urinalysis, Auto WO Micro	UANoMicro	NO
URINALYSIS, MICROSCOPY	Urinalysis, Microscopic Only	UA MICRO	NO

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Urinalysis and Urine Culture Processing Guidelines, Continued

Before you begin-Orders, continued

KPHC Order Name	Cerner Display Name	Cerner Label	Sterile Collection Cup required?
HOLD FOR POSSIBLE ADD-ON CULTURE ORDER (RESTRICTED TO INPATIENT)			
URINALYSIS FOLEY CATHETER, AUTOMATED	Urinalysis Foley Catheter	UA Foley	YES
URINE CULTURE FOLEY *(new accession number generated in Cerner)*	URCx Foley	URCx Foley	YES

Procedure

Follow the steps below to determine the proper collection container and patient collection instructions to hand out to the patient when they present.

Step	Action
1	LABEL COLLECTION CONTAINER Staff will label UR 25 or other sterile cup collection container(s) with patient label (Health Connect preferably) with at least two patient identifiers. • Cerner labels will be obtained once collection is completed.
2	DISTRIBUTE PATIENT INSTRUCTIONS Provide patient with Clean Catch Urine instructions (found in LabNet) for all urinalysis and urine culture collections. • See specific instructions in LabNet for other urine tests
3	INSTRUCT PATIENT VERBALLY Staff will verbally direct patient to restroom to void urine and where to return container. (Specified drop area or warm hand off to laboratory staff).

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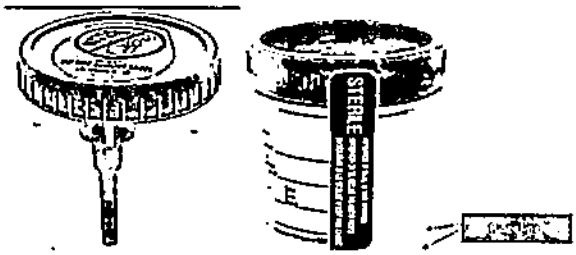
Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure, continued

Step	Action
4	**ASSESS COLLECTION VOLUME**  If specimen is collected in a sterile cup, determine if volume is adequate for test(s) ordered. NOTE: Some sterile cups may have a ridgeline to help in assessing adequate volume. **If ... / Then specimen volume is...** Specimen volume is at or above ridgeline → **Adequate** volume for both UA and Urine Culture. Proceed to next step. Specimen is below ridgeline → **Low volume** (Non-automated UA and plating required for culture) OR **Extremely low volume** (not adequate for tests ordered). For specimens determined to be **extremely low volume**, follow local protocol (contacting provider for prioritization of tests ordered/cancellation of tests)

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Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure, continued

Step	Action
5	**ACCESSION AS COLLECTED** • Verify collection is in a sterile cup for order(s) for culture/reflex culture orders. • Update patient order(s) to collected and receive specimen in applicable computer systems (KRMS, Cerner etc.) following current procedures. – Accession labels "A" and "B" print for **UA wRfx C** and **UA Foley** (same accession number) – NOTE: Log in accession A/B in tandem – Separate accession numbers are assigned for all other UA and Culture orders
6	**REVIEW FOR ADDITIONAL URINE TESTS ORDERED** CLS/MLT and/or Laboratory Assistant will review tests ordered on urine specimen

If...	Then...
Additional tests are ordered for urine specimen	Accession and aliquot after processing for UA/Culture orders if volume is sufficient for other tests.
No additional tests are ordered for urine specimen	Proceed to next step.

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Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure, continued

Step	Action
7	PROCESSING/ALIQUOTING If "A" and "B" accession labels are generated for the order, use "A" label for urinalysis tube and "B" label for grey top tube or culture plates.

If ...	And...	Then...
Adequate volume	Specimen submitted in sterile cup	• Aliquot to tiger top tube for UA and/or grey top for culture • Label tubes with appropriate Cerner accession label
Adequate volume	Specimen submitted in tiger top tube and grey top	• Label tubes with appropriate Cerner accession label (if not labeled with MediCopia labels)
Low volume	Collection location performs UA/inoculates plates	• Plate urine for culture, label **UA wRfx C** with "B" accession label • Refrigerate urine cup, label **UA Foley order** "B" label
Low volume	Collection location does **not** perform UA/inoculates plates for urine culture	• Place both culture and UA accession labels on sterile cup. Go to next step to transfer sterile cup.
Extreme Low Volume		Cancel orders following local protocol

See separate sections below for aliquoting and plating of urine specimens.

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Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure, continued

Step	Action
8	**TRANSFER TO TESTING LABORATORY AS REQUIRED** Process specimens for transport to testing laboratory as required-assess all collection volumes to be adequate prior to placing on transfer list. • If UA testing and plating of low volume specimens for urine culture is not performed in collection laboratory transfer specimens to appropriate laboratory for plating. –Note: Specimens not in aliquot tubes (sterile collection cup) should be held/transported refrigerated to extend stability
9	**DISCARD OF GREY TOP TUBES/CULTURE PLATES** Grey top tubes and culture plates are discarded when either condition is met: • Order is **UA wRfx C** and after urinalysis is completed the specimen is not qualified for urine culture. • Order is **UA Foley** and provider has not initiated an add on culture order within 24 hours of collection.

Procedure-Aliquoting using Transfer Straw

For specimens with **adequate volume** (>3mL) follow the steps below for aliquoting into the appropriate tubes.

Step	Action
1	Mix urine by swirling container gently. NOTE: Urine culture and urinanalysis specimen(s) must be aliquoted within 2 hours to the grey and/or tiger top tube. If unable to transfer within 2 hours specimen may be refrigerated up to 24 hours prior to aliquoting.
2	Remove transfer straw from packaging being careful not to contaminate the transfer straw tip.
3	Submerge transfer straw aseptically into urine specimen • Tilt the container at an angle if urine volume is limited.
4	Place evacuated grey top tube into the holder with the stopper down. Push the tube down over the puncture point to pierce the stopper.

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Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure-Aliquoting using Transfer Straw, continued

Step	Action
5	Hold in position until urine stops flowing into tube.
6	Remove grey top tube from transfer device and set aside.
7	Repeat steps 4-6 above to fill tiger top tube.
8	Lift transfer device and allow urine to drain from straw. • Treat transfer straw as a contaminated sharp and discard in a sharps container • If cup lid contains piercing needle, discard in sharps container
9	Mix grey top and/or tiger top tubes 8 to 10 times by inversion.
10	Label tube(s) with the Cerner accession label(s).
	Transfer grey tops to RRL as follows.

If Cerner label...	And...	Then ...
UA wRfx C	Urinalysis is completed at collection site	• Once UA test is completed, a reflex order of C Urine will be ordered by SYSTEM if indicated. • CLS will relabel grey top with Accession label "C" and place in designated area for transfer to testing lab.
UA wRfx C	Urinalysis is NOT completed at collection site	Transfer grey top to testing laboratory performing UA.
URCULT UR-PG UR-TR C UR 1:100 C Urine URCx Foley		Transfer grey top to testing laboratory performing culture (RRL)

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Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure-Aliquoting using Transfer Straw, continued

Step	Action
11	Follow current processes to transfer grey top specimens to appropriate testing laboratory.

Procedure-Plating

Follow the steps below for plating of cultures when specimen submitted is **low volume** (<3mL).

Step	Action
1	When specimen submitted for urine is determined to be **low volume** (<3mL) specimen is plated on the Bi-plate media (TSA-II/MacConkey Agar) before being sent to the RRL.
2	Mix specimen thoroughly by swirling urine cup or inverting BD urine tube.
3	Follow the table below to determine which sized sterile loop is required for plating the BAP/MAC bi-plate(s)

If Cerner label...	Then ...
UA wRfx C, UA Foley URCULT, UR-PG, OR UR-TR	• Inoculate 1 bi-plate • Use a sterile loop calibrated to deliver 0.001 mL (1 uL) of urine [1:1000] • Label plate with appropriate Cerner accession label.
C UR 1:100	Inoculate 2 bi-plates • **Plate 1:** Use using a sterile loop calibrated to deliver 0.001 mL (1 uL) of urine [1:1000] • **Plate 2:** Use sterile loop calibrated to deliver 01 ml (10 uL) of urine [1:100] – Label each bi-plate with the corresponding dilution

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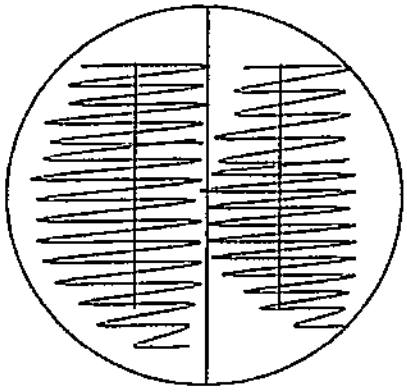
Urinalysis and Urine Culture Processing Guidelines, Continued

Procedure-Plating, continued

Step	Action
4	Dip the tip of the loop into the urine specimen. • Streak down the center of one side of the bi-plate (TSA-II/BAP side). • Next streak the entire side just inoculated with perpendicular lines. • Dip the tip of the loop again into the urine specimen. • Streak down the center of the other side of the bi-plate (MAC side) • Then streak the entire side just inoculated with perpendicular lines.  TSA II/BAP MAC
6	Follow current processes to transfer inoculated plates to appropriate testing laboratory.

Controlled Documents

The following controlled documents support this procedure.

PreAnalytical Processing
Packing and Transporting of Clinical Pathology and Cytology Specimens to the Regional Laboratories
Instructions for Use-Incubator Carrier Tote

Non-Controlled Documents

The following non-controlled documents support this policy.

College of American Pathologists Laboratory General and All Common checklists
California Code, Business and Professions Code - BPC § 1269

Authors

- PreAnalytic Processing Working Group

Signature Manifest

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Name/Signature	Title	Date	Meaning/Reason
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Quick Approval

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