

Microbiology Reader	Document No. MICR 6380 R Page 1 of 5
Urine Cultures	Origination: 08/2004 Version 3

POLICY STATEMENT	Urinary tract infection or UTI is one of the most commonly encountered infectious diseases. Urine is a normally sterile body fluid and is easily contaminated by normal flora from the perineum, prostate, urethra or vagina. A colony counts must always accompany urine cultures to determine significance of the organism isolated.
PURPOSE	This procedure provides technical instruction for the performance of the Urine Cultures.
SCOPE	This procedure applies to testing personnel authorized to perform testing. This group includes, but is not limited to Laboratory Technologists as well as leads and supervisory personnel.
RESPONSIBILITY	All the above personnel are responsible for following the Urine Culture procedure without exception. In addition, testing personnel are also responsible for evaluating the results and taking proper remedial action.
RELATED DOCUMENTS	MICR 6140 R Specimen Processing MICR 6305 R Bacterial Cultures

SPECIMEN HANDLING

See *MICR 6140 R Specimen Processing*

CULTURE WORKUP

1. Examine all plates for macroscopic growth at 24 hours
2. If the culture was processed after 4pm and reincubate plates an additional 24 hours.
3. Determine colony count of each isolate by multiplying the number of colonies on the BAP by 100 or 1000 depending on the loop used.
 - White 0.001 ml loop; 1 colony = 1000 CFU/ml
 - Clean catch and Catheter specimens

Microbiology Reader	Document No. MICR 6380 R Page 2 of 5
Urine Cultures	Origination: 08/2004 Version 3

- Blue 0.01 ml loop; 1 colony = 100 CFU/ml
 - Suprapubic aspirate, cystoscopy, nephrostomy and pediatric (≤ 12 yrs old) catheterized specimens
4. Do not identify normal flora to genus or species level
- Urogenital flora
 - Lactobacilli
 - Diphtheroids
 - Gardnerella
 - Streptococcus viridians
 - Low numbers of Gram negative rods and Enterococcus
 - Skin flora
 - Diphtheroids,
 - Staphylococcus sp.
5. Perform identification of uropathogens and antimicrobial susceptibility testing (AST) if appropriate according to the following guidelines:
- Uropathogens
 - Gram Negative Bacilli
 - Staphylococcus aureus
 - Staphylococcus coag negative
 - ID and AST if in pure culture $\geq 50,000$
 - ID and AST only if concentration $>10x$ total count of all other isolates
 - Enterococcus
 - β -Hemolytic Strep - *Streptococcus agalactiae* should be reported from women in childbearing years (14 to 50 years old) regardless of count.
 - Gardnerella - ID only if concentration $>10x$ total count of all other isolates
 - Aerococcus urinae
 - ID only if concentration $>10x$ total count of all other isolates
 - α -hemolytic strep colony, Gram positive cocci in cluster/tetrads
 - Yeast - ID *Candida albicans* and *Candida glabrata*

Microbiology Reader	Document No. MICR 6380 R Page 3 of 5
Urine Cultures	Origination: 08/2004 Version 3

CLEAN CATCH and INDWELLING FOLEY CATHETER SPECIMENS		
Number of isolates	Colony Count (CFU/ml)	Extent of Work Up
1	<10,000	Minimal ID
	≥10,000	ID and AST
2	Both <10,000	Minimal ID
	Both ≥10,000	Both - ID and AST
	1 isolate ≥ 10,000	ID and AST
	1 isolate <10,000	Minimal ID
≥3	1 isolate ≥100,000	ID and AST
	2 isolates <10,000	Minimal ID
	Any other amount	<p>Check the UA WBC and leukocyte esterase results.</p> <p>If normal: Report colony count and add comment NGMSPC = "Multiple Species present – Probable contamination. Suggest Repeat Specimen"</p> <p>If abnormal or no UA: Minimal ID of 3 isolates with colony count and add comment CALMIC= "Contact Microbiology within 72 hours if definitive identification is clinically indicated."</p> <p>If >3 isolates, Report colony count and add comment NGMSPC = "Multiple Species present – Probable contamination. Suggest Repeat Specimen"</p>

Microbiology Reader	Document No. MICR 6380 R Page 4 of 5
Urine Cultures	Origination: 08/2004 Version 3

STRAIGHT CATHETER, SUPRAPUBIC ASPIRATE, CYSTOSCOPY, NEPHROSTOMY and PEDIATRIC (≤ 12) CATHETER SPECIMENS		
Number of isolates	Colony Count (CFU/ml)	Extent of Work Up
1	<1,000	Minimal ID
	≥1,000	ID and AST
2	Both <1,000	Minimal ID
	Both ≥1,000	Both - ID and AST
	1 isolate ≥ 1,000	ID and AST
	1 isolate <1,000	Minimal ID
≥3	1 isolate ≥10,000	ID and AST
	2 isolates <1,000	Minimal ID
	Any other amount	Minimal ID of <u>3 isolates</u> with colony count and add comment CALMIC= "Contact Microbiology within 72 hours if definitive identification is clinically indicated." If >3 isolates, Report colony count and add comment NGMSPC = "Multiple Species present – Probable contamination. Suggest Repeat Specimen"

6. Physicians may request additional work up by ordering "MICRO ADD ON TO CULTURE WORKUP" and specifying their request.

Microbiology Reader	Document No. MICR 6380 R Page 5 of 5
Urine Cultures	Origination: 08/2004 Version 3

REPORTING

- Enter report of “No growth in 24 hours” if no growth on all media.
- Enter preliminary report of “No growth after <24 hours” or “Culture in Progress) if the culture was processed after 4pm and reincubate plates an additional 24 hours.
- If only urogenital or skin flora is present report the following with colony count:
 - NSF = Normal Skin Flora
 - NUF = Normal Urogenital Flora
 - MSF = Mixed Skin Flora
 - MUF = Mixed Urogenital Flora
 - MSUF = Mixed Skin & Urogenital Flora
- Report individually significant pathogenic organisms with colony count and AST if appropriate.
- Enter all results in the appropriate spot in the Meditech workcard.

REFERENCES:

Garcia, Lynne, *Clinical Microbiology Procedure Handbook*, 3rd Edition, 2010, Volume 1, Section 3.12 Urine Cultures.

Sharp, Susan; Yvette McCarter, Gerri Hall, Eileen Burd, Marcus Zedrvos, Cumitech 2C – Laboratory Diagnosis of Urinary Tract Infections, 2009