

SOURCE	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
ABSCESS (ALSO LESION, WOUND, PUSTULE, ULCER)						
SUPERFICIAL	WITHIN 24 HRS/RT	GRAM STAIN / CORRELATED W/MACROSCOPIC FINDINGS	S. aureus Strep sp. groups A,B,D S. pneumoniae Enterobacteriaceae Candida albicans	Dependent upon site; however, contamination From skin commensals (e.g. S. epidermidis, viridans group Strep., coryneforms etc.) is possible	All possible pathogens, regardless of quantity, require definitive ID and AST. All other organisms, including commensals are reported as presumptive	See Appendix B All coag negative Staph are reported as Staph sp. not aureus all cultures held for minimum of 48 hours
DEEP WOUND Includes Aerobic & Anaerobic culture(ex: from surgical site) and Gram Stain (order as DEEP Wound Culture)	WITHIN 24 HRS/RT	GRAM STAIN / CORRELATED W/MACROSCOPIC FINDINGS	S. aureus, Strep sp. groups A,B,D, S. pneumoniae, Enterobacteriaceae Bacteroides, Porphyromonas, Prevotella, Fusobacterium, Pseudomonas sp. and other non - Enterobacteriaceae Candida albicans, C. perfringens, Anaerobic cocci, Actinomyces	Dependent upon site; however, contamination From skin commensals (e.g. S. epidermidis, viridans group Strep. etc.) is possible.	All possible pathogens, regardless of quantity, require definitive ID and AST. All other organisms, including commensals are reported as presumptive	See Appendix B All coag negative Staph are reported as Staph sp. not aureus (with the exception of pure cultures of Staph lugdenesis) all cultures held for minimum of 48 hours

BLOOD OR BONE MARROW	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
- BLOOD UNIT – TRANSFUSION REACTION - BLOOD CULTURE	WITHIN 2 HRS/ RT	GRAM STAIN WHEN GROWTH DETECTED	S. aureus S. epidermidis Enterobacteriaceae N. meningitides H influenza Strep sp. Viridans gp. Strep Pseudomonas sp. Listeria Bacteroides C. perfringens Fungi	N/A - Sterile fluid; however, contamination From skin commensals (e.g. S. epidermidis, viridans group Strep., coryneforms etc.) is possible	Sterile fluid – all organisms will require definitive ID and AST.	If a coag negative Staph (“Staph sp. not aureus”) is recovered only in 1 of 4 bottles, no further identification/ AST is performed unless directed by the physician Routinely, Bottles held for 5 days; up to 30 days for fungus
• BONE MARROW	IMMEDIATELY/RT	GRAM STAIN	SENT TO REFERENCE LAB			

BODY FLUIDS	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
AMNIOTIC, ABDOMINAL, ACITIES (PERITONEAL), BILE, SYNOVIAL (JOINT), PERICARDIAL, PLEURAL Aerobic & Anaerobic culture included w/Gram Stain	IMMEDIATELY/RT	GRAM STAIN BY CYTOSPIN	N/A	N/A	Sterile fluid – all organisms will require definitive ID and AST.	all cultures held for minimum of 72 hours

BONE	IMMEDIATELY/RT	PLACED IN THIO BROTH	N/A	N/A	Sterile – all organisms will require definitive ID and AST	all cultures held for minimum of 72 hours
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CEREBROSPINAL FLUID	IMMEDIATELY/RT	GRAM STAIN BY CYTOSPIN / CORRELATED W/MACROSCOPIC FINDINGS AND CELL DIFFERENTIAL	*See chart below	N/A	Sterile fluid – all organisms will require definitive ID and AST.	all cultures held for minimum of 72 hours
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* 0 to 6 month	* 6 month to 6 years	* 6 years to 40 years	* over 40 years
Enteric bacilli	Streptococcus pneumoniae	Streptococcus pneumoniae	Neisseria meningitidis
Streptococcus pneumoniae	Haemophilus influenzae		Streptococcus pneumoniae
Beta hemolytic Streptococcus	Neisseria meningitidis		Enteric bacilli
			Staphylococcus aureus

EAR	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
Otitis Externa (Ordered as EAR Culture)	IMMEDIATELY/RT	GRAM STAIN	P. aeruginosa, H. influenzae, S. pneumoniae, Proteus sp., Strep sp. groups A,B,D, Enterobacteriaceae Candida sp. Aspergillus sp.	Rather sparse; C. acnes, S. aureus, and Enterobacteriaceae, are encountered. Non-C. albicans and P aeruginosa are found on occasion	Acute: S. aureus, S. pyogenes, Pseudomonas; other gram negative bacilli Chronic : P. aeruginosa; anaerobes	Anaerobic susceptibilities are performed only by request – sent to Mayo all cultures held for minimum of 48 hours
Otitis Media (Ordered as EAR Culture)	IMMEDIATELY/RT	GRAM STAIN	P. aeruginosa, H. influenzae, S. pneumoniae, Proteus sp., Strep sp. groups A,B,D, Enterobacteriaceae	Rather sparse; C. acnes, S. aureus, and Enterobacteriaceae, are encountered. Non-C. albicans and P aeruginosa are found on occasion	Acute: S. pneumoniae, H. influenzae; M. catarrhalis; S pyogenes; Chronic : anaerobes	Anaerobic susceptibilities are performed only by request – sent to Mayo

			Candida sp. Aspergillus sp.			all cultures held for minimum of 72 hours
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EYE	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
CONJUNCTIVA (Ordered as EYE Culture)	WITHIN 24 HRS/RT	GRAM STAIN	H. influenzae Strep pneumoniae, Pseudomonas sp. Moraxella sp.	Rather sparse indigenous flora – S. epidermidis and Lactobacillus spp. are frequently encountered	All potential pathogens are definitively identified	Some of the organisms are fastidious organisms and may take >24 hours to recover all cultures held for minimum of 48 hours
CORNEAL SCRAPINGS (Ordered as EYE Culture)	IMMEDIATELY/ RT	GRAM STAIN	H. influenzae Strep pneumoniae, Pseudomonas sp. Moraxella sp.	N/A	All potential pathogens are definitively identified	all cultures held for minimum of 48 hours

FOREIGN BODIES	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
CATHETER TIP – CENTRAL LINE ONLY (Ordered as Catheter Tip Culture)	WITHIN 2 HRS/4°C	PLACED IN THIO BROTH	N/A	N/A	Definitive ID and AST if pure	all cultures held for minimum of 48 hours
PORT-A-CATH TIP (Ordered as Catheter Tip Culture)	WITHIN 2 HRS/4°C	PLACED IN THIO BROTH	N/A	N/A	Definitive ID and AST if pure	all cultures held for minimum of 48 hours

GI TRACT	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	ENTERIC PATHOGENS WE SCREEN FOR	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
BOWEL CONTENTS	IMMEDIATELY/RT	GRAM STAIN				all cultures held for minimum of 48 hours

• GASTRIC ASPIRATE/WASHINGS	IMMEDIATELY / 4°C					all cultures held for minimum of 48 hours
• GALL BLADDER	WITHIN 24 HRS/RT	GRAM STAIN				all cultures held for minimum of 48 hours
• RECTAL SWAB	WITHIN 24 HRS/4°C	GRAM STAIN	Salmonella, Shigella, Campylobacter			all cultures held for minimum of 48 hours
• STOOL	WITHIN 24 HRS/4°C	GRAM STAIN	Salmonella, Shigella, Campylobacter C. difficile Giardia		N/A	all cultures held for minimum of 48 hours
• O&P	WITHIN 24 HRS/RT	N/A	SENT TO REFERENCE LAB (consider travel history? Order Giardia/Crypto if no travel history)			

GENITAL TRACT	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
FEMALE						
• BARTHOLIN CYST/ABSCESS	WITHIN 24 HRS/RT	GRAM STAIN				all cultures held for minimum of 72 hours
• CERVIX – ROUTINE	WITHIN 24 HRS/RT	GRAM STAIN				all cultures held for minimum of 72 hours
• CUL-DE-SAC – VAGINAL SWAB	WITHIN 24 HRS/RT	GRAM STAIN				all cultures held for minimum of 72 hours
• URETHRA	WITHIN 24 HRS/RT	GRAM STAIN		- Lactobacilli -Corynebacterium -G. vaginalis		all cultures held for minimum of 72 hours

				-coag negative Staph -Group B Strep -Enterococcus sp. -E. coli -yeast -various anaerobes Males -Coagulase negative Staph -Micrococcus -Corynebacterium -viridans group Streptococcus		
VAGINAL	WITHIN 24 HRS/RT	GRAM STAIN / BACTERIAL VAGINOSIS SCREEN ^A		- Lactobacilli -Corynebacterium -G. vaginalis -coag negative Staph -Group B Strep -Enterococcus sp. -E. coli -yeast -various anaerobes		all cultures held for minimum of 72 hours <i>*If Trichomonas vaginalis is suspected, order Vaginitis Panel(results include Candida, T. vag, and bacterial vaginosis)-60 minute test</i>

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BACTERIAL VAGINOSIS SCREEN					
QUANTITATION OF BACTERIAL MORPHOTYPE	SCORE PER MORPHOTYPE/OIL IMMERSION FIELD (OIF)				
	NONE (0/OIF)	1 + (< 1/OIF)	2 + (1-5/OIF)	3 + (6-30/OIF)	4 + (> 30/OIF)
Medium to Large Gram Positive Rods	4	3	2	1	0
Small Gram Negative or Gram Variable rods or Coccobacilli	0	1	2	3	4
Small Curved Gram Negative or Gram Variable rods	0	1	1	2	2

A. Interpretation of results:

- 1.) Total score = 0 – 3 = Normal
- 2.) Total score = 4 – 6 = Intermediate
- 3.) Total score = 7 – 10 = A diagnosis of Bacterial Vaginosis can be made. Add the following
Note: "Direct smear Suggests Bacterial Vaginosis" (DBV).

HAIR, NAILS, OR SKIN SCRAPINGS (FOR FUNGAL CULTURES)	WITHIN 24 HRS/RT		Yeast/Fungus			Sent to Quest Lab
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RESPIRATORY	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
LOWER						
• BORDATELLA PERTUSSIS (WHOOPING COUGH)	IMMEDIATELY/RT	SENT TO REFERENCE LAB				
• BRONCHIAL ASPIRATE/ WASHING	WITHIN 24 HRS/RT	GRAM STAIN				
• SPUTUM	WITHIN 24 HRS/RT	GRAM STAIN				
• TRACHEAL ASPIRATE	WITHIN 24 HRS/RT	GRAM STAIN				

ORGANISM	GUIDELINES FOR WHEN TO ID	SENSITIVITY
Streptococcus pneumoniae	Any amount	Yes – Gram Positive Strep AST Panel
Beta Hemolytic Streptococcus Group A	Any amount	No If sterile body site, yes-gram positive Strep AST panel
Staph aureus	Any amount	Yes – gram positive AST panel
Gram Negative Rods	Moderate to Many	Yes – gram negative AST panel
Yeast	Moderate to Many	No, if needed, must be sent to reference lab
Haemophilus influenzae	Growth of these organisms should be correlated with the gram stain to determine if ID and sensi will be performed. They are only worked up if there is a <u>predominance</u> of morphotypes resembling these organisms on the gram stain and moderate to many on the culture plates.	Beta lactamase only
Neisseria sp (including meningitis)		Beta lactamase only
Moraxella (Branhamella) catarrhalis		No

RESPIRATORY	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	PATHOGENS COMMONLY RECOVERED	COMMENSAL ORGANISMS	FACTORS FOR SUSCEPTIBILITY TESTING	COMMENTS/ CONSIDERATIONS
UPPER						
• MOUTH	WITHIN 24 HRS/RT	GRAM STAIN				
• NASOPHARYNX	WITHIN 24 HRS/RT	GRAM STAIN				

• NOSE/NARES	WITHIN 24 HRS/RT	GRAM STAIN				
• THROAT	WITHIN 24 HRS/RT	GRAM STAIN	Beta Strep Grp A			

TISSUE (Order and Deep Wound Culture) will include Aerobic & Anaerobic culture with Gram Stain)	WITHIN 24 HRS/RT	GRAM STAIN	See DEEP Wound on page 1			
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	TRANSPORTATION TO THE LABORATORY	DIRECT EXAMINATION	FACTORS FOR SUSCEPTIBILITY TESTING		
URINE			1 UROPATHOGEN ^a	2 UROPATHOGENS ^a	≥ 3 UROPATHOGENS ^a
• CLEAN-VOIDED MIDSTREAM	WITHIN 24 HRS/ 4°C	N/A – REFER TO CULTURE CRITERIA (APPENDIX A)	1. If <10,000 col/cc – Presumptive or minimal ID and save plate 2. If ≥10,000 col/cc – Definitive ID and AST 3. If ≥1,000 col/cc if female age is 14-30 years ^b – Definitive ID & Sensi (see Table 1 for criteria for when to perform Sensi)	1. For each that is <100,000 col/cc – Presumptive or minimal ID & Save plate(s) 2. For each that is ≥ 100,000 col/cc – Definitive ID and Sensi	1. For all voided Outpatient and ED urines – Report colony count and mixed bacterial morphotypes <u>and</u> commentary “Probable contamination – Suggest repeat if clinically indicated” is applied. 2. For all inpatient urines or any patient with an indwelling catheter: a. If normal leukocyte esterase (LE) and WBCs on urinalysis report as above.

					b. If LE and WBCs abnormal – Presumptive or minimal ID of each uropathogen with note to contact Lab if Definitive IDs and Sensis are clinically indicated. c. Plates are saved
STRAIGHT CATHETER	WITHIN 2 HRS/4°C	N/A – REFER TO CULTURE CRITERIA (APPENDIX A)	1. For each <1,000 col/cc with normal urogenital and/or skin flora, presumptive or minimal ID and plates are saved 2. If > 1,000 col/cc or any pure culture of lower count uropathogen, Definitive ID and Sensi	1. For each <1,000 col/cc presumptive or minimal ID and plates are saved. 2. For each uropathogen ≥ 1,000 col/cc, Definitive ID and Sensi are performed.	1. For each <10,000 col/cc presumptive or minimal ID is performed and plates are saved. 2. For each ≥ 10,000 col/cc Definitive ID and Sensi is performed <u>or</u> ordering physician to determine extent of workup needed.
INDWELLING CATHETER (FOLEY)	WITHIN 2 HRS/4°C	N/A – REFER TO CULTURE CRITERIA (APPENDIX A)	1. If <10,000 col/cc – Presumptive or minimal ID and save plate 2. If ≥10,000 col/cc – Definitive ID and AST 3. If ≥1,000 col/cc if female age is 14-30 years ^b – Definitive ID & Sensi (see Table 1	1. For each that is <100,000 col/cc – Presumptive or minimal ID & Save plate(s) 2. For each that is ≥ 100,000 col/cc – Definitive ID and Sensi	1. For all voided Outpatient and ED urines – Report colony count and mixed bacterial morphotypes <u>and</u> commentary “Probable contamination – Suggest repeat if clinically indicated” is applied.

			for criteria for when to perform Sensi)		2. For all inpatient urines or any patient with an indwelling catheter: a. If normal leukocyte esterase (LE) and WBCs on urinalysis report as above. b. If LE and WBCs abnormal – Presumptive or minimal ID of each uropathogen with note to contact Lab if Definitive IDs and Sensis are clinically indicated. c. Plates are saved
SUPRAPUBIC ASPIRATE	IMMEDIATELY/RT	N/A – REFER TO CULTURE CRITERIA (APPENDIX A)	1. For each <1,000 col/cc with normal urogenital and/or skin flora, presumptive or minimal ID and plates are saved 2. If > 1,000 col/cc or any pure culture of lower count uropathogen, Definitive ID and Sensi	1. For each <1,000 col/cc presumptive or minimal ID and plates are saved. 2. For each uropathogen $\geq$ 1,000 col/cc, Definitive ID and Sensi are performed.	1. For each <10,000 col/cc presumptive or minimal ID is performed and plates are saved. 2. For each $\geq$ 10,000 col/cc Definitive ID and Sensi is performed <u>or</u> ordering physician to determine extent of workup needed.

- a. If there is mixed urogenital and/or skin flora with a suspected gram positive uropathogen, the laboratory will only work up the uropathogen(s) only if it is 10X greater in amount than the combined UGF. Otherwise, it is reported as “normal urogenital flora”.
- b. Any amount of Group B Streptococcus is reported in this age group. Staph saprophyticus is considered a uropathogen in this age group; however, only a definitive ID will be performed.

APPENDIX A:

CRITERIA FOR CULTURING URINE ORDRED AS “URINALYSIS CII” OR “DIP PROTOCOL CII”

URINE IS CULTURE IF IT MEETS FOLLOWING CRITERIA:

NITRITES ARE POSITIVE

OR

LEUKOCYTE ESTERASE IS $\geq$ “SMALL” AND SQUAMOUS EPITHELIAL CELLS ARE $\leq$ 10 SEC/HPF

OR

WBCS ARE >5 WBC/HPF AND SQUAMOUS EPITHELIAL CELLS ARE $\leq$ 10 SEC/HPF

TABLE 1: URINE MICROBIAL FLORA		
Organism(s)		Extent of Workup if Colony Count is appropriate per Table 2
Urogenital (Skin/Urethra/Vaginal)	Strep viridans gp, diphtheroids, Lactobacillus sp, anaerobes, Staph sp not aureus, small numbers of gram negative rods	No workup – Report as Normal Urogenital Flora
Uropathogens	Gram Negative Rods	ID & Sensi
	Staph aureus	ID & Sensi
	Staph sp not aureus	1. ID only if pure or 10X greater in number than all other urogenital flora combined 2. ID of Staph saprophyticus in females of child bearing age 3. No AST – save plate incase sensi is ordered later by Physician
	Yeast	Presumptive ID of C albicans if “stars” on plate within 48 hrs or germ tube if not
	Beta hemolytic Strep	ID – esp. GBS in females of child bearing age or diabetics (report as presumptive GBS based on colony morphology, B-hemolysis, and catalase negative)
	Enterococcus sp	ID and Sensi
	Gardnerella vaginalis	Presumptive ID only if it is the <u>only</u> pathogen recovered and there is no normal urogenital flora or <10,000 col/cc UGF. If UGF is >10,000col/cc consider the G vaginalis as normal urogenital flora also
	Aerococcus urinae	ID only if 10X greater in # than all other urogenital flora combined
	Corynebacterium sp (Urease Positive)	ID only if ≥ 100,00 col/cc <u>and</u> 10X greater in # than all other urogenital flora combined

APPENDIX B

SPECIMEN TYPE	CULTURED FOR ANAEROBES	NOT ACCEPTABLE FOR ANAEROBES
	COLLECTION METHOD	
	Collect with a syringe(* preferred) or Culture Swab Transport System	Collect in a sterile container or Culture Swab Transport System
Body Fluids	Amniotic, Ascitis, Bile, Blood, Bone marrow, Cerebrospinal, Paracentesis, Pericardial, Pleural, Prostate, Seminal, Synovial, Thoracentesis, Transudates	
Ear	Abscess aspirate (Order as Deep Wound)	Ear swab
Exudates	1. Aspirated pus from deep wounds or abscesses 2. If "Sulfur granules" present	Pus from superficial wound or abscess Superficial drainage from wound or abscess
Eye	Deep aspirate	Conjunctival swab or scrapings
Gastrointestinal	Peritonitis fluid	Stool, Gastric, Colostomy, Ileostomy effluent
Genital – Female	Bartholin, Fallopian, culdocentesis, endometrial, Placental, Septic abortion	Vaginal, Cervical, Urethral
Genital – Male	Prostate, Seminal	Urethral
Head, Neck, Dental	Brain, Endodontal aspirate, Carefully collected abscess aspirate	Tongue, Gingivitis, Exudate
Lesions	Deep wounds or abscess	Burn, Cyst, rash, Ulcer, Decubitus
Respiratory	Transtracheal aspirate, Lung abscess aspirate, Carefully collected Sinus aspirate	Throat, Tonsil, Nose, ear, Sputum, Nasopharyngeal, tracheal, Sinus, Bronchial
Surgical	Appendix, Gallbladder, etc.	
Urine	Suprapubic aspirate	Voided midstream, clean catch, catheter

File name: R:\Lab\Laboratory Department Policies\Lab Policies (2025)/Microbiology Chart for hospitalists updated 2.1.25