

Q3 2018 Throat – Urine Culture



American Association of Bioanalysts

5615 Kirby Drive, Suite 870
Houston, TX 77005
800-234-5315 ♦ 281-436-5357



Q3 2018 Throat – Urine Culture

Specimen 1 Urine – 65 year old Female, Dysuria

Organisms	Extent 1	2	3	4	5	Total
943 - Aerobe found; but referred for ID	6	0	0	0	0	6
791 - Enterococcus sp.; NOS	0	0	4	0	0	4
994 - Growth of gram-positive organisms	2	0	1	0	0	3
942 - Primary culture only, refer for ID	2	0	0	0	0	2
993 - Growth of gram-negative organisms	1	0	0	0	0	1
949 - No aerobic growth	1	0	0	0	0	1
944 - Anaerobe found; but referred for ID	1	0	0	0	0	1

TOTAL PARTICIPANTS 18

Flagging appears for failure to report 787, 791, 792, 793, 881, 894, 895, 942, 943, 985, 989 or 994.

Extent 5 flagging appears for failure to report 787, 791, 792, 793, 881, 894, 895, 943, 985, 989 or 994.

In addition to the required organism, participants in all extents may report (No additional codes).

This sample contained *Enterococcus faecalis*.

The urine culture (obtained from indwelling Foley catheter) for this hospitalized patient grew $>10^5$ colony forming units per milliliter (CFU/mL) of pure, nonhemolytic colonies on blood agar, positive for L-pyrrolidonyl- β -naphthylamide (PYR). The uropathogen was identified as *Enterococcus faecalis*. The urinary tract is the most common site from which clinical strains of enterococci are recovered. Although a common cause of community acquired urinary tract infections (UTIs), enterococci are most often associated with nosocomial UTI, particularly in patients with urinary catheterization. The presence of $>10^5$ CFU/mL of a pure uropathogen from an inpatient's urine culture warrants a full identification and susceptibility. Management should include removal of urinary catheters if possible; this intervention alone has been observed to resolve enterococcal urinary catheter-associated infections/colonization in some cases. Although enterococci are intrinsically resistant to low concentrations of β -lactam antibiotics, these agents (e.g., ampicillin) are still the first choice for uncomplicated UTIs (i.e., alternatives: nitrofurantoin or fosfomycin (*E. faecalis*)). For urinary tract infections due to ampicillin- and vancomycin-resistant strains, linezolid or daptomycin may be used.

Specimen 2 Urine - 18 year old Male, Flank pain

Organisms	Extent 1	2	3	4	5	Total
943 - Aerobe found; but referred for ID	6	0	0	0	0	6
994 - Growth of gram-positive organisms	2	0	2	0	0	4
874 - Staphylococcus sp.; coagulase-negative; NOS	0	0	3	0	0	3
942 - Primary culture only, refer for ID	2	0	0	0	0	2
993 - Growth of gram-negative organisms	1	0	0	0	0	1
949 - No aerobic growth	1	0	0	0	0	1
944 - Anaerobe found; but referred for ID	1	0	0	0	0	1

TOTAL PARTICIPANTS 18

Flagging appears for failure to report (No Codes).

In addition to the required organism, participants in all extents may report 873, 874, 878, 942, 943, 949, 989, and 994.

Extent 5 flagging appears for failure to report 873, 874, 878, 943, 949, 989, and 994.

This sample contained *Staphylococcus epidermidis*.

In this case, a voided midstream urine specimen was obtained from an outpatient with flank pain and from which $<10^3$ CFU/mL of *Staphylococcus epidermidis* grew on blood and colistin-nalidixic agar plates (BAP, CNA). Such culture

Q3 2018 Throat – Urine Culture

results are typically reported as “No growth of $\geq 10^3$ CFU/mL”. While infectious syndromes such as cystitis or, more commonly, acute pyelonephritis can be associated with flank pain, other noninfectious causes are possible, as well (e.g., kidney stones, muscle spasm, Crohn’s disease).

Specimen 3 Urine - 23 year old Male, Incontinency

Organisms	Extent	1	2	3	4	5	Total
943 - Aerobe found; but referred for ID		7	0	0	0	0	7
799 - Escherichia coli		0	0	4	0	0	4
942 - Primary culture only, refer for ID		1	0	0	0	0	1
983 - Organism is gram-negative		1	0	0	0	0	1
798 - Escherichia sp.; NOS		0	0	1	0	0	1
994 - Growth of gram-positive organisms		1	0	0	0	0	1
949 - No aerobic growth		1	0	0	0	0	1
993 - Growth of gram-negative organisms		1	0	0	0	0	1
933 - Neg for Sal; Shig; Yers & Campy (referred for Vibrio culture)		1	0	0	0	0	1
TOTAL PARTICIPANTS							18

Flagging appears for failure to report 798, 799, 933, 942, 943, 983, 987 or 993.

Extent 5 flagging appears for failure to report 798, 799, 933, 942, 943, 983, 987 or 993.

In addition to the required organism, participants in all extents may report (No additional codes).

This sample contained *Escherichia coli*.

Strong urges to urinate, and sometimes urinary incontinence can be symptoms of a urinary tract infection, as seen in this case. Quantitative urine culture of a clean-catch urine specimen obtained from this patient grew $\geq 10^5$ CFU/mL *Escherichia coli*. *E. coli* is an organism that, in contrast to the vast majority of organisms encountered in the clinical bacteriology laboratory, can be tested and reported with minimal work-up. That is, oxidase-negative and gram-negative organisms that are spot indole-positive and β -hemolytic on blood agar can be identified as *E. coli*. Alternatively, indole-positive colonies that are nonhemolytic and lactose positive (e.g., MAC, EMB) can be identified as *E. coli* with a negative PYR test.

Specimen 4 Throat - 33 year old Female, Sore throat

Organisms	Extent	1	2	3	4	5	Total
923 - Pos for Grp A strep screen by culture		4	4	2	0	1	11
886 - Streptococcus sp.; beta-hemolytic Grp A (<i>S. pyogenes</i>)		0	0	2	0	0	2
881 - Streptococcus sp.; NOS		0	0	1	0	0	1
922 - Neg for Grp A strep screen by culture		0	1	0	0	0	1
943 - Aerobe found; but referred for ID		1	0	0	0	0	1
921 - Pos for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							17

Flagging appears for failure to report 881, 886, 921, 923, 943 or 976.

In addition to the required organism, participants in all extents may report (No additional codes).

This sample contains *Streptococcus pyogenes* Group A and *Neisseria* spp.

Culture for this patient demonstrated abundant (3+) growth of *Streptococcus pyogenes* and 1+ growth of oxidase-positive, yellow colonies with growth on blood and chocolate agar. *S. pyogenes* or Group A β -hemolytic streptococcus (GABHA) accounts for 30% of pharyngitis cases in children (ages 5 to 15), but only 10% of adult cases. So, while a rare case of acute pharyngitis for this demographic, it can and does occur. Other bacterial causes of pharyngitis include group C and G β -hemolytic streptococci, *Neisseria gonorrhoeae*, *Corynebacterium diphtheria*, and *Arcanobacterium haemolyticum*. However, most cases have a viral etiology (e.g., rhinovirus, coronavirus). Given the emergence of commercial rapid diagnostic tests (RDTs; antigen- and nucleic acid-based) for GABHA and their comparable performance to that of culture, most guidelines are no longer recommending routine culture to back-up negative RDTs (especially, in this age category),

Q3 2018 Throat – Urine Culture

but rather leave the decision to the physician to order when indicated (e.g., outbreak investigations, monitoring the spread of antimicrobial resistance, examination for pathogens other than GABHS). Lastly, the presence of saprophytic *Neisseria* spp. in this culture reflects the presence of commensal organisms in the oropharynx and can be reported as “Usual upper respiratory microbiota”, for example.

Specimen 5 Throat - 18 year old Male, Fever

Organisms	Extent	1	2	3	4	5	Total
922 - Neg for Grp A strep screen by culture		4	4	2	0	1	11
877 - Staphylococcus aureus		0	0	2	0	0	2
923 - Pos for Grp A strep screen by culture		0	1	0	0	0	1
949 - No aerobic growth		1	0	0	0	0	1
873 - Staphylococcus sp.; NOS		0	0	1	0	0	1
TOTAL PARTICIPANTS							16

Flagging appears for failure to report 873, 877, 919, 922, 943 or 975.

In addition to the required organism, participants in all extents may report (No additional codes).

This sample contained *Staphylococcus aureus*.

Semi-quantitative culture of this patient’s throat swab demonstrated abundant (4+) growth of *Streptococcus aureus* for this patient. Importantly, *S. aureus* is a part of the normal upper respiratory flora. While the presence of organisms other than group A streptococci (including *S. aureus*) have been implicated as one explanation for the failure of penicillin alone to prevent recurrent episodes, there is no evidence that this organism causes acute pharyngitis. Therefore, its presence should, therefore, not be reported. Interestingly, this patient presented with fever (i.e., without sore throat) die to an underlying MRSA pneumonia. Heavy *S. aureus* colonization is not uncommon for such patients and can also be clinically significant in patients with recurrent skin and soft tissue infection and other acute invasive infections such as bacteremia, as well. That said, while its presence (as in this case) may be clinically significant, over-reporting of *S. aureus* in this setting may encourage indiscriminate antimicrobial therapy. Rather, physicians can screen these at-risk patients for colonization with *S. aureus* by collecting nasal and/or rectal swabs.