Answering your questions

Urine colony counts

Could you give me the “pros and cons” of doing a total colony count on a urine culture vs. doing individual colony counts on pathogens in a urine culture. We are in the process of standardizing several labs in our system, and this is an issue for which we cannot find much information to reference.

A urine colony counts should always be done per isolate and not as a total colony count of all organisms. For example, if a clean-catch urine culture grew greater than 100,000 cfu/mL of E coli and 5,000 cfu/mL of a coagulase-negative staphylococci (CNS), you would want to report as in Example A, not as in Example B.

Example A) APPROPRIATE
>100,000 cfu/mL E coli
5,000 cfu/mL CNS (or insignificant growth)

Example B) NOT APPROPRIATE
>100,000 cfu/mL E coli and CNS
Example A appropriately confers the culture results, where Example B could lead a clinician to treat for both E coli and the coagulase-negative Staphylococcus, when only treatment of the E coli would be appropriate as the 5,000 cfu/mL of the CNS most likely represents contamination.

Table 1 below lists general guidelines for urine culture interpretation and work up for one or more potential pathogens from urine cultures. Often, we do not receive patient history with our urine specimens for culture. In this case, Table 2 gives general guidelines that might be used.

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Table 1

<table>
<thead>
<tr>
<th>Result</th>
<th>Specimen type and/or patient history</th>
<th>Work-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10^9 cfu/mL of a single PP or for each of 2 PP</td>
<td>CC/MS, IDC from patients with pyelonephritis, acute cystitis, or asymptomatic bacteruria, OR SC</td>
<td>Work up the one or both PP with ID/AST</td>
</tr>
<tr>
<td>&gt;10^8 cfu/mL of a single PP</td>
<td>CC/MS, IDC from symptomatic male patients, OR SC, OR acute urethral syndrome</td>
<td>Work up PP with ID/AST</td>
</tr>
<tr>
<td>&gt;3 PP</td>
<td>CC/MS, IDC, SC</td>
<td>No work up</td>
</tr>
<tr>
<td>1 PP at &gt;10^5 cfu/mL with 1 to 2 PP at &lt;10^4 cfu/mL</td>
<td>CC/MS, IDC</td>
<td>Work up the one PP at &gt;10^5 cfu/mL with ID/AST</td>
</tr>
<tr>
<td>1 PP at &gt;10^4 cfu/mL with 1 to 2 PP at &lt;10^3 cfu/mL</td>
<td>SC</td>
<td>Work up the one PP at &gt;10^4 cfu/mL with ID/AST</td>
</tr>
<tr>
<td>&gt;10^2 cfu/mL of any PP</td>
<td>SB</td>
<td>Work up all PP with ID/AST</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Specimen type and result</th>
<th>Work-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC/MS: ≥10^6 cfu/mL of a single PP or for each of 2 PP</td>
<td>Work up the one or both PP with ID/AST</td>
</tr>
<tr>
<td>SC: ≥10^7 cfu/mL of a single PP or for each of 2 PP</td>
<td>Work up the one or both PP with ID/AST</td>
</tr>
<tr>
<td>CC/MS, SC: ≥3 PP</td>
<td>No work up</td>
</tr>
<tr>
<td>CC/MS: 1 PP at ≥10^5 cfu/mL with 1 to 2 PP at &lt;10^4 cfu/mL</td>
<td>Work up the one PP at ≥10^5 cfu/mL with ID/AST</td>
</tr>
<tr>
<td>SC: 1 PP at ≥10^4 cfu/mL with 1 to 2 PP at &lt;10^3 cfu/mL</td>
<td>Work up the one PP at ≥10^4 cfu/mL with ID/AST</td>
</tr>
<tr>
<td>SB: ≥10^2 cfu/mL of up to 3 PP</td>
<td>Work up PP (up to three) with ID/AST</td>
</tr>
</tbody>
</table>

Key to tables:

- **CC/MS** = clean catch and/or midstream
- **SC** = suprapubic urine aspirates or other surgical obtained urine specimens
- **ID/AST** = identification and antimicrobial susceptibility testing (if appropriate)
- **ID** = indwelling catheter
- **AST** = acute symptomatic
- **PP** = potential pathogen
- **SB** = suprapubic urine aspirates or other surgical

**Tips from the clinical experts**

Edited by Daniel M. Baer, MD

MLO’s “Tips from the Clinical Experts” provides practical, up-to-date solutions to readers’ technical and clinical issues from a panel of experts in various fields. Readers may send questions to Dan Baer by e-mail at tips@mlo-online.com.
changes due to hemolysis, so caution is urged when releasing these results.

—Stanley F. Le, PhD, D(ABCC, FACB)
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References

Centrifuge selection

Q We are interested in purchasing a tabletop centrifuge for our rural hospital/clinic lab. Today, we had a small, quiet centrifuge delivered for evaluation. It has a “Quick Spin,” which is 30-second cycle for immediate separation of red cells, and a “Normal Spin,” which is 120-second cycle for particle poor plasma/serum for chemistry or coagulation testing. The third option is “hard spin” for achieving particle poor plasma/serum (e.g., will greatly reduce presence of fibrin strands and platelets in serum/plasma). The speed is listed at 8,500 rpm ± 250. The force is 4,440 x g. We process at least 30 coagulation specimens (or splitting a single tube), processing one in each centrifuge, and comparing the coagulation results from the two processes. The centrifuge’s manufacturer should be able to provide you with data supporting its performance claims.

Our laboratory currently uses a tabletop centrifuge for processing coagulation specimens. It is similar to the one you describe and uses a fixed-angle rotor, and spins at 7,200 ± 350 rpm (4,227 x g). Our studies have shown that the “PPP” cycle (three-minute spin) consistently produces platelet-poor plasma. We did not perform a study to specifically evaluate hemolysis. We have, however, used these centrifuges during normal range studies, which included specimens drawn from normal volunteers. No visually hemolyzed specimens have been observed during these studies. Since CLSI guidelines indicate that visibly hemolyzed samples could interfere with coagulation testing, visual inspection of plasma should be sufficient to detect any significant hemolysis due to centrifugation or any other source that may cause spurious coagulation results.

Our laboratory successfully improved turnaround time of our troponin-I assay by using a tabletop centrifuge exclusively for processing troponin specimens collected in lithium heparin. We use the three-minute spin cycle and have noticed no increase in the proportion of hemolyzed specimens by visual inspection. In short, there are several products currently available that allow for rapid centrifugation of chemistry and coagulation samples. As with any new procedure, good laboratory practice dictates that these tests be tested against previous methods before being placed into service.

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Billing for confirmatory tests

Q Can we bill for confirmatory tests for urinalysis? We do Ictotest for bilirubin and Clinitest for pediatric urinalysis. There is an 81099 CPT for unlisted urinalysis procedure. Or we could do 81000.51 for multiple procedures. We also do a specific gravity on negative qualitative pregnancy tests. Can we bill for that?

A This answer applies to Medicare billing only. In order to bill for a test, it must be appropriately ordered by an approved provider; this includes confirmatory tests. Requisitions are a good place to show where confirmatory reflex testing occurs. Providers should always have the option to order tests without the confirmatory reflex test. Medicare does not pay for repeat or confirmatory tests for the purpose of quality control or to obtain a reportable result. This type of confirmatory testing is considered for quality purposes and, therefore, should not be billed to Medicare. I am assuming the .51 is referring to a modifier -51 for multiple procedures. That modifier is not designated for laboratory tests.

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