

Five Things Physicians and Patients Should Question

1

Do not request routinely extended incubation of blood cultures in suspected endocarditis.

Extending incubation of routine blood cultures does not increase the recovery of clinically significant pathogens causing endocarditis. Five-day incubation, using currently available media formulations and automated incubation and detection systems, is sufficient to recover the majority of true pathogens including HACEK organisms. Alternative methods (such as serology, molecular, targeted fungal or mycobacterial cultures, or tissue histopathology) should be utilized, when clinically indicated, for detection of rarely encountered, fastidious organisms (*Bartonella*, *Coxiella*, *Mycobacterium*, dimorphic fungi) not recovered using routine blood cultures. Occasional exceptions may be appropriate and should be reviewed in consultation with an infectious disease specialist.

2

Do not routinely test >1 stool specimen per week for *Clostridioides difficile* by Nucleic-acid Amplification Test (NAAT).

Repeat testing using NAAT (within 7 days) for *Clostridioides difficile* is not recommended when the symptoms represent a single episode of diarrheal illness. Studies have shown that repeat testing using NAAT within a seven day period yield only a 2% diagnostic yield. Exceptions should only be made in the setting of an institutional epidemic or when *C. difficile* infection is highly suspected with no alternative diagnosis, but for which the initial test is negative and symptoms persist or worsen.

3

Do not order Lyme serology on patients with a primary erythema migrans lesion.

No current diagnostic method is highly sensitive in Lyme disease patients with less than two weeks of rash or illness. Most patients with primary Lyme disease are seronegative at the time of presentation and should be treated on clinical grounds regardless of serological results. In patients with equivocal or atypical lesions, paired testing with sera collected acutely and 2–3 weeks later may be helpful.

4

Do not order a Lyme immunoblot without a positive Lyme Enzyme immunoassay (EIA) screening test.

The Lyme immunoblot test is designed only as a confirmatory test, so it is important not to test screen-negative samples. Some antigens on the blot react with non-Lyme antibodies, and the immunoblot can be over-interpreted in the absence of a positive screening test. Current 2-tiered serology has a sensitivity of 70%–100% and specificity >95% for disseminated Lyme disease; use of an immunoblot without a positive screening test is unwise. While the exact characteristics of current immunoblot tests used alone are not well-defined, high false positive IgM rates have been observed in patients tested without a prior EIA.

This recommendation assumes that a patient has had the potential for contact with ticks in an endemic area.

5

Do not order urine cultures unless patients have symptoms consistent with urinary tract infection (UTI).

Urine cultures should only be requested on patients who have clinical signs of UTI. Routine culture of urine in asymptomatic individuals may detect asymptomatic bacteriuria (ASB) which is commonly found in certain populations. Screening for ASB has no clinical benefit and may result in harm (1, 2). Testing for ASB should only be pursued in specific populations such as pregnant women and individuals who are about to undergo urologic procedures that involve mucosal disruption (2).

How This List Was Created

The American Society for Microbiology's (ASM) list was developed under the leadership of the ASM's Clinical and Public Health Microbiology Committee. The subject matter experts who identified the list and formulated the recommendations are laboratory directors at academic, commercial and public health laboratories and test utilization experts across the fields of microbiology and laboratory medicine. They worked together to identify a list of diagnostic and management decisions that have resulted in misuse of laboratory studies and resources. The five experts independently ranked the recommendations in order of priority and identified tests or procedures commonly used whose necessity should be questioned and discussed with patients. The experts formulated recommendations based on laboratory practice, evidence and an extensive review of the literature.

Five recommendations to address the most common clinical microbiology laboratory test misconceptions were written. They consist of diagnostic tests or treatments that are commonly ordered, expensive and have no evidence to illustrate its value and in some cases, may be potentially harmful to the patient. The recommendations, if instituted, would result in higher quality care, lower costs, and more effective use of our laboratory resources and personnel. The experts involved in this project are Sheldon Campbell, Marc Couturier, Omai Garner, Duane Newton, Preeti Pancholi and Linoj Samuel.

The recommendations were vetted and approved by ASM's Clinical and Public Health Microbiology Committee. The list has also been reviewed and approved by the ASCP Effective Test Utilization Committee.

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