Technical Bulletin

Rapid Preliminary Identification from Positive Blood Culture Bottles

TO: Medical Staff and Clients

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SUBJECT: Preliminary bacterial identifications are now reported from positive blood culture by MALDI-TOF/MS

Detection of microbial pathogens in the blood of sick patients is one of the most critical services a clinical microbiology laboratory provides. Modern instrumentation can detect microbial growth quickly in true bacteremia, often less than 24 hours. The Gram stain provides the earliest information as to the etiology, however further identification relies upon isolation on solid media followed by matrix-assisted laser desorption ionization – time of flight / mass spectrometry (MALDI-TOF/MS). This normally requires overnight incubation.

DLS has been working with the manufacturer of our MALDI-TOF/MS instrumentation to validate the preliminary identification of more common bacteria directly from the positive blood culture bottles. This doesn't work equally well with all types of bacteria. On **September 21, 2020**, we will phase in testing based on organisms that we have more predictable identifications beginning with Enterobacterales (Enterobacteriaceae). Based on literature, we anticipate preliminary identifications on about 80% of enterics. We will add more organisms as we validate them, although success rates will vary. For example, Streptococci are identified with a much lower success rate.

Direct identification can only be attempted when the Gram stain shows one organism morphology; MALDI-TOF/MS cannot identify bacteria in polymicrobic cultures.

These will always be preliminary identifications and will include the statement, "Refer to final blood culture report for final identification". It is possible that the preliminary identification might change.

This test has not been reviewed or approved by the U.S. Food and Drug Administration however; its performance characteristics are being monitored by Diagnostic Laboratory Services, Inc. in an ongoing verification/validation.

The test should be used for clinical purposes with caution, and the results are not intended to be used as the sole means for diagnostic or patient management decisions.

Please refer any questions to Terrie Koyamatsu, Manager - DLS Microbiology Laboratory at 589-5196, or DLS Client Services at 589-5101.