Q&A column

Editor: Frederick L. Kiechle, MD, PhD

Submit your pathology-related question for reply by appropriate medical consultants. CAP TODAY will make every effort to answer all relevant questions. However, those questions that are not of general interest may not receive a reply. For your question to be considered, you must include your name and address; this information will be omitted if your question is published in CAP TODAY.

Q. Can a heel stick for a basic metabolic panel with magnesium and phosphorus be performed on a two-month-old baby?

A. A heel stick is a common method to obtain capillary blood samples in pediatrics, in part because it is less invasive than venous blood sampling. Heel sticks are the most commonly performed sample method in neonatal intensive care units. Samples obtained in this manner are used for a variety of testing, including the basic metabolic panel, magnesium, and phosphorus. These tests can be performed on a capillary sample obtained by heel stick if there is sufficient sample. When performing a heel stick, follow the guidelines for capillary sample collection, and consider the limitations of capillary blood sampling when interpreting the results. Due to the special technical requirements of this procedure, it is ideal to have experienced staff who perform heel sticks frequently.

Clinical and Laboratory Standards Institute. *GP42-A6: Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard.* 6th ed. CLSI; 2008.

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Q. Due to nationwide supply shortages affecting COVID-19 and other testing in the laboratory, we are concerned about using up critical supplies when assessing competency. Do you have suggestions or strategies we can use?

A. Performing competency assessment is a challenge, especially during the COVID-19 health care emergency, but it is crucial for ensuring that testing personnel are performing tests correctly and accurately for reliable results and patient care. While no exceptions for assessing competency have been made by the Centers for Medicare and Medicaid Services at this time, it helps to remember that some elements of competency can be assessed

throughout the year during routine supervisory activities, such as review of records for daily maintenance, quality control, and proficiency testing. Corrective action logs can be a good source for evaluating problem-solving skills. There may also be opportunities to observe test performance and daily maintenance activities. The CAP has complementary example templates that may be useful for this purpose; they can be downloaded from cap.org (log in to e-LAB Solutions Suite and go to Accreditation Resources and then Templates). The CAP also has its optional Competency Assessment Program that helps laboratories develop assessment checklists and provides other tools to tailor a program specific to a laboratory.

Consider also the following suggestions to help reduce the potential burden on the supply chain and simplify the competency assessment process:

- *Use routine controls or proficiency testing samples for evaluating technologist performance during competency assessment.* Routine QC and PT performed for regulatory compliance also provide an opportunity to complete the blind sample element of competency assessment. QC materials can be de-identified to qualify as a blind specimen.
- *Use one testing event to fulfill multiple requirements*. For example, testing performed to meet compliance with instrument comparison (COM.04250) can also be used to meet the blind sample testing requirements. The CAP offers Quality Cross Check programs (COVQ2 and COVSQ) that can be used for instrument comparison and to evaluate the performance of personnel simultaneously. Many elements of competency can be met through this process if it is observed from start to finish and includes questions regarding troubleshooting.
- *Determine if COVID-19 testing can be combined with an existing test system for evaluating competency.* The CAP defines a test system as being the process that includes preanalytic, analytic, and postanalytic steps used to produce a test result or set of results. In many situations, tests performed on the same analyzer or platform may be considered one test system and a separate competency assessment would not be required for each test performed on the instrument. For example, if a SARS-CoV-2 test is added to the same instrument platform used to perform influenza and RSV testing and there are no differences in how the testing is performed or interpreted, the tests can be included under one test system for competency assessment. A separate assessment would not be required for the additional test; however, the laboratory must assess training needs and take appropriate action. Tests with unique aspects or procedures, such as differences in pretreatment of specimens prior to analysis, different procedural steps, or differences in evaluation/interpretation, must be assessed separately for competency to ensure they are performed

correctly.

Clinical and Laboratory Standards Institute. *QMS03-A3: Training and Competence Assessment; Approved Guideline.* 3rd ed. CLSI; 2009.

Standard: Personnel Assessment. 42 CFR §493.1713 (1992).

Standard: Technical Consultant Responsibilities. 42 CFR §493.1413. https://j.mp/345dR11

Standard: Technical Supervisor Responsibilities. 42 CFR §493.1451(b). https://j.mp/2SXvEQK

U.S. Department of Health and Human Services. Centers for Medicare and Medicaid Services. What Do I Need to Do to Assess Personnel Competency? November 2012. http://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/CLIA_Brochures.html

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Q. When a patient is admitted to our hospital, we collect MRSA nares PCR, MRSA axilla by culture, MRSA groin by culture, and vancomycin-resistant *Enterococcus* by PCR for infection control purposes. Many surrounding facilities have told us they have removed the axilla and groin cultures, but no references were cited to support removing these procedures. Our facility would like to follow the practices of other hospitals, but our providers would like a reference to cite.

Are there best practices or benchmarks from an infection control and microbiology point of view that would allow us to remove the axilla and groin MRSA screen cultures?

A. Screening certain populations of patients upon admission to a health care facility (also known as active surveillance testing) for asymptomatic colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) is a common practice at health care facilities and is even mandated by law in some states.[1] This testing—who to perform it on, how often to screen, what methods to use, which anatomical sites to sample, and what intervention should take place for patients who have positive results—is an area of debate.[2] The goal of this testing is to identify patients who are colonized with MRSA and isolate and/or decolonize them to decrease nosocomial transmission and the incidence of MRSA infection. Another possible use of such screening is to avoid or de-escalate empiric anti-MRSA vancomycin therapy in patients who test negative.[3]

Multiple methods can be used to perform active surveillance MRSA screening, including culture-based approaches (blood agar and/or chromogenic media), PBP2a detection, full antimicrobial susceptibility testing, and/or *mecA* gene detection. There are no guidelines or best practice recommendations that specify which method is best. Based on the testing method reported in more than 600 participant responses to the College of American Pathologists' Methicillin-resistant *Staphylococcus aureus* Screen, 5 Challenge (MRS5) Survey and the more than 600 participant responses to the MRS5-Molecular Survey, institutions vary widely in their approaches. Variables to consider in test method selection include the sensitivity and specificity of the testing method employed, turnaround time, cost, and integration into laboratory workflow.

A practice recommendation document put forth by the Society for Healthcare Epidemiology of America and Infectious Disease Society of America in 2014 states that the anterior nares is the site of colonization that is most frequently positive in most studies but that no single site will detect all colonized individuals.[4] Due to this finding and to the relative ease of collection at this anatomic location, the anterior nares has come to be considered the primary site for sampling. Other sites also may be sampled to improve the overall sensitivity of surveillance, but it

comes at an additional cost.

One approach for determining whether to sample additional anatomic locations is to examine the lab's in-house data to see how many patients screen positive by groin and/or axilla culture without a concurrent positive nares PCR result. If the data show that the diagnostic yield from sampling additional anatomic locations is low, then removing them from the lab's active surveillance testing program can be easily justified. On the other hand, if the data show that culturing samples from the groin and axilla in the lab's patient population identify a significant number of additional colonized patients, then perhaps multisite screening should be continued. A cost analysis based on the lab's data may help determine the best approach.[5]

Knowing the baseline rate and monitoring for changes in clinical MRSA infection in your institution as well as analyzing data from active surveillance testing for asymptomatic colonization can help guide the use of testing and infection prevention resources when there are significant changes to either metric. Guidance for implementing a MRSA active surveillance testing program can be found in the appendix of the 2014 SHEA/IDSA practice recommendation document.[4] The population to be screened, frequency, methods used, and anatomic locations screened ideally should be determined collaboratively by an interdisciplinary group that includes the clinical laboratory and infection prevention team at each institution.

1. Lin MY, Hayden MK, Lyles RD, et al. Regional epidemiology of methicillin-resistant *Staphylococcus aureus* among adult intensive care unit patients following state-mandated active surveillance. *Clin Infect Dis*. 2018;66(10):1535–1539.

2. Peterson LR, Diekema DJ. To screen or not to screen for methicillin-resistant *Staphylococcus aureus*. *J Clin Microbiol.* 2010;48(3):683–689.

3. Mergenhagen KA, Starr KE, Wattengel BA, Lesse AJ, Sumon Z, Sellick JA. Determining the utility of methicillin-resistant *Staphylococcus aureus* nares screening in antimicrobial stewardship. *Clin Infect Dis.* 2020;71(5):1142–1148.

4. Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol.* 2014;35(7):772–796.

5. Peterson LR, Schora DM. Methicillin-resistant *Staphylococcus aureus* control in the 21st century: laboratory involvement affecting disease impact and economic benefit from large population studies. *J Clin Microbiol*. 2016;54(11):2647–2654.

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