General

- ☐ Review **current product insert** from commercial antimicrobial susceptibility testing products used in my laboratory and ensure all recommendations for testing/reporting are followed. Procedures in the manufacturer's product insert take precedence over those found in CLSI standards.
- ☐ Obtain **written documentation** from medical staff for testing/reporting of organisms/antimicrobial agents beyond those suggested in CLSI standards.
- ☐ **Review Tables 1 and 1A in CLSI M100-S18** to specifically note changes in drugs recommended for testing/reporting. Changes include the deletion or movement of agents between groupings. **Interact with medical staff** to determine if any changes in **testing/reporting protocols** are warranted. If so, begin modifying testing panels and reporting procedures to deal with these new recommendations. Drugs no longer available in the U.S. or rarely used were deleted from Tables 1 and 1A, but retained in Table 2. They are:
  - Cephems / β-lactams: Carbenicillin, Cefamandole, Cefmetazole, Cefonicid, Cefoperazone, Cefotetan, Ceftizoxime, Loracarbef, Mezlocillin, Ticarcillin (except *P. aeruginosa*)
  - Fluoroquinolones: Cinoxacin, Gatifloxacin, Sparfloxacin
  - Spectinomycin
  - Aminoglycosides: Kanamycin, Netilmicin
- ☐ Review the additional testing options for detecting specific resistances in the **new Appendices A–D** to determine if these are or would be beneficial and, if used, to ensure testing is being performed appropriately. Information in appendices A and B is not new, but is now more easily accessible. Appendices C and D contain new information.
- ☐ Make certain a protocol is in place to ensure that when performing additional tests to verify uncommon susceptibility results such as those listed in Appendix E, **critical results are communicated** to the laboratory director or supervisor while additional tests are pending.
- ☐ Review "**Summary of Comments and Subcommittee Responses**" at the end of M100-S18.

Gram Negative Bacteria

- ☐ Become familiar with gram-negative bacteria that are **KPC** (*Klebsiella pneumoniae* carbapenemase) **producers**. Additional information may be available from the **state public health laboratory** in some states. Other bacteria besides *K. pneumoniae* may produce KPCs.
- ☐ Develop (or review) **protocol for detecting potential KPC producers** to include at minimum:
  a) criteria for identification of potential KPC producers.
  b) strategy for confirming KPC producers and reporting results.
  c) strategy for informing patient's physician, infection control and public health authorities about these findings. Determine which, if any, isolates will be saved.
- ☐ **"Other non-Enterobacteriaceae"** now "ungrouped" from *P. aeruginosa* in Table 1 testing/reporting protocol. Group **includes** *Pseudomonas* spp. (not *P. aeruginosa*) and other nonfastidious, glucose-nonfermenting gram-negative bacilli but **excludes**: *P. aeruginosa, Acinetobacter* spp., *Stenotrophomonas maltophilia, Burkholderia cepacia, B. mallei* and *B. pseudomallei*.
- ☐ For "**Other non-Enterobacteriaceae**", review Table 1 and, if appropriate, interact with medical staff to determine if any changes in testing/reporting protocol are warranted.
- ☐ For ***Acinetobacter* spp.**, review Table 1: Ampicillin-sulbactam, Ciprofloxacin, Levofloxacin, Gentamicin and Tobramycin reclassified into Group A test/report. If appropriate, interact with medical staff to determine if any changes in testing/reporting protocol are warranted.
- ☐ For ***Pseudomonas aeruginosa***, review Table 1: Tobramycin reclassified into Group A test/report; Ticarcillin reclassified into Group B; Mezlocillin removed. Review other changes to Groups B, C and U. If appropriate, interact with medical staff to determine if any changes in testing/reporting protocol are warranted.

New CSLI Antimicrobial Susceptibility Testing (AST) Recommendations M100-S18 Checklist

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Gram Positive Bacteria

- ☐ Review Table 1 with particular attention to drugs currently recommended for treatment of **MRSA** infections and ensure patient reports contain drug results that are most useful.
- ☐ If using disk diffusion test for **inducible clindamycin resistance**, make certain an isolate showing hazy growth within an apparent clindamycin zone is considered clindamycin resistant.
- ☐ Review methods (including QC) for detecting **inducible clindamycin resistance** in staphylococci. Determine if the new MIC test is available for testing system used and determine if it would be beneficial to adopt.
- ☐ Review methods (including QC) for detecting ***mec*A-mediated oxacillin resistance** in *S. aureus*. Determine if the new cefoxitin MIC or screening test is available for testing system used and determine if it would be beneficial to adopt.
- ☐ Note that some *S. aureus* may be encountered that test **resistant to oxacillin but are *mec*A negative and susceptible to cefoxitin**. If an isolate has an oxacillin MIC >4 µg/mL and is *mec*A negative, report as oxacillin resistant. Rare isolates of staphylococci may be oxacillin resistant due to mechanisms other than *mec*A.
- ☐ Review Table 1 with particular attention to drugs currently recommended for treatment of **VRE** infections and ensure patient reports contain drug results that are most useful.
- ☐ Review **new meningitis vs. non-meningitis penicillin breakpoints** for *S. pneumoniae*. Modify breakpoints for reporting results as appropriate. Determine if reporting penicillin using oral breakpoints is warranted, and if so, make appropriate reporting modifications.
- ☐ "Ungroup" "**beta-hemolytic**" from "**viridans**" group streptococci in testing/reporting protocol. Review Table 1 and determine if any changes in testing/reporting protocol is warranted.
- ☐ Make certain specific types of beta streptococci are included in the appropriate group (e.g., large colony in beta and small colony in viridans) in testing protocol.

References:

1. Clinical and Laboratory Standards Institute. 2008. Performance standards for antimicrobial susceptibility testing; Eighteenth informational supplement. M100-S18. CLSI, Wayne, PA.
2. Swenson, JM et al. 2007. Detection of *mec*A-mediated resistance using reference and commercial testing methods in a collection of *Staphylococcus aureus* expressing borderline oxacillin MICs. Diagnostic Microbiology and Infectious Disease. 58:33-39.

MRSA Helper

Current CLSI recommendations — *in vitro* test options for detection of MRSA:

- ☐ Oxacillin MICs (Note: oxacillin disk is no longer included)
- ☐ Cefoxitin Disk
- ☐ Cefoxitin MICs
- ☐ Latex agglutination for *mec*A gene product, PBP2A
- ☐ *mec*A gene determination
- ☐ Oxacillin Agar Screen

How do you determine which test or tests should be performed?

If routine test is oxacillin MICs, when is adding a cefoxitin test appropriate to ensure appropriate detection of MRSA?

- ☐ Oxacillin MIC is close to the breakpoint (e.g., 2 or 4 µg/mL). Note that there is a rare occurrence of staphylococci that may be oxacillin resistant due to mechanisms other than *mec*A.
- ☐ Oxacillin Interpretation has changed for previous isolate on this patient (e.g. Oxacillin is now S, but was R; or vice versa)
- ☐ *S. aureus* is "S" to oxacillin, but is "R" to other antimicrobial agents such as erythromycin, clindamycin, fluoroquinolones

If routine test is oxacillin MIC, should this be backed up with an oxacillin agar screen?

- ☐ In a 2007 study of *S. aureus* isolates with MICs of 1-4 µg/mL, the specificity for detection of *mec*A negative strains was as low as 50%[2] - adding oxacillin agar is probably not indicated

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