NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

Patient Safety Component–Annual Hospital Survey 2024

Facility Name: _____

Reference Laboratory: **Pathology Laboratory, 3001 SE Convenience Blvd Unit 104 Ankeny, IA 50021**

Sections highlighted in yellow should be completed by the Facility listed above.

*1. Does your facility have its own on-site laboratory that performs bacterial antimicrobial susceptibility testing? ☐ Yes ☒ No

a. If No, where is your facility's antimicrobial susceptibility testing performed? (check one)
   - ☐ Affiliated medical center
   - ☐ Commercial referral laboratory
   - ☐ Other local/regional, non-affiliated reference laboratory

b. If Yes, do you also send out any antimicrobial susceptibility testing? (check one) ☐ Yes ☐ No

*2. For *Enterobacterales, Pseudomonas aeruginosa* and/or *Acinetobacter baumannii* complex, indicate which methods are used for:
(1) Primary susceptibility testing and
(2) Secondary, supplemental, or confirmatory testing (if performed).
If your laboratory does not perform susceptibility testing, indicate the methods used at the outside laboratory. Use the testing codes listed below the table.

(1) Primary	(2) Secondary	Comments
3	**4**	**7**
1 = Kirby-Bauer disk diffusion	4 = ThermoFiscer/Sensititre	7 = Gradient Dilution Strip (for example, E test, Liofilchem)
2 = bioMérieux/Vitek	5 = Beckman Coulter/MicroScan	8 = Sent out test, method not known
3 = BD Phoenix	6 = Selux Diagnostics	9 = Other (describe in Comments section)

*3. Does either primary or secondary/supplemental antimicrobial susceptibility testing (AST) include the following (check all that apply):

Drug	Tested	Not Tested
Cefiderocol	☐	☒
Ceftazidime-Avibactam	☒	☐
Ceftolozane-Tazobactam	☒	☐
Eravacycline	☐	☒
Plazomicin	☐	☒
Imipenem-Relebactam	☐	☒
Meropenem-Vaborbactam	☒	☐
Aztreonam-Avibactam	☐	☒
Sulbactam-Durlobactam	☐	☒

*4. Has the laboratory implemented revised breakpoints recommended by CLSI for the following:

a. Third Generation Cephalosporin and monobactam (i.e. aztreonam) breakpoints for *Enterobacterales* in 2010 ☒Yes ☐No
b. Carbapenem breakpoints for *Enterobacterales* in 2010 ☒Yes ☐No
c. Ertapenem breakpoints for *Enterobacterales* in 2012 ☒Yes ☐No
d. Carbapenem breakpoints for *Pseudomonas aeruginosa* in 2012 ☒Yes ☐No
e. Fluroquinolone breakpoints for *Pseudomonas aeruginosa* in 2019 ☒Yes ☐No
f. Fluroquinolone breakpoints for *Enterobacterales* in 2019 ☒Yes ☐No

g. Aminoglycoside breakpoints for *Enterobacterales* in 2023 ☒Yes ☐No
h. Aminoglycoside breakpoints for *Pseudomonas aeruginosa* in 2023 ☒Yes ☐No
i. Piperacillin-tazobactam breakpoints for *Pseudomonas aeruginosa* in 2023 ☐Yes ☒No
j. Piperacillin-tazobactam breakpoints for *Enterobacterales* in 2022 ☐Yes ☒No

*5. Does the laboratory test bacterial isolates for presence of a carbapenemase? (this does not include automated testing instrument expert rules) ☒Yes ☐No

5a. If Yes, indicate what is done if carbapenemase production is detected: (check one)
☐ Change susceptible carbapenem results to resistant
☐ Report carbapenem MIC results without an interpretation
☒ No changes are made in the interpretation of carbapenems, the test is used for epidemiological or infection control practices

5b. If Yes, which test is routinely performed to detect carbapenemase: (check all that apply)
☐ Nucleic Acid Amplification Test (for example, PCR, Cepheid)
☐ Modified Hodge Test
☒ mCIM/CIM
☒ NG-Test Carba-5 (or other lateral flow assay)
☐ Carba NP
☒ Other (specify):BD Phoenix

5c. If Yes, which of the following are routinely tested for the presence of carbapenemases: (check all that apply)
☒ *Enterobacterales* spp. ☒ *Pseudomonas aeruginosa* ☒ *Acinetobacter baumannii*

*6. Does your facility use commercial or laboratory developed tests for rapid molecular detection of antimicrobial resistance markers in bacterial bloodstream infections? Examples of commercially available systems include BioFire FilmArray, Luminex Verigene, etc.
☒ Yes
☐ No [If checked, skip questions 7 and 8]

6a. If Yes, which test panel(s) does your facility use? (check all that apply)
☐ Accelerate PhenoTest BC ☐ BioFire FilmArray BCID ☒ BioFire FilmArray BCID II
☐ Cepheid Xpert MRSA/SA BC ☐ GenMark ePlex BCID-GP ☐ GenMark ePlex BCID-GN
☐ GenMark ePlex BCID-FP ☐ Luminex Verigene BC-GP ☐ Luminex Verigene BC-GN
☐ MALDI-TOF MS directly from positive blood culture (e.g., SepsiTyper)
☐ MALDI-TOF MS based antimicrobial resistance detection
☐ T2Biosystems T2Bacteria ☐ T2Biosystems T2Candida ☐T2Biosystems T2Resistance
☐ Other Commercial Test(s) (Leave Comment) _____
☐ Other Laboratory Developed Test(s) (Leave Comment) _____

*7. In a scenario where the *mecA* resistance marker and *Staphylococcus aureus* are detected by rapid molecular testing in a blood specimen, select the procedure(s) your facility conducts. (check one)
☐ Our laboratory does not perform *mecA* testing using rapid molecular methods. [If checked, skip question 7a.]
☐ Culture based phenotypic antimicrobial susceptibility testing is not performed. [If checked, skip question 7a.]
☒ Culture based phenotypic antimicrobial susceptibility testing is performed. A text indicating results of the corresponding rapid molecular testing and/or the interpretation of the rapid molecular testing result is added to the phenotypic test result.
☐ Culture based phenotypic antimicrobial susceptibility testing is performed. No text indicating corresponding rapid molecular testing and/or interpretation is added.

7a. If both rapid molecular and culture based phenotypic antimicrobial susceptibility testing are performed for a blood specimen to detect drug resistance in *Staphylococcus aureus*, and

discordance is found between their results, how are results reported? (check one)
- ☐ Further testing is not pursued. Results are reported separately.
- ☐ Further testing is not pursued. The phenotypic result is overridden by the rapid molecular test result when an antimicrobial resistance marker is detected.
- ☒ Further testing is performed to identify the reason for the discordance. Results are modified based on the further analysis.

*8. In a scenario where the *bla*$_{CTX-M}$ (CTX-M) resistance marker and *Escherichia coli* are detected by rapid molecular testing in a blood specimen, select the procedure(s) your facility conducts. (check one)
- ☐ Our laboratory does not perform *bla*$_{CTX-M}$ (CTX-M) testing using rapid molecular methods. [If checked, skip question 8a.]
- ☐ Culture based phenotypic antimicrobial susceptibility testing is not performed. [If checked, skip question 8a.]
- ☒ Culture based phenotypic antimicrobial susceptibility testing is performed. A text indicating results of the corresponding rapid molecular testing and/or the interpretation of the rapid molecular testing result is added to the phenotypic test result.
- ☐ Culture based phenotypic antimicrobial susceptibility testing is performed. No text indicating corresponding rapid molecular testing and/or interpretation is added.

8a. If both rapid molecular and culture based phenotypic antimicrobial susceptibility testing are performed for a blood specimen to detect drug resistance in *Escherichia coli* and discordance is found between their results, how are results reported? (check one)
- ☐ Further testing is not pursued. Results are reported separately.
- ☐ Further testing is not pursued. The phenotypic result is overridden by the rapid molecular test result when an antimicrobial resistance marker is detected.
- ☒ Further testing is performed to identify the reason for the discordance. Results are modified based on the further analysis.

*9. Where is yeast identification performed for specimens collected at your facility? (check one)
- ☐ On-site laboratory
- ☐ Affiliated medical center
- ☐ Commercial referral laboratory
- ☐ Other local/regional, non-affiliated reference laboratory
- ☐ Yeast identification not available (specifically, yeast identification is not performed onsite or at any affiliate/commercial/other laboratory) [If checked, skip questions 10-14]

Answer questions 10-14 for the laboratory that performs yeast identification for your facility:

*10. Which of the following methods are used for yeast identification? (check all that apply)
- ☐ MALDI-TOF MS System (Vitek MS)
- ☐ MicroScan
- ☒ MALDI-TOF MS System (Bruker Biotyper)
- ☒ Non-automated Manual Kit (for example, API 20C, RapID, Germ Tube, PNA-FISH, etc.)
- ☐ Vitek-2
- ☐ DNA sequencing
- ☐ BD Phoenix
- ☐ Other (specify): _____

*11. Does the laboratory routinely use chromogenic agar for the identification or differentiation of *Candida* isolates?
- ☒ Yes
- ☐ No
- ☐ Unknown

*12. *Candida* isolated from which of the following body sites are usually fully identified to the species level? (check all that apply)

- ☒ Blood
- ☒ Other normally sterile body site (for example, CSF)
- ☒ Urine
- ☐ None are fully identified to the species level
- ☒ Respiratory
- ☐ Other (specify): _____

*13. Does the laboratory employ any PCR molecular tests to identify *Candida* from blood specimens?

☒ Yes ☐ No ☐ Unknown

13a. If yes, which PCR molecular tests are used to identify *Candida* from blood specimens? (check all that apply)

- ☐ T2Candida Panel
- ☒ BioFire BCID
- ☐ GenMark ePlex BCID
- ☐ Other, specify: _____
- ☐ Unknown

13b. If yes and you get a positive result, does this lab culture the blood to obtain an isolate?

- ☒ Yes, always
- ☐ Yes, with clinical order
- ☐ No
- ☐ Unknown

*14. Where is antifungal susceptibility testing (AFST) performed for specimens collected at your facility? (check one)

- ☐ On-site laboratory
- ☐ Affiliated medical center
- ☐ Commercial reference laboratory
- ☐ Other local/regional, non-affiliated reference laboratory
- ☐ AFST not available (specifically, AFST is not performed onsite or at an affiliate/commercial/other laboratory) [if selected, skip questions 15 -19]

Answer questions 15-19 for the laboratory that performs AFST for your facility:

*15. What methods are used for antifungal susceptibility testing (AFST), **excluding Amphotericin B?** (check all that apply)

- ☐ Broth microdilution with laboratory developed plates
- ☒ YeastOne (Thermo Scientific™ Sensititre™)
- ☐ Other (specify): _____
- ☐ Gradient diffusion (E test) ☐ Vitek (bioMerieux
- ☐ Unknown

*16. What methods are used for antifungal susceptibility testing (AFST) of **Amphotericin B?** (check all that apply)

- ☐ Broth microdilution with laboratory developed plates
- ☒ YeastOne (Thermo Scientific™ Sensititre™)
- ☐ Other (specify): _____
- ☐ Gradient diffusion (E test) ☐ Vitek (bioMerieux
- ☐ Unknown

*17. AFST is performed for which of the following antifungal drugs? (check all that apply)

- ☒ Fluconazole
- ☐ Posaconazole
- ☒ Caspofungin
- ☐ Other, specify: _____
- ☒ Voriconazole
- ☒ Micafungin
- ☐ Amphotericin B
- ☐ Unknown
- ☐ Itraconazole
- ☒ Anidulafungin
- ☐ Flucytosine

*18. AFST is performed on fungal isolates in which of the following situations? (check only one box per row)

	Performed automatically	Performed with a clinician's order	Not performed	Unknown
Blood	☒	☐	☐	☐
Other normally sterile body site (for example, CSF)	☒	☐	☐	☐
Urine	☐	☒	☐	☐
Respiratory	☐	☒	☐	☐
Other (specify): _____	☐	☐	☐	☐

*19. Is this laboratory developing antibiograms or other reports to track susceptibility trends for *Candida* spp. isolates tested in this laboratory?

☐ Yes ☒ No ☐ Unknown

*20. What is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed? (check one)

☐ Enzyme immunoassay (EIA) for toxin
☐ Cell cytotoxicity neutralization assay
☐ Nucleic acid amplification test (NAAT) (for example, PCR, LAMP)
☒ NAAT plus EIA, if NAAT positive (2-step algorithm)
☐ Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
☐ GDH plus NAAT (2-step algorithm)
☐ GDH plus EIA for toxin, followed by NAAT for discrepant results
☐ Toxigenic culture (*C. difficile* culture followed by detection of toxins)
☐ Other (specify): _____

*21. Which of the following methods serve as the primary method used for bacterial identification at your facility? (check one)

☐ MALDI-TOF MS System (Vitek MS)
☒ MALDI-TOF MS System (Bruker Biotyper)
☐ Automated Instrument (for example, Vitek, MicroScan, Phoenix, etc.)
☐ Non-automated Manual Kit (for example, API 20C, biochemicals)
☐ Rapid Identification (for example, NAAT/PCR, Gene Xpert, etc.)
☐ 16S rRNA Sequencing
☐ Other (specify): _____
☐ None

*22. Which of the following methods serve as the secondary or backup method used for bacterial identification at your facility? (for example, a secondary method if the primary method fails to give an identification, or if the primary method is unavailable). (check one)

☐ MALDI-TOF MS System (Vitek MS)
☐ MALDI-TOF MS System (Bruker Biotyper)
☒ Automated Instrument (for example, Vitek, MicroScan, Phoenix, etc.)
☐ Non-automated Manual Kit (for example, API 20C, biochemicals)
☐ Rapid Identification (for example, NAAT/PCR, Gene Xpert, etc.)
☐ 16S rRNA Sequencing
☐ Other (specify): _____
☐ None