CRE testing practice and capacity

Electronic Laboratory Reporting -- All facilities

Please contact Sharon Master (*Sharon.Master@state.nm.us*, (505) 383-9122) for any questions about this survey.

1. Please provide the following information to prevent duplicate answers from the same facility

Name

Position

Facility

E-Mail address

Phone number

2. Are you aware of the new notifiable conditions reporting regulation that was released in June 2016 requiring notification of carbapenem-resistant enterobacteriaceae (CRE) and carbapenem-resistant *pseudomonas aeruginosa (CR-PA)*?

- ◯ Yes
- ◯ No

Other (please explain)

3. For which conditions has your lab created a plan for reporting to the New Mexico Department of Health?

- ☐ CRE
- ☐ CR-PA
- ☐ Neither
- ☐ Please comment, if desired

4. For which conditions does your lab have a plan in place for sending isolates to the Scientific Laboratory Division (SLD), the state public health laboratory?

- ☐ CRE
- ☐ CR-PA
- ☐ Neither

Please comment, if desired

5. If applicable, what Electronic Medical Record (EMR) system is in use at your facility?

6. What electronic Laboratory Information Systems (LIS) are in use at your laboratory?

7. If applicable, please describe any major changes planned for your EMR or LIS system.

8. Does your lab have an Electronic Laboratory Record (ELR) feed with the New Mexico Department of Health (or with the New Mexico Health Information Collaborative, i.e., NMHIC)?

- ◯ Yes, in production
- ◯ Yes, in test
- ◯ No
- ◯ Other (please specify)

9. Are ELR for notifiable conditions reported from the Laboratory Information System (LIS) system or the EMR system?

- ☐ Laboratory Information System
- ☐ Electronic Medical Record system
- ☐ If unknown or some combination of the above, please explain

10. Does your facility currently report Carbapenem-resistant Enterobacteriaceae to the New Mexico Department of Health?

- ◯ Yes, via Fax
- ◯ Yes, via ELR
- ◯ No

Comments

11. Does your facility currently report carbapenem-resistant*Pseudomonas aeruginosa* to the New Mexico Department of Health?

- ◯ Yes, via Fax
- ◯ Yes, via ELR
- ◯ No

Comments

12. Does your lab perform on-site micro testing?

- ◯ Yes
- ◯ No

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Facilities with in-house Micro capacity

13. Does your lab perform Antimicrobial Susceptibility Testing (AST) for clinical bacterial isolates for the following organisms?

	Enterobacteriaceae	*A. baumannii*	*P. aeruginosa*
Yes, we perform all bacterial AST on-site	☐	☐	☐
No, not at all	☐	☐	☐
No, we send bacterial isolates to a reference lab to perform AST	☐	☐	☐

Other (please specify)

14. If the answer to the question above is '*No, we send bacterial isolates to reference lab to perform AST*':

What lab/labs do you send isolates to?

Under what circumstances do you send isolates?

15. If the answer to the question above is '*No, not at all*', please elaborate

16. Which of the following methods are used to**identify the organism** (check ALL that apply)?

	Enterobacteriaceae	*A. baumannii*	*P. aeruginosa*
Microscan® (Siemens)	☐	☐	☐
Phoenix™ (BD)	☐	☐	☐
Vitek® 2 (bioMérieux)	☐	☐	☐
MALDI-TOF MS	☐	☐	☐
HardyCHROM™ CRE Agar	☐	☐	☐
FilmArray® Blood Culture Identification Panel (BioFire)	☐	☐	☐
Verigene® Gram-Negative Blood Culture Test (Nanosphere)	☐	☐	☐
AdvanDx, Inc. PNA FISH® (GNR Traffic Light™, E. coli/P. aeruginosa)	☐	☐	☐
Other	☐	☐	☐

Other (please specify)

17. If more than one method is checked, please describe the algorithm or order of testing:

18. Which of the following methods are used to determine the **antimicrobial susceptibility** (check ALL that apply)?

	Enterobacteriaceae	*A. baumannii*	*P. aeruginosa*
Microscan® (Siemens)	☐	☐	☐
Phoenix™ (BD)	☐	☐	☐
Vitek® 2 (bioMérieux)	☐	☐	☐
Etest® (bioMérieux)	☐	☐	☐
Kirby Bauer/disk diffusion	☐	☐	☐
Other	☐	☐	☐

Other (please specify)

19. If applicable, what panels/cards are used?

Microscan® (Siemens)	
Phoenix™ (BD)	
Vitek® 2 (bioMérieux)	
Other	

20. If more than one method is checked, please describe the algorithm or order of testing:

21. For **Enterobacteriaceae**, what **MIC interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: MIC (µg/mL) (S-I-R)

- [ ] Imipenem: ≤4, 8, ≥16
- [ ] Imipenem: ≤1, 2, ≥4
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≤4, 8, ≥16
- [ ] Meropenem: ≤1, 2, ≥4
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Ertapenem: ≤2, 4, ≥8
- [ ] Ertapenem: ≤0.5, 1, ≥2
- [ ] Ertapenem: ≤0.25, 0.5, ≥1
- [ ] Ertapenem: Other
- [ ] Ertapenem: Not tested
- [ ] Doripenem: ≤1, 2, ≥4
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

22. For **Enterobacteriaceae**, what **zone diameter interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: Zone Diameter (nearest whole mm) (S-I-R)

- [ ] Imipenem: ≥16, 14-15, ≤13
- [ ] Imipenem: ≥23, 20-22, ≤19
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≥16, 14-15, ≤13
- [ ] Meropenem: ≥23, 20-22, ≤19
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Ertapenem: ≥23, 20-22, ≤19
- [ ] Ertapenem: ≥22, 19-21, ≤18
- [ ] Ertapenem: ≥19, 16-18, ≤15
- [ ] Ertapenem: Other
- [ ] Ertapenem: Not tested
- [ ] Doripenem: ≥23, 20-22, ≤19
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

23. For ***Acinetobacter baumannii***, what **MIC interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: MIC (µg/mL) (S-I-R)

- [ ] Imipenem: ≤4, 8, ≥16
- [ ] Imipenem: ≤2, 4, ≥8
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≤4, 8, ≥16
- [ ] Meropenem: ≤2, 4, ≥8
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Doripenem: ≤1, ≥2 (S-NS)
- [ ] Doripenem: ≤2, 4, ≥8
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

24. For ***Acinetobacter baumannii***, what **zone diameter interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: Zone Diameter (nearest whole mm) (S-I-R)

- [ ] Imipenem: ≥16, 14-15, ≤13
- [ ] Imipenem: ≥22, 19-21, ≤18
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≥16, 14-15, ≤13
- [ ] Meropenem: ≥18, 15-17, ≤14
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Doripenem: ≥17, ≤16
- [ ] Doripenem: ≥18, 15-17, ≤14
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

25. For ***Pseudomonas aeruginosa***, what **MIC interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: MIC (µg/mL) (S-I-R)

- [ ] Imipenem: ≤4, 8, ≥16
- [ ] Imipenem: ≤2, 4, ≥8
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≤4, 8, ≥16
- [ ] Meropenem: ≤2, 4, ≥8
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Doripenem: ≤4, 8, ≥16
- [ ] Doripenem: ≤2, 4, ≥8
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

26. For ***Pseudomonas aeruginosa***, what **zone diameter interpretive criteria** do you use for S-I-R (susceptible-intermediate-resistant) for the following carbapenems: Zone Diameter (nearest whole mm) (S-I-R)

- [ ] Imipenem: ≥19, 16-18, ≤15
- [ ] Imipenem: Other
- [ ] Imipenem: Not tested
- [ ] Meropenem: ≥19, 16-18, ≤15
- [ ] Meropenem: Other
- [ ] Meropenem: Not tested
- [ ] Doripenem: ≥19, 16-18, ≤15
- [ ] Doripenem: Other
- [ ] Doripenem: Not tested
- [ ] Please explain any "Other" responses above

27. 27 Are any carbapenem antibiotic susceptibility results suppressed beyond manufacturer's recommendations?

	Enterobacteriaceae	*A. baumannii*	*P. aeruginosa*
Yes	☐	☐	☐
No	☐	☐	☐

28. Can your lab report suppressed results to the New Mexico Department of Health via ELR?

- ○ No: we do not have an ELR feed with NMDOH
- ○ No: we have an electronic feed but cannot add these results to that feed
- ○ Yes

Please explain if the response options above are not sufficient

29. Which of the following **carbapenemase confirmatory tests** are performed (onsite)?

	Used for **screening**	Used for **confirmation**	Not used
Modified Hodge test	☐	☐	☐
RAPIDEC® CARBA NP (bioMérieux)	☐	☐	☐
CHROMagar™ KPC	☐	☐	☐
Etest® KPC MP/MPB or Etest® MBL	☐	☐	☐
Rosco Diagnostica carbapenemase screening and confirmation kit	☐	☐	☐
Verigene® Gram-Negative Blood Culture Test (Nanosphere)	☐	☐	☐
FilmArray® Blood Culture Identification Panel (KPC only) [BioFire Diagnostics, Inc.]	☐	☐	☐
PCR	☐	☐	☐
Ertapenem susceptiblity by disk diffusion	☐	☐	☐
Meropenem susceptibility by disk diffusion	☐	☐	☐
Ertapenem susceptibility by broth microdilution	☐	☐	☐
Imipenem susceptibility by broth microdilution	☐	☐	☐
Meropenem susceptibility by broth microdilution	☐	☐	☐

Other (please specify)

30. In what situations are confirmatory tests used?

31. What nucleic acid test (NAT) are currently used to identify Gram negative pathogens?

	Currently used	Not currently used, but plan to use in next year	Not currently used, no plan to use in next year	Do not know
FilmArray® Blood Culture Identification Panel (BioFire Diagnostics, Inc.)	○	○	○	○
Verigene® Gram-Negative Blood Culture Test (Nanosphere)	○	○	○	○
AdvanDx, Inc. PNA FISH® (GNR Traffic Light™, E. coli/P. aeruginosa)	○	○	○	○

Other (please specify)

32. Please specify the antibiotic agents tested using E test

- ☐ Not applicable, my lab doesn't perform E tests
- ☐ Meropenem
- ☐ Imipenem
- ☐ Ertapenem
- ☐ Doripenem
- ☐ Other (please specify)

33. If using PCR-based detection of **Carbapenem resistance mechanism** (for screening or confirmation), what are the gene targets?

- ☐ KPC
- ☐ NDM
- ☐ IMP
- ☐ VIM
- ☐ OXA-48 likeOXA-48 like
- ☐ MCR-1
- ☐ Other (please specify)

34. What carbapenemase tests are used for **CR-PA**?

Screening

Confirmatory

35. If you currently use NAT in your lab, when do you perform culture for isolation and antimicrobial susceptibility testing:

- [ ] When the NAT is positive
- [ ] When the NAT is negative
- [ ] When the NAT is positive or negative
- [ ] We do not perform culture for isolation and antimicrobial susceptibility testing if NAT is performed
- [ ] Do not know

36. Which CLSI – Performance Standards for Antimicrobial Susceptibility Testing M100 version are currently preset in your automated system or what does your lab currently use to determine antimicrobial susceptibility breakpoints? (If your lab does not use CLSI, please explain.)

37. If your lab does not use the most recent CLSI breakpoints, what are the major obstacles?

CRE testing practice and capacity

Off-site Micro testing

38. What lab(s) do the micro testing for your facility?

1

2

3

39. Do you receive those results electronically (i.e., in a way that they can be 'consumed' by your EMR or LIS system)?

- Yes
- No

Other (please specify)

CRE testing practice and capacity

All facilities

40. Please enter the following information about **Enterobacteriaceae cultures** results received for New Mexico residents during June through December of 2016.

# of cultures that grew Enterobacteriaceae	
# of cultures that grew Enterobacteriaceae that were carbapenem resistant	
# of unique patients that had cultures that grew Enterobacteriaceae	
# of unique patient that had Enterobacteriaceae cultures that were carbapenem resistant	

41. Please enter the following information about **CR-PA** cultures results received for New Mexico residents during June through December of 2016.

# of cultures that grew *P. aeruginosa*	
# of cultures that grew *P. aeruginosa* that were carbapenem resistant	
# of unique patients that had cultures that grew *P. aeruginosa*	
# of unique patient that had *P. aeruginosa* cultures that were carbapenem resistant	

42. If applicable, who in your facility gets notified in case of a possible CRE? (check all that apply)

- [ ] Notify Hospital Infection Prevention
- [ ] Notify Nursing
- [ ] Notify Physician
- [ ] Notify Physician and make recommendations for antibiotic treatment changes
- [ ] Notify Pharmacy
- [ ] Notify New Mexico Department of Public Health
- [ ] Notify Public Health Laboratory
- [ ] Other (please specify)

43. If the laboratory notifies someone, how soon is the notification made?

- ◯ Immediately upon getting the results
- ◯ Less than an hour from the time the information became available
- ◯ Within the first 2 hours from the time the information became available
- ◯ Between 2-6 hours from the time the information became available
- ◯ Within the next 24 hours from the time the information became available

Other (please specify)

44. Is susceptibility data from your facility reviewed by a hospital committee on a regular basis?

- ◯ Yes
- ◯ No

Please comment or describe, if necessary

45. Who in your facility should the New Mexico Department of Health contact if we have questions about your facility's ELR feed?

Name	
Company	
Position	
Email Address	
Phone Number	

46. If you have any additional comments or questions regarding CRE testing or lab capabilities, please enter them here. In addition, please let us know if there is anything the Scientific Laboratory Division or Department of Health could do to help your facility address the emerging threat of CREs.