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Health Services

Epi-Lab Coordination in Texas

HAI Epidemiology Program

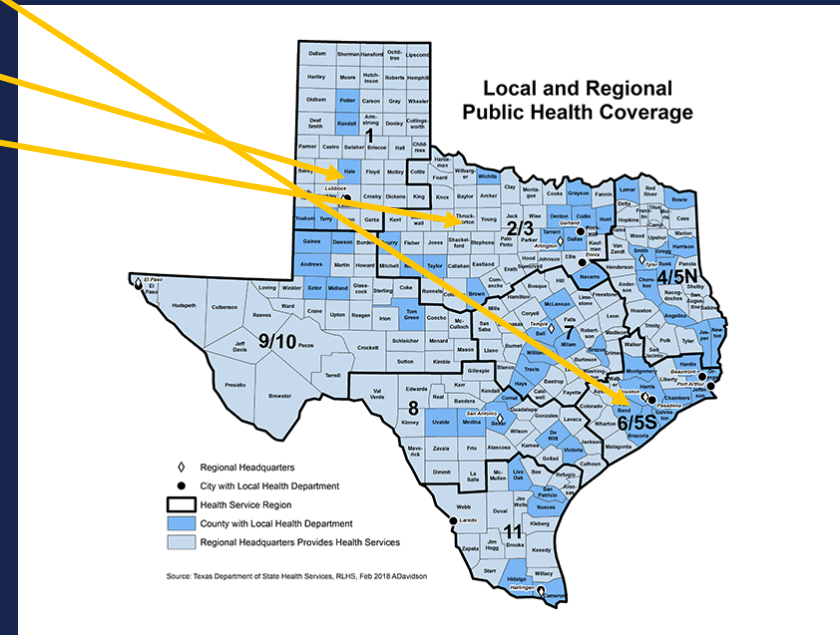
Case Studies



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- Novel IMP in Region 6/5S
- KPC Cluster in Region 1
- *Candida auris* in Region 2/3



Novel IMP in Region 6/5S

Bobbiejean Garcia, MPH, CIC, FAPIC

HAI Epidemiologist – Region 6/5S



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Realization of the Situation

- June 2017 – 4 CR-*Pseudomonas aeruginosa* isolates sent to DSHS for testing from an Acute Care Hospital
 - 1 isolate positive for IMP
 - Guatemala resident
 - 3 isolates carbapenemase positive, no mechanism detected
 - Matching PFGE pattern
 - Forwarded to CDC for more testing
 - 2 Mexico residents, 1 U.S. resident



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Epi Investigation

- Retrospective surveillance
 - Hospital had a previous *Pseudomonas aeruginosa* outbreak identified in December 2016
- Site visit conducted on 7/21/17
 - Many infection control breaches observed
 - Joint call with the CDC and the facility to discuss control measures
- Prospective surveillance initiated
- Colonization study implemented on 7/24/17



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CDC Coordination

- 10 patients' isolates sent for further testing
- Carbapenemase testing results:
 - 3 had IMP-18
 - 5 isolates with a combination of OXA-2 (ESBL), GES-19 (ESBL), and GES-20 (carbapenemase)
 - GES-20 rare in the U.S., but has been reported in patients in Mexico
- Whole Genome Sequencing (WGS)
 - Sequence Types (ST):
 - 7 isolates matched
 - 2 were different ST



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Takeaways

- Admission screening
- Facility concerns of confidentiality with ARLN testing

KPC Cluster in Region 1

Gillian Blackwell,

HAI Epidemiologist – Region 1



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8/16/201

8

Index Case Patients

1. 55y/o male
 - a. 12/8/17 Urine culture +CRE-KP
 - i. Submitted to the ARLN 12/15/17
2. 46y/o male
 - a. 12/16/17 Urine culture +CRE-KP
 - i. Submitted to the ARLN 12/20/17
3. 47y/o male
 - a. 12/17/17 Tracheal aspirate +CRE-KP
 - i. Submitted to the ARLN 12/22/17



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Texas Department of State Health Services
Physical Address: 1100 West 49th Street Austin, TX 78756

Austin Laboratory
PO Box 149347
Austin, TX 78714-9347
888-963-7111 Ext. 7318
CLIA: 45D0660644

LIMS Report #:

Local Patient Id:

Date of Birth:

Social Security #:

Gender: Male

Sample #: AMD
Source: Swab, Rectal
Additional Info:
Billing Comment: 10 - None
Specimen Note:

Collected By:

Date Collected: 02/20/2018 2:00 PM

Date Received: 2/22/2018 10:57 am

Date Reported: 3/7/2018 5:05 pm

Test	Result
Organism ID*	<i>Serratia marcescens</i>
Resistance Mechanism: blaKPC detection by PCR	Detected
blaNDM detection by PCR	Not Detected
blaIMP detection by PCR	Not Detected
blaVIM detection by PCR	Not Detected
OXA-48 like detection by PCR	Not Detected
MCR-1 detection by PCR*	Not Detected

Note: Results reported are intended for epidemiological use only. These results may not be used for diagnosis, treatment, or for the assessment of a patient's health.



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Colonization Study

- DSHS worked with the local health department and the facility to determine high-risk patients for screening
- 1 patient screened for colonization via rectal swab at the acute care facility
 - Swab sent to DSHS ARLN
 - Isolate negative for resistance mechanisms
- 34 patients screened for colonization via rectal swab at the skilled nursing facility
 - 6 additional positive results identified



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KPC



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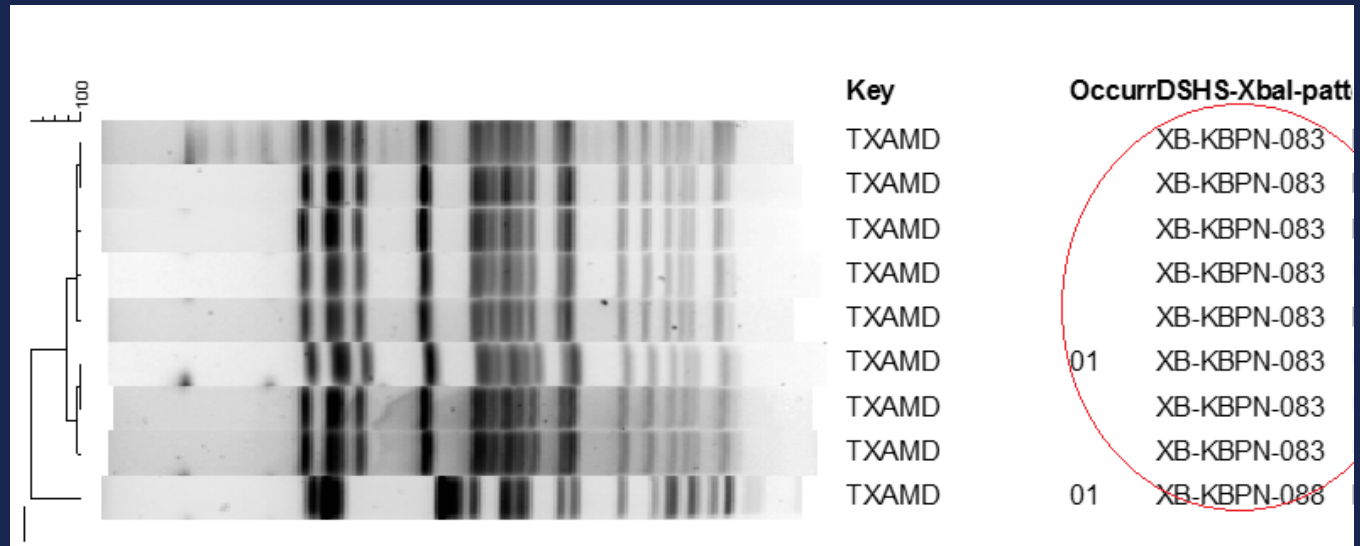
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Facility Type	Isolates with KPC Identified by ARLN	Number of Colonization Studies	Colonization Screenings performed	Number Colonized
Acute Care Hospital	3	1	1	0
Skilled Nursing Facility	0	2	34	6

- 9 positive specimens identified in 2 facilities from December 2017 – March 2018
 - 8 *Klebsiella pneumoniae* KPC
 - 1 *Serratia marcescens* KPC

PFGE



- PFGE performed on all *Klebsiella pneumoniae* KPC isolates from this facility
 - 2 patterns identified
 - All had matching pattern except 1



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Candida auris

Thi Dang, MPH, CHES, CIC

HAI Epidemiologist – Region 2/3



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Case Information

- 3/6/18: Texas DSHS was notified by CDC of a *C. auris* case in Oklahoma resident
- Tested by Oklahoma, reference lab, and confirmed by Minnesota ARLN
- Specimen collected 2/16/17
- Seen at 2 acute care facilities in Texas from 11/27/17-1/17/18
 - Located in 2 different local health department (LHD) jurisdictions



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Investigation Steps

- Determine Isolation Status
- Infection Control Assessment
- Retrospective Surveillance
- Point Prevalence Study
- Prospective Surveillance



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Is it really zero?

- Does the laboratory speciate *Candida*?
- What lab software is used for *Candida* ID?
- Were there any possible *C. auris* that could have been misidentified?
- Shared the CDC's webpage:
Recommendations for Identification of Candida auris
<https://www.cdc.gov/fungal/candida-auris/recommendations.html>



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Who can test?

- At the time of the investigation, the Texas ARLN did not yet have the capability to conduct Candida identification or AST
- Texas ARLN also could not test swabs collected for colonization testing



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Isolate
Submissions



TN ARLN

Colonization
Testing



CDC

Direct Communications

- Conference Calls Held
 - DSHS & CDC
 - DSHS & LHD 1
 - DSHS & LHD 2
 - DSHS, LHDs, OK, CDC, TX ARLN
 - DSHS, LHD 1, Facility IPs, Facility Lab x 3
 - DSHS, LHD 2, Facility IPs, Facility Lab x 3
 - DSHS, LHD 1, Facility IPs, Facility administration, Facility Corporate Office
 - DSHS, LHD 1, Facility IPs, Facility administration, Facility Corporate Office, CDC



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Thank you

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