Tennessee Department of Health
Public Health Laboratory Newsletter

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INSIDE THIS ISSUE:

TN Department of Health

When You Hear Hoof Beats Think Horses, Not Zebras

Streptococcus pneumoniae
CDC / James Archer

In late January 2018, a 49-year-old male arrived in the United States from Nigeria on business. He developed symptoms of fever, lethargy and hemoptysis (coughing up blood) three days after arrival. When he boarded a plane a week later to return to his home country, he was confused, became unresponsive and died.

The cause of his illness was unknown, therefore laboratory tests were requested. Because of the hemoptysis, health officials originally considered tuberculosis and were concerned due to the ability of TB to spread on the airplane and among business contacts. Also, CDC was reporting an outbreak of Lassa fever, a viral hemorrhagic illness, in Nigeria. Testing for tuberculosis and Lassa fever, among other pathogens, was requested from autopsy specimens obtained by the medical examiner. Testing performed at the Tennessee Department of Health Laboratory ruled out tuberculosis. Nasal swabs were tested using Film-Array Respiratory Panel to detect viral targets and three bacterial targets known to cause upper respiratory tract infections. None of these targets were detected. Whole blood was submitted for blood parasite detection – no DNA was detected by rt-PCR for *Plasmodium* species. Bioterrorism agents were not detected in blood specimens. CDC testing revealed no immunohistochemical evidence of old world arenaviruses (including Lassa virus), flaviviruses (including yellow fever and dengue), enteroviruses, *Leptospira* species, *Klebsiella* species, or *Plasmodium falciparum.* A pure culture of *Streptococcus pneumoniae* serotype 3 was identified from the whole blood submitted. At the same time, wet autopsy tissue from the liver was submitted to the CDC for testing. The diagnosis: active hepatitis with cholestasis with immunohistochemical

Continued on page 2

X-Linked Adrenoleukodystrophy Screening Added to NBS Panel

The TDH Newborn Screening Laboratory began testing all newborn screening samples for X-Linked Adrenoleukodystrophy on April 30, 2018. The samples will be tested by Liquid Chromatography Tandem Mass Spectrometry as a first tier screen. C26:0-Lysophosphatidylcholine, which results from accumulation of very long chain fatty acids, is being used as a biomarker to detect this disorder. Established cut-offs for the tests are:

	Within Normal Limits	Abnormal
C26:0-LPC	**<0.23 µmol**	**≥0.23 µmol**

Questions related to XALD screening should be directed to the NBS Laboratory at 615-262-6353 or Family Health and Wellness at 615-532-8462.

When You Hear Hoof Beats Think Horses, Not Zebras *(continued)*

and molecular evidence of *Streptococcus pneumoniae*. Multiple sections of the liver were tested; one section's test resulted positive for *Streptococcus* spp. (non-pyogenic) by immunohistochemical testing and by PCR *Streptococcus pneumoniae*.

Through the Epidemiology and Laboratory Capacity for Infectious Diseases Cooperative Agreement that supports surveillance and implements prevention and control programs, TDH participates in surveillance activities for *Streptococcus pneumoniae* among other organisms. Through the Emerging Infections surveillance program, cases are identified monthly for submission for antimicrobial susceptibility and serotyping of select Streptococcus pneumoniae. Year to date, there have been 515 *Streptococcus pneumoniae* invasive diseases identified in Tennessee. This case illustrates that even common diseases can present in uncommon ways. Laboratory surveillance for both common and uncommon pathogens remains essential to protect the health of people in Tennessee and, when presented, the world.

Submitted by: Henrietta Hardin—Manager, General Bacteriology
Consultation with Dr. David Kirschke—Northeast Regional Health Office

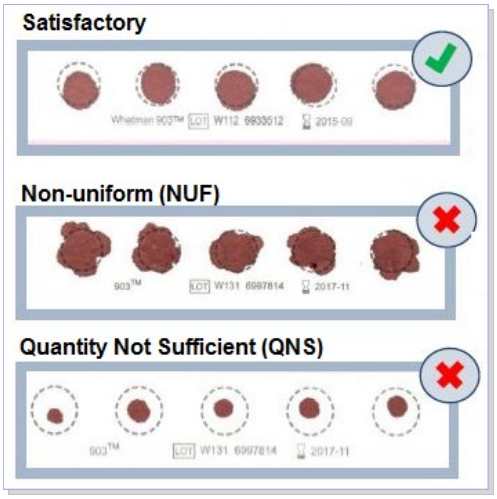
Common Causes for Unsatisfactory Newborn Screening Specimens

Two of the most common reasons for unsatisfactory Newborn Screening specimens are non-uniform samples and quantity not sufficient for analysis. The Newborn Screening lab now tests for 70 different disorders.

To reduce the number of QNS specimens, please ensure that each dotted circle on the filter card is filled. As long as the spots are on the filter paper and are not touching each other, you may also fill areas outside of the dotted circle. Each spot should contain one drop of blood that fully saturates the spot. Samples with overlapping blood spots will be reported as unsatisfactory due to non-uniform sample collection.

Other common causes of unsatisfactory Newborn Screening specimens, along with more about the Newborn Screening Program, can be found in the TN Newborn Screening Information Toolkit:

https://www.tn.gov/content/dam/tn/health/documents/Tennessee_Newborn_Screening_Program_Information_Toolkit.pdf



Submitted by: Thomas Childs—Manager, Newborn Screening

Paula Gibbs Named Clinical Division Director of Nashville Public Health Laboratory

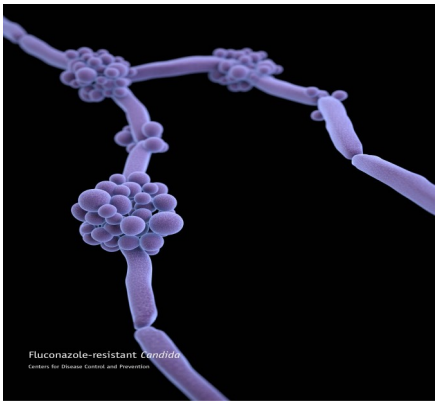
Paula Gibbs was chosen to fill the role of Clinical Division Director at the Nashville Public Health Laboratory, effective May 2018. With fifteen years of experience at the PHL, she brings, knowledge and a genuine passion for Public Health to her new role.

Paula most recently served as the Assistant Director of Microbiology over the Serology, Virology, Bacteriology, Special Microbiology and Media Preparation sections. She assisted the Informatics department with the implementation of the laboratory information system upgrade, StarLIMS v11. Prior to her position as Assistant Director, she was the supervisor of the Bacteriology section, supervisor of the Bioterrorism Team and manager of the Special Microbiology section. Paula earned her Bachelor's degree in Medical Technology from Middle Tennessee State University. She will complete her Master's degree in Public Health from East Tennessee State University this fall.

Candida Isolate Submission

The TDH Special Microbiology Mycology department encourages you to submit all of the *Candida* isolates reported as "***Candida* sp. – not *C. albicans***" isolated from sterile sites, or from sites that are deemed clinically significant. You may also submit *Candida* isolates that you are having difficulty with or are unable to identify. The TDH Mycology department may confirm, identify and perform susceptibility testing if these isolates meet the specified criteria. Isolates identified as *C.* ***albicans, C. dubliniensis, C. krusei, C. parapsilosis, C. lusitaniae and C. tropicalis*** will **not** undergo susceptibility testing.

Please contact Dorothy Baynham (615-262-6366 / Dorothy.Baynham@tn.gov) if you have any questions regarding *Candida* identification/submission, especially if the isolates are recovered from clinically significant sites.



CDC/ James Archer

TDH Public Health Laboratory to perform *Candida auris* Colonization Testing

In March 2018, the TDH Special Microbiology Mycology section began performing the *Candida auris* colonization screening assay as part of the AR Lab Network Regional Laboratory's core testing. Colonization screening is initiated by State and CDC officials when a positive case of *Candida auris* has been confirmed in a healthcare setting. Screening can take place in hospitals, nursing homes or other long term care setting.

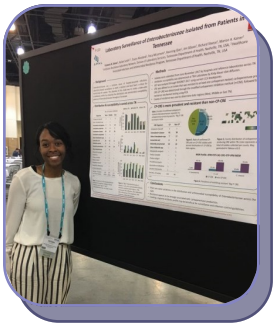
For more information about *Candida auris* visit the CDC webpage:

www.cdc.gov/fungal/candida-auris/index.html

TDH Laboratory Services Represented at 2018 APHL Annual Meeting

Several Tennessee Department of Health Public Health Laboratory employees attended the 2018 APHL Annual Meeting and Twelfth Government Environmental Laboratory Conference. The conference was held at Pasadena Convention center from June 2nd through June 5th, 2018. This four day conference addressed public health laboratory issues, trends and technologies relative to emerging infectious diseases, environmental health, emergency preparedness, informatics, food safety, newborn screening, global health and more.

Dr. Bob Read, Environmental Division Director, delivered a presentation titled "Gross Alpha-Gross Beta Analysis in Water by Liquid Scintillation Counting." Dr. Victoria Stone, APHL-CDC Antimicrobial Resistance Fellow presented a poster titled "Laboratory Surveillance of Enterobacteriaceae Isolated from Patients in Tennessee."



Submitted by:
Dr. Xiaorong Qian—Assistant Director, Molecular Biology/Enteric Bacteriology

Spotlight on Safety

BIOSAFETY CABINETS

IMPORTANT ENGINEERING TOOLS FOR SAFETY IN THE LABORATORY

What do we do to make the Biosafety Cabinet ineffective?

1. Walk past it
2. Open a door near it
3. Overcrowd it
4. Cover the front grill
5. Move hands in a sweeping motion through the sash opening (barrier)

How should we clean a spill in the Biosafety Cabinet?

1. Leave the BSC running
2. Cover spill with absorbent material
3. Carefully apply effective disinfectant and allow appropriate contact time
4. Flood the catch basin if contaminated
5. Decontaminate objects within the BSC before removal
6. Allow the BSC to run for 10 minutes before resuming work

What about the Ultra Violet light in the BSC?

1. UV light is not recommended as the sole disinfectant for decontamination
2. UV has limited penetrating power – surface or air only
3. UV light intensity decreases with
    a. Time
    b. Dirt and Dust
    c. Distance from the bulb
4. If you do not maintain the UV light bulb and use it correctly, it will not be as effective as you think!

Biosafety Cabinet training

Fundamentals of Working Safely in a Biological Safety Cabinet www.cdc.gov/labtraining/

This Center for Disease Control and Prevention Laboratory Training is Free and On-Line. It is a great way to allow for convenient training and certificate documentation for safety competencies in the laboratory.

Submitted by: Rolinda Eddings—Safety Officer (Rolinda.Eddings@tn.gov)

ARLN Update

In May, the ARLN department acquired the Tecan HP D300e digital dispensing platform to aid in new broth microdilution antimicrobial susceptibility testing against multi-drug resistant organisms. Through the use of HP inkjet printing technology, the Tecan digital dispenser can rapidly titrate microdilutions of different antimicrobial agents for susceptibility testing. This provides ARLN the capacity to screen clinically resistant isolates against novel drugs or drug combinations as the automated system would replace the need for manual, time-consuming preparations. By incorporating this remarkable technology into our testing strategy, we aim to provide significant insight into new therapeutic options.

Submitted by:
Tracy McLemore—Manager, ARLN/Enterics
Victoria Stone, Ph.D.—APHL-CDC Antimicrobial Resistance Fellow

TDH Laboratory Services Employment Opportunities
www.tn.gov/hr/js1/employment-opportunities.html

TRAINING NEWS

UPCOMING WORKSHOPS

TDH Packaging and Shipping Workshop

- **July 26—Nashville**
- **October 4—Jackson**

Additional Packaging and Shipping workshops will be offered by APHL in August in both Nashville and Memphis. Registration information will be posted on the TDH Continuing Education Website soon!

Courtesy Air Sea Containers, Miami, Florida.

LRN Workshop Cookeville June 14, 2018

2018 LRN Workshop

- **July 18—Knoxville**
- **August 1—Memphis**
- **August 22—Nashville**

A Plan of Action : Bioterrorism Preparedness for Clinical Labs *

- **September 13**
- **September 14**

All workshops held at TDH Laboratory Services in Nashville. Limited seats available

CDC/ J. Todd Parker; PhD

Online registration is now used for all TDH workshops!

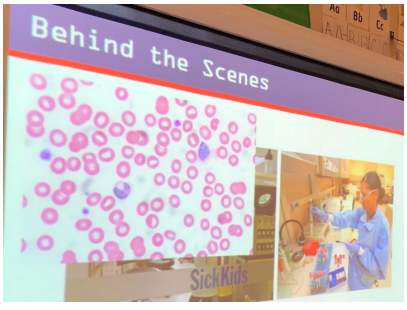
To register or for more information visit the TDH Lab Services Continuing Education Webpage:

www.tn.gov/health/health-program-areas/lab/lab-education.html

Lakeview Elementary Design Center Career Day

Amanda Uhls discusses careers as a public health laboratorian.

Amanda Uhls, M(ASCP), PH Laboratory Scientist I, TDH Serology Department, presented at Lakeview Elementary Design Center's Career Day in May. Amanda taught students about what being a laboratorian involves and informed the students about pursuing careers in Public Health.



TN Department of Health

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Division of Laboratory Services

630 Hart Lane
Nashville, TN 37216
615-262-6300

The Mission of Laboratory Services is to provide high quality analytical services of medical and environmental testing and to achieve the Mission of the Department of Health.

New Employees

MARCH 2018

Rhett Milam
PH Lab Technician 1
Support Services

Lauren Tyler
PH Lab Scientist 1
Newborn Screening

APRIL 2018

Allison Kelley
PH Lab Technician 1
Newborn Screening

Toccora Stewart
Scientist
Newborn Screening

Wesley White
Scientist
Newborn Screening

MAY 2018

Justin Simpson
PH Lab Scientist 2
ARLN CRE

Ekta Vazirani
PH Lab Scientist 1
ARLN CRE

Rebecca Van Balen
PH Lab Technician 2
Virology

Emily Mackie
PH Lab Scientist 1
Newborn Screening

Promotions

MARCH 2018

Lindsay Jolly
PH Lab Manager 2
Serology

Maya Spann
PH Lab Scientist 1
Enterics

Amanda Uhls
PH Lab Scientist 1
Serology

Rachel Yates
PH Lab Scientist 1
ARLN CRE

MAY 2018

Xiaorong Qian
PH Lab Manager 4
Molecular Biology

Paula Gibbs
PH Lab Division Director
Clinical Division

Faith Hite
PH Lab Technician 3
Support Services

Congratulations!

Congratulations on Your Retirement!

Wanda Frye Sue Fuller

www.tn.gov/health/health-program-areas/lab.html

Department of Health. Authorization No. 343472

Website only