January — February 2018 · Volume 9, Issue 1

HAI High Sign

News from the Virginia Department of Health

Healthcare-Associated Infections and Antimicrobial Resistance Program

In this issue:

Upcoming events:

March 8	CRE/CRPA Surveillance Webinar
March 29	VDH Field Epidemiology Seminar

Notes from VDH

The VDH HAI/AR Program is excited to welcome two new team members who will be focused on antimicrobial resistance and stewardship:

- Shaina Bernard is the VDH Antimicrobial Resistance (AR) Coordinator and will be developing and leading the AR program at VDH. She spent the last three years at VCU Health as a Clinical Pharmacy Specialist focused on Infectious Diseases and Antimicrobial Stewardship. She earned a Doctor of Pharmacy degree from Duquesne University Mylan School of Pharmacy, and completed residencies in pharmacy practice and infectious diseases pharmacy at the Hospital of the University of Pennsylvania.
- Emily Valencia is the new VDH Antimicrobial Resistance Epidemiologist. She has worked at VDH for the past two years as part of the Division of Surveillance and Investigation Monitoring Team conducting surveillance for Ebola Virus Disease and Zika virus infections. Emily has a Master of Public Health degree in Epidemiology from Drexel University, Dornsife School of Public Health, and completed a thesis on the overuse of antibiotics for otitis media with effusion.

2017-2018 Influenza Season Update

As of the week ending 2/10/18 (week 6), influenza activity in Virginia has been widespread for 11 weeks. During week 6, 11% of emergency department and urgent care visits were for an influenza-like illness (ILI). Statewide,

- The VDH Weekly Influenza Report with current flu activity is updated every Thursday for the previous week: http://www.vdh.virginia.gov/epidemiology/influenza-flu-in-virginia/influenza-surveillance/
- Influenza season arrives in Virginia every year and eventually reaches the "widespread" activity level and stays there for many weeks. This usually occurs between December and April. Over the past ten flu seasons, Virginia has spent an average of 12 weeks at widespread flu activity.
- During the 2014-15 flu season, the percent of visits for ILI peaked at 9.9% in week 52. During the 2009-10 H1N1 pandemic flu season, the percent of visits for ILI peaked at 13.9% in week 44.

Public Health Recommendations:

- The best prevention measure available is influenza vaccination. Everyone who is at least 6 months of age should get vaccinated. It is not too late to be vaccinated. If you have not gotten your flu shot yet, you are encouraged to go get one.
- Anyone sick with fever and cough and/or sore throat should stay home for at least 24 hours after the fever is gone (without the use of fever-reducing medicine).

2017-2018 Influenza Season Update (continued from page 1)

It is also important to always cover your cough and wash your hands regularly.

- Bed rest and drinking plenty of fluids are important for recovering from the illness. Doctors can also prescribe an antiviral medicine that can shorten the duration of illness and possibly lessen its severity.

For more information about influenza vaccination, see:

- The September 2017 edition of the HAI High Sign (page 2): http://www.vdh.virginia.gov/content/uploads/sites/13/2016/03/Sept-2017_HAI-High-Sign_8.1.pdf
- Printable CDC resources: https://www.cdc.gov/flu/resource-center/freeresources/index.htm
- A Toolkit for Long-Term Care Employers: Increasing Influenza Vaccination among Healthcare Personnel in LTC Settings https://www.cdc.gov/flu/toolkit/longterm-care/index.htm

Virginia Outbreak Reporting Requirements

As a reminder, in Virginia, any suspected or confirmed outbreak from a healthcare facility must be reported to the local health department as noted in the *Regulations for Disease Reporting and Control*. For a complete list of reportable diseases and conditions, please see: http://www.vdh.virginia.gov/content/uploads/sites/3/2016/03/Virginia-Reportable-Disease-List-October-2016.pdf

Reporting individual infections or laboratory-identified events in NHSN does not absolve a facility from reporting an outbreak directly to the local health department.

In addition, hospitals licensed in Virginia are required to report to the local health department two or more epidemiologically related infections, including, but not limited to, *Staphylococcus aureus*, group A beta hemolytic streptococcus, and *Salmonella* species occurring in obstetrical or nursery units (Board of Health Regulations 12 VAC 5-410-490 https://law.lis.virginia.gov/admincode/title12/agency5/chapter410/section490/).

To find your local health department please visit: http://www.vdh.virginia.gov/local-health-districts/.

CRE and CRPA Surveillance in Virginia

As of January 2018, carbapenemase-producing carbapenem-resistant *Enterobacteriaceae* (CP-CRE)* is nationally notifiable to CDC. In response, VDH is partnering with the state public health laboratory (DCLS) to host a webinar to discuss the surveillance of carbapenem-resistant organisms in Virginia, including new lab capacity to identify CRE, detect carbapenemase production and test for specific resistance mechanisms. DCLS is requesting that all labs voluntarily submit any CRE and carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) isolates to them for further characterization.

Upcoming CRE/CRPA Surveillance Webinar

The webinar will be hosted by VDH and DCLS on March 8, 2018 at 2pm with the goal of onboarding microbiology laboratorians and infection preventionists as to what lab testing DCLS will be able to provide, when and how to send specimens for testing, and reporting requests. **See attached flyer.** For more details, please contact Carole Carter at DCLS at (804) 648-4480 ext.123 or carole.carter@dgs.virginia.gov.

CRE colonization screening

While DCLS has been working hard to validate its CRE/CRPA lab testing capacity, it has been forwarding specimens to the Maryland Public Health Laboratory, which is part of the regional CDC-funded AR Laboratory Network (ARLN). In addition to other core testing activities, all seven ARLN labs have the **capacity to carry out testing for CRE colonization screening**. The Maryland lab would like to encourage facilities in its region (VA, DC, DE, MD, WV, NC, SC, PA) to use this service through DCLS to promote early identification and containment of rare CRE resistance mechanisms.

***Confirmed CP-CRE case definition (laboratory criteria only):**
E. coli, Klebsiella spp., or *Enterbacter* spp. from any isolate that is:

- Positive for known carbapenemase resistance mechanism (e.g., KPC, NDM, VIM, IMP, OXA-48) demonstrated by a recognized test (e.g. PCR, Xpert Carba-R)

OR

- Positive on a phenotypic test for carbapenemase production (e.g., metallo-beta-lactamase test, modified Hodge test, Carba NP, CIM, or mCIM)

Resources:

- CSTE CP-CRE case definition: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/2017PS/2017PSFinal/17-ID-04.pdf
- AR Laboratory Network: https://www.cdc.gov/drugresistance/solutions-initiative/ar-lab-networks.html
- Maryland Public Health Laboratory: https://health.maryland.gov/laboratories/Pages/ARLN.aspx

NHSN Notes

TAP Reports

The Targeted Assessment for Prevention (TAP) Strategy is a quality improvement framework deployed by CDC to offer a focused approach to infection prevention and help hospitals and healthcare systems overcome challenges in preventing HAIs. The TAP Strategy uses the cumulative attributable difference (CAD), a new metric that facilitates ranking of facilities and locations within facilities, to prioritize HAI prevention efforts where the greatest impact can be achieved toward reducing the number of patients with HAIs. VDH will begin sending quarterly TAP Reports to hospitals and District/Regional Epidemiologists. Be on the lookout for those!

2017 Patient Safety Facility Survey

The 2017 Patient Safety (PS) Facility Survey is available for completion (https://www.cdc.gov/nhsn/forms/57.103_pshospsurv_blank.pdf). This mandatory survey is completed by all enrolled facilities (hospitals, LTACHs, IRFs) participating in the NHSN Patient Safety Component to provide updated information on facility characteristics and practices.

The 2017 PS Annual Survey includes a new section of questions that ask about the healthcare facility's water management practices and policies currently in place. These questions are optional for 2017 and are not required to be completed in order to successfully save an annual survey. However, CDC and VDH do kindly ask that facilities make every effort possible to respond to these questions as they will inform us of current prevention activities in place that contribute to the control of *Legionella* in healthcare facilities.

Please remember, surveys must be completed and submitted in NHSN by March 1, 2018. Facilities that do not meet this deadline will be unable to complete monthly reporting plans. As a reminder, NHSN reports that use elements taken from the annual survey for risk adjustment models will reference the most recently completed survey. **Facilities that do not successfully complete the 2017 PS Annual Survey prior to February 15, 2018 will have their data risk adjusted using the 2016 survey.** If possible, we strongly suggest completing the survey prior to the CMS 2017Q3 deadline.

CDC Published 2015 NHSN State Data Reports

The 2015 state NHSN data reports (PDF fact sheets) for all participating Virginia acute care hospitals, long-term acute care hospitals, and inpatient rehabilitation facilities have been published here: https://www.cdc.gov/hai/surveillance/data-reports/2015-HAI-data-report.html.

Save the Date!

- **NHSN Patient Safety Component Annual Training,** February 26-March 2, 2018 at the CDC in Atlanta, GA. Registration closed on Friday, February 2. For those unable to attend the training in person, the course and associated materials will be available via live web streaming. Live web streaming begins February 26th at 8:00am EST. The agenda and instructions on how to view the web stream are posted here: https://www.cdc.gov/nhsn/training/annualtraining.html. In addition, the sessions will be accessible and archived on the NHSN website for future viewing.
- **NEW DATES! NHSN Long-Term Care Facility Annual Training**, July 16-18, 2018 at the CDC in Atlanta, GA. All three days will be dedicated to infection prevention and surveillance in the long-term care facility setting. Details forthcoming on registration. Additional updates can be found in the LTCF newsletter, available here: https://www.cdc.gov/nhsn/ltc/newsletters/index.html

The December 2017 NHSN Newsletter is available here:

- https://www.cdc.gov/nhsn/pdfs/newsletters/nhsn-nl-dec-2017-508.pdf

FDA Creates New Tool for Healthcare Providers

The FDA has created an online tool for health care providers to easily reference antibiotic and antifungal susceptibility testing interpretive criteria. Interpretive criteria, also known as breakpoints, are used to help choose an antimicrobial that has predicted sensitivity against the tested organism. The interpretive criteria for each antimicrobial can change as more studies and information are known after the antimicrobial is approved by the FDA. Previously, the FDA did not have a timely and efficient way to update package labeling for new interpretive criteria.

The 21st Century Cures Act allows the FDA to simultaneously update the breakpoints via the web page when changes are needed. The online tool provides the user with a list of antimicrobials linking them to breakpoints agreed upon by the FDA. The FDA retains the ability to accept or reject the reference breakpoints from the recognized development organization standards.

This new process will make it easier for drug manufacturers to change package labeling for interpretive criteria. Additionally, it will be a resource for clinicians to help determine the best antimicrobial for their patients.

To read more:

- https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm588836.htm
- To access the tool: https://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/ucm575163.htm

Increased Focus on Hand Hygiene by the Joint Commission

The Joint Commission recently implemented a new infection prevention and control standard. Effective January 1, 2018, any observation by Joint Commission surveyors of individual failure to perform hand hygiene while providing direct patient care will be cited as a deficiency. This will result in a Requirement for Improvement (RFI) under the Infection Prevention and Control (IC) chapter for all accredited programs.

Hand hygiene is one of the most important interventions used to reduce the risk of healthcare-associated infections (HAIs). Surveyors will also be surveying organizations' hand hygiene programs as required by the National Patient Safety Goal (NPSG) 07.01.01, introduced in 2004. This NPSG requires that health care organizations implement a hand hygiene program, set goals for improving compliance with the program, monitor its success, and improve the results through appropriate actions.

An RFI is generally issued to organizations that fail to implement and make progress in their hand hygiene programs. Previously, observations of individual failure to perform hand hygiene were not cited as deficiencies when there was otherwise a progressive program of increased compliance, with the exception of Home Care and Ambulatory Care Accreditation programs. The Joint Commission has determined that because organizations have been aware of this NPSG since 2004, there has been sufficient time for all organizations to train personnel who engage in direct patient care. The Joint Commission created this standard in an effort to eliminate failure to perform hand hygiene as one of the various causes of HAIs.

To read more, go to:

- http://apic.informz.net/z/cjUucD9taT02NTg3NDQ1JnA9MSZ1PTc2Njc4ODk4NCZsaT00ODAyMzU0Nw/index.html

WHO Priority List for New Antibiotics

Despite the growing concern of antimicrobial resistance, there has been little pharmaceutical interest or research in developing new antibiotics. In fact, there have only been two new antibiotic classes created in the past 20 years. To help target pharmaceutical research, the World Health Organization (WHO) worked with public health, pharmaceutical, and microbiologist partners to create a list of bacteria in need of new treatments. It was based on the following criteria: mortality, healthcare burden, community burden, prevalence of resistance, 10-year trend of resistance, transmissibility, preventability in the community setting, preventability in the healthcare setting, treatability, and pipeline. The final list contained 20 different bacterium (with 25 different resistance patterns) that require new therapies for treatment. Note, this list excluded multidrug-resistant tuberculosis, and other bacteria that required extended treatment courses. Next, evidence was extracted from different data sources to support the exclusion criteria of the 20 different bacteria for the final list. Then, 70 worldwide experts prioritized the list of antibiotic resistance-bacteria. Lastly, the expert responses were analyzed and validated for consistency. Figure 2 below shows Carbapenem-resistant *Acinetobacter baumannii* ranked the highest, closely followed by carbapenem-resistant *Pseudomonas aeruginosa.* Vancomycin-resistant *staphylococcus aureus* (VRSA) ranked at the bottom of the list of 20. This priority list is intended to help prioritize pharmaceutical research and development globally.

For more information, visit the WHO website:

- http://www.who.int/mediacentre/news/releases/2017/bacteria-antibiotics-needed/en/

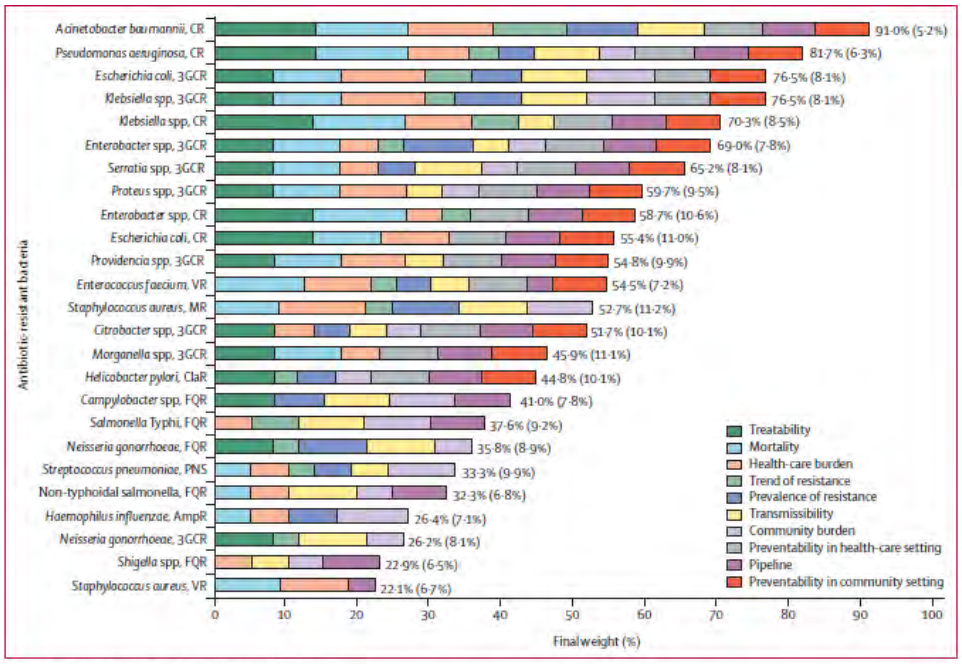


Figure 2: Final ranking of antibiotic-resistant bacteria
Mean (SD) pathogen weights were derived by the software from the survey participants' preferences. The segments represent the contribution of each criterion to each pathogen's final weight. CR=carbapenem resistant. 3GCR=third-generation cephalosporin resistant. VR=vancomycin resistant. MR=meticillin resistant. ClaR=clarithromycin resistant. FQR=fluoroquinolone resistant. PNS=penicillin non-susceptible. AmpR=ampicillin resistant.

Summary of Outbreak Response and Incident Management: SHEA Guidance and Resources for Healthcare Epidemiologists in Acute-Care Hospitals

The Society for Healthcare Epidemiology of America (SHEA) recently released an expert guidance document (https://www.ncbi.nlm.nih.gov/pubmed/29187263) to serve as a resource for healthcare epidemiologists (HEs) working in U.S. acute care hospitals. Its main objectives are to:

1. provide high-level guidance and context for the incident management of a range of infectious disease outbreaks
2. prepare HEs to work within an emergency response framework, including how HE skills and expertise apply to scenarios that require enhanced preparedness and response efforts, and the involvement and responsibility of the facility and other healthcare providers

The guidance was developed by the SHEA/CDC Outbreak Response Training Program Advisory, Expert Guidance and Education Panels, all SHEA members, and based in part on a needs assessment of HEs or infectious disease specialists among U.S. SHEA Research Network members. There was additional input from AACN, ACEP, APIC, CDC and SHEA. The document received CDC clearance and has been officially endorsed by SHEA, AACN, ACEP, CSTE, HCA, IDSA, NACCHO and PIDS.

The document is broken down into several sections, each with specific recommendations and corresponding rationale, including:

- Incident management – organizational structures
- Stakeholders in preparedness and response
- Communication strategies
- Roles (including leadership) and responsibilities of the HE in facility and emerging pathogen outbreaks
- Activities and responsibilities of the HE in incident management
- Role of the HE in coordination with stakeholders
- Additional resources and assets for outbreak response
- Clinical and support activities
- Equipment and supplies for management of an emerging pathogen outbreak
- Role of the HE in experimental vaccines, therapeutics, and clinical research during an emerging pathogen outbreak
- Role of non-HE infection prevention staff and direct care healthcare providers
- Special considerations for resource-limited facilities, special patient populations and long-term care facilities

AHRQ's Toolkit to Promote Safe Surgery

The Agency for Healthcare Research and Quality (AHRQ) implemented The Toolkit to Promote Safe Surgery to reduce complications and surgical site infections. The toolkit is composed of two guides and tools for each, and a variety of instructional modules. The first guide, Applying AHRQ Comprehensive Unit-based Safety Program To Promote Safe Surgery (CUSP), demonstrates steps to improve patient safety using evidence-based techniques. This guide also includes tools on creating a CUSP Safety Team, how to involve stakeholders, and information on training.

The second part of the guide, the Surgical Complication Prevention Guide, uses the TRanslate evidence Into Practice (TRIP) model to reduce surgical complications. By using evidence-based interventions, identifying barriers to implementation, measuring baseline performance, and ensuring all patients receive the intervention, this model is broken down into phases to help bring evidence-based practices to the patient. In addition, by drawing from the Four E's (Engage, Educate, Execute, and Evaluate) this guide helps involve stakeholders in the quality improvement. This guide also includes different examples from the field, including nurse anesthetists, infection preventionists, surgeons, etc.

Overall, use of this toolkit has shown to reduce surgical site infections (from 25-50%).

For more information, visit the AHRQ website: https://www.ahrq.gov/professionals/quality-patient-safety/hais/tools/surgery/index.html

Antibiotic Resistance Solutions Initiative

The CDC's Antibiotic Resistance (AR) Solutions Initiative (https://www.cdc.gov/drugresistance/solutions-initiative/index.html) is a multi-pronged approach to supporting national efforts to address the threat of antibiotic resistance across healthcare settings, food and communities. It is a collaborative effort involving professional organizations, health systems, academic institutions, local and state health departments and multiple programs within CDC. Activities include implementing AR laboratory and epidemiology capacity, investments in research and development, antibiotic stewardship and other HAI/AR prevention programs, and fighting drug-resistant tuberculosis (TB), among others.

Antibiotic Resistance Solutions Initiative (continued from page 5)

For example, the drug-resistant TB piece of the AR Solutions Initiative seeks to reduce the rate of MDR-TB by 15%. One solution involves the use of smartphone or video technology to monitor treatment and ensure treatment completion.

In 2016, 9,272 cases of TB were reported in the U.S., of which 96 were multidrug-resistant (MDR), and one was extensively drug-resistant (XDR). The CDC estimates that the direct treatment cost per MDR-TB case is roughly 9 times (and almost 30 times per XDR-TB case) that of a non-MDR-TB case. The World Health Organization includes MDR- and XDR-TB on its priority list (http://www.who.int/medicines/publications/WHO-PPL-Short_Summary_25Feb-ET_NM_WHO.pdf?ua=1) for research and development of new antibiotics for antibiotic-resistant bacteria.

The CDC recently released an updated map showing key AR investments and solutions by state (https://wwwn.cdc.gov/arinvestments). Under the AR Solutions Initiative, Virginia received about $3 million during fiscal year 2017. One 2016 solution highlighted for Virginia was a statewide antibiotic stewardship event held in collaboration with VDH, the Virginia Hospital & Healthcare Association and other partners to improve antibiotic prescribing and use (https://wwwn.cdc.gov/ARInvestments/PDFDocs/2017/Virginia-2017-CDC-AR-Investments.pdf).

Other solutions highlighted by the Initiative include enhancing the early recognition of sepsis through heightened public awareness and improvement in antibiotic use, better understanding differences in prescribing practices in provider offices across states to develop strategies for improvement, and expanding and using NHSN data to support better antibiotic use in hospital settings.

SHEA Expert Guidance on Duration of Contact Precautions for Acute Care Settings

The Society for Healthcare Epidemiology of America (SHEA) published in January an expert guidance document outlining recommendations for the discontinuation of contact precautions in acute care following antimicrobial-resistant infection or colonization. Organisms addressed by the guidance document include methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), *Clostridium difficile,* and multidrug-resistant *Enterobacteriaceae*, including carbapenem-resistant *Enterobacteriaceae* (CRE) and extended-spectrum β-lactamase (ESBL)-producing organisms. The guidance applies only to acute care settings that already use contact precautions for the aforementioned organisms.

The publication is available here: dx.doi.org/10.1017/ice.2017.245

Antibiotic Stewardship Basics for Healthcare Professionals

Linked below are three on-demand education modules to introduce nurses, pharmacists and practitioners to the basics of an appropriate Antibiotic Stewardship Program (ASP). Successful completion of the module and posttest will enable you to gain continuing education credits for your specific license if you are a nurse, pharmacist, or practitioner.

Learning Objectives: At the completion of this activity, the participant will be able to:

1. Define Antibiotic Stewardship
2. Discuss the benefits of having an Antibiotic Stewardship Program (ASP)
3. List guideline recommendations for implementing an ASP
4. Describe Antibiotic Stewardship strategies in the hospital setting
5. Outline specific initiatives to meet regulatory requirements

Antibiotic Stewardship Basics for Nursing
Instructor: Susan D. Moeslein MSA, BSN, RN, ACM-RN, CIC

Antibiotic Stewardship Basics for Pharmacy
Instructor: Rebeccah J. Collins, Pharm D, BCPS

Antibiotic Stewardship Basics for Practitioners

Healthcare-Associated Infections and Antimicrobial Resistance Program
hai@vdh.virginia.gov | (804) 864-8141
http://www.vdh.virginia.gov/surveillance-and-investigation/hai/
http://www.vdh.virginia.gov/clinicians/

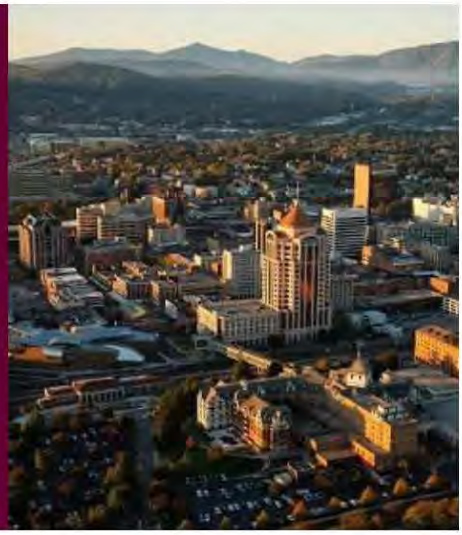
VDH VIRGINIA DEPARTMENT OF HEALTH

Seth Levine, Epidemiology Program Manager
Sarah Lineberger, HAI Program Manager
Shaina Bernard, AR Coordinator
Carol Jamerson, HAI Nurse Epidemiologist
Virgie Fields, HAI Epidemiologist
Emily Valencia, AR Epidemiologist
Sarah Legare, HAI/AR Policy & Prevention Specialist
Tisha Mitsunaga, CDC/CSTE HAI Epidemiology Fellow
Ashley Rose, HAI Program Assistant

Field Epidemiology Seminar 2018

A full day of presentations about outbreaks and other exciting public health activities in Virginia.

Thursday, March 29th
9:00 a.m.— 4:00 p.m.
Registration at 8:30 a.m.



Sheraton Hotel &
Conference Center
2801 Hershberger Road
Roanoke, VA 24017

Registration is online through TRAINVirginia:
In-Person: Course ID is 1073507
Webinar: Course ID is 1073505
https://va.train.org/

You will need to login on the TRAIN site. If you do not already have an account, it may take a few minutes to create one. (This is a one time entry. Subsequent visits will only require your login name and password.)

If you have an account and have forgotten your password, or you encounter any problems during the registration process, please email robert.bradley@vdh.virginia.gov or call 804-864-8233.

*This activity has been approved for **AMA PRA Category 1 Credits™**. Credits are available for in-person participants only.*

Questions?

Katherine McCombs	Phone: 804-864-8119 katherine.mccombs@vdh.virginia.gov

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

SAVE the DATE!

MARCH 8, 2018

2:00–3:30 pm

DCLS and VDH are presenting a WEBINAR!

***CRE and CRPA Surveillance in Virginia*:**

⇒ New CRE and CRPA lab testing capacity at DCLS

⇒ Surveillance of Carbapenem-resistant organisms at VDH

⇒ Virginia's Role in the CDC's Antibiotic Resistance Laboratory Network (ARLN)

Presenters:

Emily K. Craig, M.S., M(ASCP)^{CM}
Principal Scientist
Microbial Reference
Division of Consolidated Laboratory Services

LaToya A. Griffin-Thomas, Ph.D.
Lead Scientist
Bioterrorism/Special Pathogens Response Coordinator
Division of Consolidated Laboratory Services

Tisha Mitsunaga, DrPH, ScM
CDC/CSTE Applied Epidemiology Fellow
HAI/AR Program, Virginia Department of Health

DCLS

Webinar link will be sent to you in March.

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