Fourth Annual Middle Tennessee Antimicrobial Stewardship Symposium

Friday, January 31, 2020
Ayers Conference Room
Belmont University
Nashville, TN
7:15am-4:00pm

Register Here
Registration is limited to the first 175 registrants

Deadline to Register: Wednesday, January 22, 2020

$99-General Registration  $75-Belmont Faculty/Alumni/Preceptors
$50-Students & Residents; No CE Credit

Up to 5.75 contact hours (0.575 CEUs) of LIVE CE Credit Available (CME, CNE, CPE) for these Knowledge-based CE Activities

Target Audiences: Nurses, Pharmacists, Physicians, Infection Preventionists

Keynote Speaker
Gerald B. (Jerry) Hickson, MD
Joseph C. Ross Chair in Medical Education & Administration, Professor of Pediatrics, Founding Director of Center for Patient & Professional Advocacy
Vanderbilt University Medical Center, Nashville, TN

Symposium Learning Objectives
At the end of this symposium, the learner should be able to:

- Discuss state and nationwide antimicrobial stewardship efforts and how they affect your practice.
- Discuss how to appropriately utilize current information and diagnostics technology to maximize your stewardship impact in your facilities.
- Identify resources available to assist in the development of antimicrobial stewardship programs in the acute care, long-term care, and outpatient settings.
- Evaluate an antimicrobial stewardship program using evidence-based metrics.
- Explain the importance of interdisciplinary and inter-facility collaboration in antimicrobial stewardship programs.
- Discuss optimization of antimicrobial therapy for certain infections based on your community's and region's antibiogram.

Questions? Email pharmacyce@belmont.edu or call 615-460-5730
Program Agenda

7:15-7:45am  Registration & Breakfast

7:45-8:00am  Welcome

8:00-8:30am  Outpatient Antimicrobial Stewardship: Current State and Future Endeavors
             (0.5 Contact Hours; UAN: 0863-0000-20-001-L04-P)
             Milner Staub, MD, VA Quality Scholar, Clinical Instructor, Department of Medicine, Division of Infectious Diseases; Veterans Healthcare Administration Geriatric Research Education and Clinical Center at VA Tennessee Valley Healthcare System and Vanderbilt University Medical Center, Nashville, TN
             
             Learning Objectives:
             1. Describe current national policy, including CDC recommendations and Joint Commission requirements, regarding outpatient stewardship
             2. Give background on prior published outpatient stewardship projects
             3. Present data on outpatient antibiotic use in Tennessee
             4. Discuss ongoing and planned outpatient antimicrobial stewardship projects from the Department of Health and from other Tennessee healthcare systems

8:30-9:15am  Truly Successful Antimicrobial Stewardship? Bring in the Nurses
             (0.75 Contact Hours; UAN: 0863-0000-20-02-L04-P)
             Rita Drummond Olans, DNP, RN, CPNP-PC, APRN-BC, Assistant Professor and NP Hospitalist, MGH Institute of Health Professions and Spaulding Hospital, Boston, MA
             
             Learning Objectives:
             1. Understand why nurses are often underutilized in antimicrobial stewardship programs
             2. Recognize what assets nurses can bring to antimicrobial stewardship
             3. Examine strategies to engage nurses into your antimicrobial stewardship program

9:15-9:35am  Beverage Break

9:35-10:20am Updates in the Management of Pneumonia
             (0.75 Contact Hours; UAN: 0863-0000-20-03-L01-P)
             Tufik Assad, MD, MSCI, Director of the Critical Care Unit and Lung Nodule Clinic, Williamson Medical Center, Franklin, TN
             
             Learning Objectives:
             1. Recognize the role and limitations of laboratory testing in pneumonia
             2. Identify empiric antibiotics for outpatient and inpatient community-acquired pneumonia
             3. Identify empiric antibiotics for hospital-acquired and ventilator-associated pneumonia
             4. Determine appropriate antibiotic treatment durations for all types of pneumonia

10:20-11:05am Oral Antibiotics for Systemic Infections: Armed to the Teeth or Left with a Bad Taste in the Mouth
                (0.75 Contact Hours; UAN: 0863-0000-20-04-L01-P)
                Athena Hobbs, PharmD, BCIDP, Infectious Disease Clinical Pharmacy Specialist, Baptist Memorial Hospital-Memphis, Memphis, TN
                
                Learning Objectives:
                1. Compare bioavailability of oral antibiotics
                2. Assess infection site penetration data of oral antibiotics
                3. Analyze new literature describing use of oral antibiotics for systemic infections

11:05-11:15am  Beverage Break
Program Agenda (continued)

11:15am-12:15pm  
**KEYNOTE PRESENTATION**

**Antibiotic Stewardship and the Pursuit of Professional Accountability**

(1.0 Contact Hour; UAN: 0863-0000-20-05-L04-P)

**Gerald B. (Jerry) Hickson, MD**, Joseph C. Ross Chair in Medical Education & Administration, Professor of Pediatrics, Founding Director of Center for Patient & Professional Advocacy, Vanderbilt University Medical Center, Nashville, TN

**Learning Objectives:**

1. Describe the characteristics of a professional  
2. Identify behaviors that undermine a culture of safety and respect  
3. Describe the connection between professional accountability and antimicrobial stewardship  
4. Describe a tiered intervention model to address variations in clinical performance and promote safe use of antibiotics

12:15-1:00pm  
Lunch & Visit Vendors

1:00-1:30pm  
**Roundtable Session #1** (Roundtable topics listed on pp. 4-6)

1:30-1:35pm  
Travel to Next Roundtable Session

1:35-2:05pm  
**Roundtable Session #2** (Roundtable topics listed on pp. 4-6)

2:05-2:35pm  
**Poster Session** (Poster titles and backgrounds listed on pp. 7-9)

2:35-2:40pm  
Travel to Next Roundtable Session

2:40-3:10pm  
**Roundtable Session #3** (Roundtable topics listed on pp. 4-6)

3:10-3:15pm  
Travel to Next Roundtable Session

3:15-3:45pm  
**Roundtable Session #4** (Roundtable topics listed on pp. 4-6)

3:45-3:50pm  
Return to Conference Room

3:50-4:00pm  
**Closing & Raffle Prizes**

Questions? Email pharmacyce@belmont.edu or call 615-460-5730.
**ROUNDTABLE SESSIONS**

Each attendee will be able to attend four of the following roundtable topics.

Each 30-minute session provides 0.05 CEUs.

**Session 1 (1:00-1:30pm) & Session 2 (1:35-2:05pm)**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
<th>Learning Objectives</th>
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| **A Retrospective Review of Vancomycin Associated Acute Kidney Injury Pre and Post Education and Implementation of Population Kinetics and Area Under the Curve (AUC)/Minimum Inhibitory Concentration (MIC) Monitoring** | Wiyanna Bruck, PharmD, BCIDP, Clinical Assistant Professor of Pharmacy Practice, South College School of Pharmacy, Knoxville, TN | - Recognize the importance of appropriate therapeutic drug monitoring for vancomycin  
- Contrast the occurrence of acute kidney injury before and after the implementation of vancomycin peak levels in addition to standard vancomycin trough levels attainment |
| **Can Laboratory Diagnostics Facilitate Antibiotic Stewardship in Respiratory Infections?** | Tufik Assad, MD, MSCI, Director of the Critical Care Unit and Lung Nodule Clinic, Williamson Medical Center, Franklin, TN | Dr. Assad has a relevant financial relationship with BioFire Diagnostics as a paid speaker, consultant, and teacher.  
- Identify the role of procalcitonin in distinguishing viral from bacterial infections in the respiratory tract  
- Appropriately utilize PCR-based testing to tailor antibiotics in respiratory infections |
| **Handshake Stewardship** | Jessica Gillon, PharmD, BCIDP, Infectious Diseases Clinical Pharmacy Specialist, Vanderbilt Children's Hospital, Nashville, TN | - Identify the key components of handshake stewardship  
- Identify the pros and cons of the handshake stewardship model |
| **Outbreak Management 101: Containment Strategies** | Fabiola DeMuth, MSN, RN, CIC, CMIP, IPCO, Infection Preventionist Nurse Consultant, Tennessee Department of Health; Division of Communicable and Environmental Diseases and Emergency Preparedness, Nashville, TN | - Define plans for multi-drug resistant organism containment across the continuum of care  
- Increase awareness of new state-level and national resources for containment and response  
- Collaborate between laboratory, infection preventionists, epidemiologists, and other key players |
| **Outpatient Parenteral Antimicrobial Therapy (OPAT) Approach to Proper Monitoring and Stewardship** | Michael Wright, PharmD, BCPS, BCCCP, Critical Care Pharmacy Specialist, Williamson Medical Center, Franklin, TN | - Evaluate traditional contraindications to OPAT  
- Describe appropriate OPAT monitoring  
- Employ OPAT specific antimicrobial stewardship interventions |
• **Reducing Antibiotic Use for Acute Bronchitis in the Outpatient Setting: Quality Improvement at Tennessee Valley Healthcare System**  
  **UAN: 0863-0000-20-010-L04-P**  
  **Learning Objectives:**  
- Identify two barriers to antibiotic stewardship efforts in the outpatient setting  
- Describe three ways to engage stakeholders in quality improvement efforts

• **SAAR and Other Metrics: Let's Use What We Have**  
  **UAN: 0863-0000-20-015-L04-P**  
Shaefer Spires, MD, Assistant Professor of Medicine, Duke Center for Antimicrobial Stewardship and Infection Prevention, Duke University Medical Center, Durham, NC  
  **Learning Objectives:**  
- Understand how to use the SAAR to drive new Antimicrobial Stewardship (AS) initiatives  
- Understand what other metrics are helpful in driving change

• **The Impact of Antibiotic Stewardship Education on Parental Care Satisfaction and Follow-up**  
  **UAN: 0863-0000-20-014-L04-P**  
Paige Ferguson Barnett, DNP, FNP-BC, Family Nurse Practitioner, Primary Healthcare Group, Lafayette, TN  
  **Learning Objectives:**  
- Identify the effects of antibiotic stewardship education on parental satisfaction of care  
- Measure if parental education on antibiotic stewardship affects the rate of follow-up visits  
- Determine if the child had a follow-up visit, was an antibiotic prescribed? If so, what was it?

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**Session 3 (2:40-3:10pm) & Session 4 (3:15-3:45pm)**

• **Antifungal Stewardship**  
  **UAN: 0863-0000-20-009-L04-P**  
Gowri Satyanarayana, MD, Assistant Professor, Vanderbilt University Medical Center, Nashville, TN  
  **Learning Objectives:**  
- List approaches to restricting antifungal agents  
- Describe the development of antifungal guidelines for an institution

• **Creating and Implementing Outpatient Antimicrobial Stewardship Metrics for Individual Providers**  
  **UAN: 0863-0000-20-006-L04-P**  
Milner Staub, MD, VA Quality Scholar, Clinical Instructor, Department of Medicine, Division of Infectious Diseases, Veterans Healthcare Administration Geriatric Research Education and Clinical Center at VA Tennessee Valley Healthcare System and Vanderbilt University Medical Center, Nashville, TN  
  **Learning Objectives:**  
- Create antimicrobial stewardship metrics for providers  
- Understand how to validate individual provider data  
- Provide individual antibiotic prescribing feedback to providers

• **Impact of a Fluoroquinolone Stewardship Program on Utilization in a Small Community Healthcare System**  
  **UAN: 0863-0000-20-011-L01-P**  
James M. (Mike) Burr, RPh, Director of Pharmacy, Marshall Medical Centers - Huntsville Hospital, Guntersville, AL  
  **Learning Objectives:**  
- Define some of the collateral damage associated with systemic fluoroquinolone use  
- List strategies for modifying prescriber habits  
- Explain the importance of provider specific data provision in modifying prescriber habits
• **Microbiology: A Crash Course for Nurses**  
  Jamie Adam, DNP, RN, NP-C, Associate Professor of Nursing, Belmont University, Nashville, TN

  **Learning Objectives:**
  - Identify 2 microbiology concepts that directly impact patient care
  - Identify 2 microbiology best practices that improve patient outcomes

• **Microbiology: Clinical Pearls for Pharmacists**  
  UAN: 0863-0000-20-018-L04-P  
  Montgomery Green, PharmD, BCPS, Associate Professor, Belmont University College of Pharmacy, Nashville, TN

  **Learning Objectives:**
  - Evaluate recent Clinical & Laboratory Standards Institute (CLSI) updates and discuss impact on clinical practice
  - Discuss clinically relevant Minimum Inhibitory Concentration (MIC) considerations
  - Differentiate between select rapid diagnostic tests and develop a plan based on results

• **Preventing MRSA Bacteremia in Healthcare Settings**  
  UAN: 0863-0000-20-017-L04-P  
  Lizzy Adeyemi, PhD, RN, CIC, CPHQ, CPPS, Clinical Quality Improvement Specialist/Infection Preventionist, Tennessee Hospital Association, Brentwood, TN

  **Learning Objectives:**
  - Describe the burden of MRSA bacteremia in Tennessee
  - Identify two evidence-based strategies that are useful in preventing MRSA bacteremia in healthcare settings
  - Describe actions that pharmacists and nursing can take to support prevention of MRSA bacteremia

• **Tackling Inpatient Penicillin Allergies When Skin Testing is not an Option**  
  UAN: 0863-0000-20-019-L04-P  
  Justin Muklewicz, PharmD, PGY-2 Infectious Diseases Pharmacy Resident, Huntsville Hospital, Huntsville, AL

  **Learning Objectives:**
  - Describe the consequences of inappropriate penicillin allergy documentation
  - Discuss the key elements of penicillin allergy clarification when penicillin allergy skin testing is not available
  - Develop penicillin allergy clarification strategies using a team-based approach in the inpatient setting to improve antibiotic selection

• **Urinary Tract Infection (UTI) Treatment in Long-Term Care Facilities (LTCF)**  
  UAN: 0863-0000-20-016-L01-P  
  Cullen Adre, PharmD, Tennessee Department of Health, Nashville, TN

  **Learning Objectives:**
  - Discuss best treatment options for UTI
  - Evaluate when treatment is inappropriate

Questions? Email pharmacyce@belmont.edu or call 615-460-5730.
Third-Generation Cephalosporin Susceptibility Among Citrobacter, Enterobacter, Morganella, and Serratia: The Importance of Adhering to a 48-Hour Rule Out

Authors: Jeremy Stultz, PharmD; Tabitha Bice, PharmD; Sandra R Arnold, MD; Bindiya Bagga, MD; Kelley R Lee, PharmD

After prolonged third-generation cephalosporin (TGC) exposure, Citrobacter, Enterobacter, Morganella, and Serratia species can exhibit resistance via derepression of AmpC beta-lactamase despite initial susceptibility. Some of these organisms also have intrinsic resistance. The aim of this study was to determine factors associated with TGC non-susceptibility in these organisms when isolated in a urine or respiratory tract culture among pediatric patients.

The impact of pharmacist-provided penicillin allergy consultation and testing on the use of meropenem, levofloxacin, aztreonam or vancomycin at a midsize community hospital

Authors: Jessie Hipple, PharmD, MM & Zina Gugkaeva PharmD, BCIDP

Penicillin allergy is the most commonly reported drug allergy, and while 10% of patients report a penicillin allergy, only 1% have a true allergy. When a patient has a penicillin allergy listed this can severely limit how a prescriber treats an infection, and could prevent patients from receiving first line antibiotics. The purpose of this study is to determine the impact of pharmacist-provided penicillin allergy consultation on the deescalation of meropenem, levofloxacin, aztreonam and vancomycin in patients after removal of the penicillin allergy from their electronic health record (EHR), compared to patients who do not have it removed.

Impact of procalcitonin testing on the use of antibiotic therapy in patients with suspected viral-bacterial coinfections: a retrospective analysis

Authors: Lareine Karpuzian, PharmD; Zina Gugkaeva, PharmD, BCIDP; Elizabeth Hinson, PharmD, BCPS; Jeff Binkley, PharmD, BCPS

Resistant bacterial infections have recently become a nationwide public health crisis. Appropriate diagnosis of infections of unknown etiology, where symptomatic presentation of viral infections can mimic those of bacterial infections, is paramount to choosing the correct treatment and decreasing antibiotic overuse and ultimately, microbial resistance. Recent studies have been conducted on the use of procalcitonin, the peptide precursor of the hormone calcitonin, as a diagnostic tool in determining if an infection is of bacterial origin. The objective of this study is to evaluate the impact of procalcitonin testing on the use of antibiotics in patients with suspected viral-bacterial coinfections.

Institutional occurrence of clostridium difficile infection with and without the use of probiotics

Authors: Sophia Carter, PharmD; Zina Gugkaeva, PharmD, BCIDP; Erika Hasford, PharmD, BCPS; Jennifer Whittington, PharmD, BCPS

Clostridium difficile infection (CDI) is the most common cause of infectious diarrhea in healthcare settings. Antibiotic related gastrointestinal disturbances may cause an overgrowth of pathogens like Clostridium difficile. Probiotics are used to maintain the balance of gut flora, which aids in the prevention of CDI. According to the Infectious Diseases Society of America (IDSA) guidelines, there is insufficient data to recommend probiotic administration as primary prevention. However, there have been studies that link probiotics to CDI prevention. The objective of this study is to determine the occurrence of CDI in patients taking antibiotics with and without the use of probiotics.
Pharmacist lead penicillin allergy review in surgical patients

Authors: April Ingason, PharmD; Tyler Byrd, PharmD; Jamie Hopkins, PharmD, BCIDP

Penicillin is one of the most commonly reported allergies. Approximately 10% of the population reports a penicillin allergy, and consequently, beta lactam antibiotics are avoided in this patient population. However, data suggests only 1-3% of people have a true IgE-mediated allergic reaction to penicillin and up to 80% will lose sensitivity ten years after exposure. According to current guidelines for antimicrobial prophylaxis in surgery, a cephalosporin is preferred for most general and orthopedic surgeries. Improperly reported and/or documented beta-lactam allergies can lead to unnecessary use of second-line antibiotics. This may result in increased antibiotic resistance, toxicity, and cost. The purpose of this study is to determine if a pharmacist-driven allergy review and cephalosporin test dose program leads to a decrease in second-line antibiotic use for surgical prophylaxis.

Evaluation of intravenous vancomycin use at Vanderbilt University Hospital (VUH)

Authors: Connor Deri, PharmD; Whitney J. Nesbitt, PharmD, BCPS, BCIDP; George E. Nelson, MD

Intravenous (IV) vancomycin is one of the most prevalently used inpatient antibiotics at VUH. Overuse contributes to the development of antibiotic resistance and adverse events. The purpose of this systematic review is to characterize and evaluate the use of IV vancomycin at VUH.

A report on the real world use of eravacycline

Authors: Athena L.V. Hobbs, PharmD, BCIDP; Michael S. Gelfand, MD; Kerry Cleveland, MD; Kimberly Saddler, RPh; Miguel Sierra-Hoffman, MD

Eravacycline, a novel, fully synthetic fluorocycline of the tetracycline class, was recently approved by the Food and Drug Administration (FDA) for use in complicated intra-abdominal infections (cIAIs). Its unique design helps it retain in vitro activity against two acquired tetracycline-specific resistant mechanisms, in addition to its activity against anaerobes, methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant Enterococcus spp. (VRE), some extended-spectrum beta-lactamase (ESBL) producing Enterobacteriaceae, and some carbapenem-resistant Enterobacteriaceae (CRE). Though it does not have pseudomonal activity, eravacycline MIC90s for carbapenem-resistant Acinetobacter are 2 to 4 times lower than other tetracyclines. In light of the current landscape of limited and oftentimes intolerable side effects of last line antibiotic therapy for treatment of multi-drug resistant pathogens, we aim to characterize early clinical experience with this new antibiotic.

Pilot Testing of an Antimicrobial Discharge Education Performed by APPE Students

Authors: Janine Miller, PharmD Candidate 2020 & Edobasi McGee, PharmD, BCPS

Discharge planning is paramount to patient safety. Antimicrobial stewardship also plays a huge role in patient safety and quality. An important target in antibiotic stewardship programs is to improve adherence to recommended treatment guidelines for infection, including recommended duration of therapy at hospital discharge. Student pharmacist are capable of performing discharge education on antimicrobials and can serve as dedicated resource for service expansion. The aim of the study was to determine the effects of targeted antimicrobial discharge counseling performed by advance pharmacy practice experience (APPE) students.
Impact of Methicillin-Resistant *Staphylococcus Aureus* Screening on the Length of Empiric Vancomycin Therapy for Pneumonia

*Authors: Emily Byers, PharmD; Jarett Worden, PharmD; Robin Tagatz, PharmD*

The purpose of this study is to determine the extent to which nasal methicillin-resistant *Staphylococcus aureus* (MRSA) polymerase chain reaction (PCR) screening impacts length of empiric vancomycin therapy for pneumonia.

Assessing Antimicrobial Stewardship Knowledge and Attitudes of Frontline Health Workers (Clinical Officers, Nurses and Midwives, Community Pharmacists and Community Health Extension Workers) in Wakiso District, Uganda

*Authors: Olvia Bahemuka, DNP, MSN, RN-BC & Laura Gray, PhD, RN*

Antimicrobial resistance could cause as many as 10 million deaths per year by 2050 if left unchecked. This is a crisis recognized in every country of the world, but perhaps most critical in countries with limited resources, such as Uganda. In Uganda, resistance to antimicrobials such as penicillins, tetracyclines and cotrimazoles were reported near 80% in 2015. In response to the World Health Organization’s call for countries to develop a strategy to address antimicrobial resistance (AMR), Uganda has developed a National Action Plan (GoU AMR-NAP, 2017). However, like other sub-Saharan countries, Uganda has a shortage of well-trained healthcare workforce, limited access to care, inadequate laboratory and AMR surveillance capabilities. For most Ugandans who get sick, the first point of care is their local health center and or pharmacy; yet thus far, Ugandan antimicrobial stewardship efforts have focused on physicians and some hospitals. Hence there is an urgent need to educate frontline providers such as clinical officers, nurses and midwives, community pharmacists and community health extension workers (CHEWs). This best practice project aims to assess the antimicrobial stewardship knowledge and attitude of the frontline health workers including clinical officers, nurses and midwives, community pharmacists and CHEWs at 6 community health centers and 6 community pharmacies in Wakiso District, Uganda.

Questions? Email pharmacyce@belmont.edu or call 615-460-5730.
Refund Policy: If you need to cancel your registration, please notify us as soon as possible. No refunds for cancellations on or after January 22, 2020. Cancellations prior to January 22, 2020, will receive a refund minus a $50 processing fee.

Cancellation Policy: In the rare event the event is cancelled, registrants will receive a full refund.

Commercial Support Provided By:
Allergan Pharmaceuticals, Asolva, BioFire Diagnostics, Cepheid, DoseMe, Luminex, MDstewardship, Merck & Co., Inc., Option Care Health, and T2 Biosystems

Requirements for Successful Completion of the CE Activity and Awarding of Credit

Pharmacy Attendees: NABP e-profile ID: Your CE credits will be automatically submitted to NABP CPE Monitor upon completion of the online activity evaluation. Pharmacists with questions regarding their NABP e-Profile or CPE Monitor should call 1-847-391-4406 or refer to the FAQ section on the NABP website: www.nabp.net/programs/cpe-monitor/cpe-monitor-service. To receive credit for your participation, you must include your NABP ePID and Month/Day of birth when completing your evaluations online after the event. If incorrect information is provided, Belmont University will attempt to contact you to obtain the correct information.

It is the responsibility of the participant to notify Belmont University of their corrected information. Otherwise, the complete CE will not be accepted by CPE Monitor.

Belmont University is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. These knowledge-based programs for pharmacists will provide up to 5.75 contact hours (0.575 CEUs) of live continuing education credit to pharmacists who attend and complete the activity evaluation for each session attended.

Nurse Attendees: Belmont University School of Nursing is an approved provider of continuing nursing education by the Tennessee Nurses Association, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation. This educational activity will provide up to 5.75 hours to nurses who attend full sessions and complete an online evaluation form for each session attended.

Physician Attendees: Application for CME credit has been filed with the American Academy of Family Physicians. Determination of credit is pending

Questions? Email pharmacyce@belmont.edu or call 615-460-5730.