Top Stories

PCORI Grant
Congratulations to Joshua Ross, MD for getting a Patient Centered Outcomes Research Institute grant funded! The grant funds a study to use medical records to help clinicians identify, evaluate, and report suspected child abuse through a tailored clinical decision support package. The study is a collaboration between folks in multiple hospitals across the country, with David Feldstein, MD, Barbara Knox, MD and Josh as the investigators at the UW.

Baldwin Seed Grant
Congratulations to Michael Kim, MD for receiving support from the Ira and Ineva Reilly Baldwin Wisconsin Idea Endowment! He is the faculty advisor for three undergraduate students, Maya Charan, Kenton Woo, and Sara Busche, who applied for this seed grant proposal. They aim to bridge the opportunity gap by promoting a sense of self-efficacy and increasing hands-on healthcare skills among underrepresented students. The grant is a collaboration with Krystle Campbell from the UW Health Clinical Simulation Program, and the PEOPLE Program.

ICTR D&I Grant
Congratulations to Jeff Pothof, MD for getting an ICTR Dissemination & Implementation grant funded! The goal of this project is to test the feasibility of integrating the Human Factors Analysis and Classification System and Human Factors Intervention Matrix methodologies into UW-Health’s Root Cause Analysis program. The study is led by Douglas Wiegmann, PhD, from the UW College of Engineering.

16th Annual Medical Student Research Forum
This student research forum showcased the research accomplishments of our 2017 Emergency Medicine Shapiro students.

Hunter Lau: “A Qualitative Evaluation of Community Paramedic Care Transitions Intervention Coach Training.”
-Hunter also presented his poster earlier this year at the National Association of EMS Physicians annual meeting.

John Harringa: “Diagnostic Accuracy of MRI and US for Evaluation of Female Pelvic Pathology.”

Matthew Hughes: “Identifying Factors Impacting Time to MRI for Emergency Department Patients.”

Alex Trinh: “Clinical Utility of Hendrich II Scores in Predicting Outpatient Falls.”

Abstracts are posted at http://med.wisc.edu/student-research
Rebecca Green, research enroller, led a team of health professionals at the WI Area Health Education Center (AHEC) competition where they presented their proposal to address major health issues in a fictional community. They finished in fourth place, missing third by just one point in what was the closest competition the judges had ever seen. Great work Rebecca!

Kudos

2018 IP Case Competition – Wisconsin AHEC

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EM Antibiotic Stewardship Top 10 Lists

Michael Pulia, MD, MS and Bobby Redwood, MD Co-Chair the WI Department of Health Services Antibiotic Steering Committee-EM Subgroup. They just finalized two Top 10 Stewardship for EM Lists (attached to the end of this newsletter). The lists will be disseminated by a regional QI group as a high yield stewardship reference, which could be hung up in EDs. These evidence based reads will be incredibly helpful in advancing antibiotic stewardship efforts!

Recent Publications

Manuscripts:


Missing in Action Recovery & Identification Project

Congratulations to Ryan Wubben, MD who was involved with an exciting find for UW-Madison’s MIA project team, facilitated by the UW Biotechnology Center and the military. The project's primary goal is to identify new tactics and technologies to enhance the recovery and identification process and apply these technologies with the development of new protocols. The team has focused on the recovery and identification of World War II US Forces in Europe. In 2016-2017, the team led the successful discovery of 1st LT Frank Fazekas, who was shot down over the village of Buysscheure, France.

Dr. Wubben poses with propeller blade
Upcoming Deadlines and Events

VIP Grand Rounds (topics TBD)
February 1, 2018 – Gillian Schmitz, MD
February 15, 2018 – Stephen Nakada, MD
February 22, 2018 – Trish Henwood, MD

Journal Club
Tuesday, March 6, 2018 – 6:00p.m.-9:00p.m.
Manish Shah, MD, MPH

Match Day 2018
Friday, March 16, 2018

National Conferences
AAEM – April 7-11, 2018
San Diego, CA

26th Annual Wisconsin Emergency Medicine Research Forum (Research Day 2018)
Co-sponsored by UW Madison DEM, Medical College of Wisconsin DEM and WACEP
March 15, 2018
The Edgewater Hotel

Grant Writing Workshop: Write Winning Grants!
Sponsored by the Department of Medicine (DOM) Research Committee
Thursday, May 3, 2018 – 8:30a.m.-4:30p.m.
HSLC room 1306
$250 fee (for non-DOM faculty/staff)

Protocols Recently Approved by the EMRC

Jacob Clark, MD and Michael Steuerwald, MD: “Preliminary Investigation of a Device to Clean the Camera of a Video Laryngoscope in a Soiled Simulated Airway”

Erin McCreary, PharmD: “Views of Social Media for Educational Use in Healthcare”

Katherine Bakewell, MD, Diana Vu, MD, Danielle Babb, MS, Nicholas Kuehnel, MD and Michael Kim, MD: “Implementation of Nitrous Oxide Program in a Pediatric Emergency Department”

James Svenson, MD, MS: “Interpretation and Use of B-type Natriuretic Peptide in the Emergency Department”

Studies Currently Enrolling in the ED

Paramedic-Coached ED Care Transitions to Help Older Adults Maintain their Health
The purpose of this study is to test the overall hypothesis that a community-based, paramedic-coordinated ED-to-home Care Transition Intervention will improve community-dwelling older adults’ post-ED health outcomes and reduce cost. This study will include older adults discharged home from the ED, as well as their caregiver. For questions, see Dr. Manish Shah.
Clinical Evaluation of the Omron Wheeze Detector Prototype and Algorithm among Children
The purpose of this study is to evaluate a new device that may be able to identify children from age 3 months to 13 years who may be wheezing. Participating patients will have their lung sounds recorded and then analyzed by this device and two physicians. For questions, see Dr. Michael Kim.

Academic Effects of Concussion in the High School Athlete
The purpose of this study is to examine the scope of adverse academic effects post-concussion in high school students (14-18 years of age). Students are eligible if they have had an injury caused by a direct blow to the head, face or neck in which an impulsive force was transmitted to the head in the last 7 days. For questions, see Dr. Traci Snedden or Dr. Margaret Brooks.

New Faces

Frank Austin
Senior Accountant – Frank is coming to us from Research and Sponsored Programs where he worked for six years and served as Lead Accountant. He has extensive experience with research awards & campus finance systems. He will be working with Marty & Leah primarily on Academic and Post-Award Research Tasks. Frank grew up in DeForest, WI and has a 5-year-old daughter, Hailey and 2-year-old son, Michael.
His email is: faustin@medicine.wisc.edu

Mikayla Ehlert
Research Student Assistant – Mikayla is a sophomore at UW-Madison, where she is pursuing a path towards medical school. She will be working with Dr. Shah and the R01 research team. Mikayla grew up in Burlington, WI. She enjoys dancing, playing softball and has been an EMT.
Her email is: mehlert2@wisc.edu

Gabriel Zayas-Cabán, PhD
Assistant Professor (Affiliate Appointment) – Gabriel is in the Department of Industrial and Systems Engineering. His research interests are in the area of stochastic modeling and optimization, with an emphasis on control, queueing, and scheduling. His research focuses on how to leverage concepts from these areas to identify effective and practical policies for resource allocation in healthcare settings, with a focus on emergency departments. Gabriel’s recent research is on assessing the impact of ED treatment decisions on patient outcomes. Gabriel received his PhD from Cornell University and before coming to Madison, he was a postdoctoral research fellow at the University of Michigan.
His email is: zayascaban@wisc.edu
## Funded Research Studies

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<tr>
<td>Improving Antibiotic Stewardship During the Treatment of Skin &amp; Soft Tissue Infections in the ED</td>
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<td>Identifying Barriers and Facilitators to the Implementation of Radiation-Free Imaging Protocols in the ED</td>
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<td>Teamwork &amp; Care Transitions in Pediatric Trauma: Implications for HIT Design</td>
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<td>Paramedic-Coached ED Care Transitions</td>
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<td>Disseminating Child Abuse Clinical Decision Support to Improve Detection, Evaluation and Reporting</td>
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Please send newsletter ideas and suggestions to Sharon West: slwest@medicine.wisc.edu
Top 10 Ways for Emergency Physicians to Improve Antibiotic Choices

1. **Post-prescription culture review (antibiotic time out)**
   Ensuring that antibiotic coverage is sufficient limits adverse outcomes related to treatment failure, while narrowing coverage based on culture results enhances stewardship and reduce adverse medication reactions. We recommend utilizing non-physician staff for all aspects except antibiotic selection decisions.

2. **Antibiotic order sets and clinical decision support systems**
   Successfully institutions have implemented strategies either written or computerized (e.g., physician order entry) to streamline the selection of empirical antibiotics in the Emergency Department (ED). Systems should be tailored to the data obtained during patient evaluation (e.g., risk factors, comorbidities).

3. **A multidisciplinary, antibiotic usage, and quality improvement process**
   Utilize your organization’s experts - Pharmacists and infection disease specialists can provide invaluable feedback and guidance on the optimal use and appropriate dosing of antibiotics in the ED.

4. **An antibiotic stewardship champion**
   An ED Antibiotic Stewardship Champion can coordinate continuing education on antibiotic resistance or stewardship topics to empower individual clinicians to use evidence-based guidelines rather than prescribe under pressure.

5. **An ED-specific antibiogram**
   If your ED has sufficient volume, ED-based antibiograms can provide ED physicians with a comprehensive resource for clinical decision-making. This especially true with the development of more rapid molecular based testing for drug resistance.

6. **Consider cultures when initiating antibiotic therapy**
   While the results of cultures obtained from blood, urine and other potential infection sites are unlikely to return in the course of an ED stay, they play an important part in confirming infection and assuring that the causative microorganism is susceptible to the empiric antibiotic regimen initiated in the ED. The primary provider can utilize the results to determine if a change in agent, dose, or duration is necessary.

7. **Think twice before prescribing a macrolide for lower respiratory tract infection**
   Macrolide (azithromycin) resistance in Midwest is around 50 percent. Consider a single agent regimen like doxycycline 100 mg BID x five days.

8. **Think twice before prescribing ciprofloxacin**
   Fluoroquinolones are a major driver of *Clostridium difficile* outbreaks. They are less useful than ever with *E. Coli* resistance to ciprofloxacin averaging eighty-two percent in the Midwest. Detrimental side effects include tendinopathies, neuropathies and QT prolongation.

9. **Avoid combination therapy for ventilator-assisted pneumonia**
   The use of two antibiotics against gram-negative infections is not routinely required, especially if empiric therapy involves an antipseudomonal penicillin, cephalosporin or carbapenems.

10. **Use penicillin for dental infections**
    Penicillin is the first choice for treating uncomplicated early ondontogenic infections. Coverage of anaerobes in these infections is only indicated with longer standing moderate to severe dental infections with adjacent space involvement.
References


Top 10 Ways for Emergency Physicians to Avoid Prescribing Unnecessary Antibiotics

1. Beware urinary tract infection (UTI) myths
   Forty percent of antibiotics given in hospital settings are avoidable. Odor, bacteriuria, nitrates, leukocyte esterase and pyuria cannot diagnose UTI without clinical signs/symptoms.

2. Use the modified Centor Score for pharyngitis
   One point is assigned for each of the following criteria:
   - fever,
   - absence of cough,
   - tonsillar exudates and
   - swollen and or tender anterior cervical nodes
   Current guidelines recommend no rapid testing and withholding antibiotics for scores of one or less and treating only positive rapid test results for scores of two or greater.

3. Treat sinusitis as viral unless strict criteria are met
   Criteria includes:
   - Sinusitis symptoms must be present for 10 days or more without any evidence of clinical improvement OR
   - Patient has severe symptoms or signs of high fever (≥39°C [102°F]) and purulent nasal discharge or facial pain lasting for at least three-to-four consecutive days OR
   - Worsening symptoms or signs characterized by the new onset of fever, headache or increase in nasal discharge following a typical viral upper respiratory infection.
   If criteria is met, first-line therapy should be a 10-day course of amoxicillin.

4. Avoid screening for asymptomatic bacteriuria
   Asymptomatic bacteriuria is common. It is present in up to five percent healthy premenopausal women, twenty-two percent community dwelling elder women, as well as fifty percent and thirty-five percent of institutionalized women and men respectively. Urinalysis for infection should only be sent in patients with urinary symptoms.

5. Think twice about “UTIs” in patients with altered mental status
   Implement a “wait and see” approach to non-specific symptoms of weakness, falls, fatigue and/or delirium in elders, long term care residents and patients with cognitive impairment before starting antibiotic for UTI.

6. Consider not prescribing antibiotics for uncomplicated abscesses
   Several studies conducted in the Emergency Department (ED) support withholding antibiotics after incision and drainage of uncomplicated abscesses, even in cases of suspected Methicillin-Resistant Staphylococcus aureus (MRSA). One large Randomized Controlled Trial (RCT) supports Trimethoprim/sulfamethoxazole (TMP/SMX) use in abscesses.

7. Avoid double coverage for community-acquired cellulitis
   TMP/SMX retains nearly 100 percent effectiveness for community-acquired MRSA (CA-MRSA). Wisconsin clindamycin resistance rates are approaching 30 percent. No need to double cover uncomplicated cellulitis - Single agent cephalexin is sufficient.

8. Consider watch and wait prescriptions with acute otitis media
   Most otitis media is viral and delaying treatment is usually associated with resolution of clinical signs and symptoms. Only 40 percent of watch and wait prescriptions are filled.

9. Use procalcitonin to help guide decisions in Chronic obstructive pulmonary disease (COPD)
   The Food and Drug Administration (FDA) approved procalcitonin in 2017 to guide antibiotic initiation in lower respiratory tract infection (LRTI).

10. Avoid antibiotics for routine dentalgia
    Reversible pulpitis, periodontitis and mechanical endodontic conditions present as tooth pain, but do not require antibiotics. Nonsteroidal anti-inflammatory drugs (NSAIDs) and nerve blocks are recommended therapy. Antibiotics are appropriate if there is an adjacent space infection, trismus or odynophagia.
References


