Emergency Medicine Research News
August 2018

Conducting innovative clinical and translational emergency care research to advance the health of the people of Wisconsin and beyond.

Top Stories

Graduation Award Winners

A huge congratulations to our research team members who were recognized as award winners at the BerbeeWalsh Department of Emergency Medicine Graduation.

Michael Repplinger, MD, PhD
EM Faculty Award for Excellence in Scholarship

Rebecca Green
Emergency Department Research Enroller Award

MR vs CT for Appendicitis Study Highlighted in AuntMinnie

AuntMinnie.com, an online forum that features the latest news and information about medical imaging, published an article about Dr. Michael Repplinger’s MR vs CT for appendicitis study. The forum’s homepage highlighted the article, “MRI matches CT for appendicitis -- and without radiation”. The article supports that when used to diagnose and confirm cases of acute appendicitis in the ED, MRI can provide the same efficacy as CT without the risk of radiation exposure for patients. Congratulations Mike!

<table>
<thead>
<tr>
<th>CT vs. MRI for acute appendicitis, by confidence level</th>
<th>CT</th>
<th>MRI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence of 3 or higher</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>98.4%</td>
<td>96.9%</td>
<td>0.561**</td>
</tr>
<tr>
<td>Specificity</td>
<td>93.3%</td>
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<td>0.166**</td>
</tr>
<tr>
<td>Positive predictive value</td>
<td>87.5%</td>
<td>81.6%</td>
<td>0.152**</td>
</tr>
<tr>
<td>Negative predictive value</td>
<td>99.2%</td>
<td>98.4%</td>
<td>0.541**</td>
</tr>
<tr>
<td>Confidence of 4 or higher</td>
<td></td>
<td></td>
<td></td>
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*Statistically significant.
**Not statistically significant.
NEJM Study Sparks Debate of Procalcitonin Testing

Kudos to Michael Pulia, MD, MS for being featured in an interview with 360Dx, an online news platform, regarding his take on the use of procalcitonin testing for lower respiratory tract infections. Dr. Pulia, director of our emergency medicine antibiotic stewardship program, advises clinicians to use the test to reduce diagnostic uncertainty, and that the conclusion of the recent NEJM study (ProACT) published in May 2018 is not congruent with many years of institutional experience using PCT as an antimicrobial stewardship tool. The NEJM study concluded that procalcitonin testing did not reduce antibiotic use. Dr. Pulia explains that “the value of procalcitonin as a marker of infections becomes apparent when a physician struggles to decide whether a patient needs an antibiotic, but that scenario is specific to clinical conditions and circumstances, and the ProACT study mixes conditions for which procalcitonin has little value in prescribing with other conditions where it has tremendous value.”

Upcoming Events

VIP Grand Rounds (topics TBD)
August 9, 2018 - Pierre Borczuk, MD
August 16, 2018 - Terry Fairbanks, MD

Journal Club (Critical Care)
Tuesday, August 21, 2018 - 5:30p.m.-7:30p.m.
Marin Darsie, MD
Joshua Glazer, MD
Michael Pulia, MD, MS

Emergency Medicine Summer Picnic
Thursday, August 16, 2018 - 5:30pm-8:30pm
Westmorland Park, 4114 Tokay Boulevard

EPIC UGM Conference
August 27 - 30, 2018
Verona, WI

Recent Publications

Manuscripts:

Bessey LJ, Radue RM, Chapman EN, Boyle LL, Shah MN. Behavioral Health Needs of Older Adults in the Emergency Department. Clinics in Geriatric
Protocols Recently Approved by the EMRC

Joshua Glazer, MD: “PReDiCT (Project from Michigan)"
Michael Ward, MD: "Analyzing recognition, management, and outcomes of severe sepsis and septic shock in the emergency department"
Aaron Kraut, MD, and Lauren Sheehy, MD: "Evaluating the Effect of Resident Physicians in a Supervisory Role on Clinical Efficiency and Quality of Care"
Manish Shah, MD, MPH, and Michael Kim, MD: "Omron Clinical Evaluation of the Omron Wheeze Detector Engineering Sample and Algorithm Validation"
Manish Shah, MD, MPH, and Michael Pulia, MD, MS: "Roche vivoDx MRSA Clinical Performance Study Protocol"
Sara Damewood, MD, and Nikolai Schnittke, MD, PhD: "Sonographic Cardiopulmonary Features of Early Sepsis"

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.

**Screening in Trauma for Opioid Misuse Prevention (STOMP)**
The purpose of this research is to develop and implement streamlined guidelines for opioid prescribing in trauma care. The study team will be conducting surveys in order to identify risk factors that may be useful in determining whether a patient is at risk for developing an opioid use disorder because of their use of opioid medications for pain management after an injury. Patients are eligible for this study if they are between the ages of 18 and 75, are in the Emergency Department because of an injury, and are expected to receive opioid prescription upon discharge. For questions, see Dr. Randy Brown.

**Cobas® vivoDx MRSA Clinical Performance Study Protocol**
The purpose of this study is to evaluate the performance of a new Roche investigational test that is designed to detect live MRSA in nasal samples collected from the nose in less than six hours. We will swab participants’ noses two times in each nostril and then the samples will be brought to the lab for analysis. For questions see Dr. Manish Shah or Dr. Mike Pulia.

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### New Faces

**Srikar Adibhatla**
Research Enroller - Srikar will be working with our ED Enroller Team and will report to Becky Schwei. Srikar graduated with a Bachelor’s in Pharmacology & Toxicology from UW-Madison and comes to DEM with a strong research background having most recently worked at the NIH lab of Dr. Carole Bewley. In his free time, Srikar is a tennis coach for James Madison Memorial High School and is currently learning how to flip broken bicycles.

His email is: sadibhat@medicine.wisc.edu

**Jenna Hatab**
Shapiro Student - Jenna is a 2nd year medical student at UWSMPH working with DEM as a Shapiro student this summer. Her Shapiro research project is focused on increasing nitrous oxide use and improving patient experiences with minor procedures in the pediatric emergency department, working with Dr. Kuehnel. She is originally from Milwaukee, WI and obtained a B.S. at UW-Madison in 2016 in Biology with a certificate in Global Health. Outside of school and research, she enjoys traveling, hiking and reading.
Nicholas Genthe
Shapiro Student - Nicholas is a medical student who will be spending the summer studying community paramedicine and prehospital medicine with Dr. Mancera. He grew up in Black Earth, WI, before completing his undergraduate degree at the University of Wisconsin-Madison in Biochemistry. In his free time, he enjoys outdoor activities and spending time in nature.

His email is: ngenthe@wisc.edu

Aaron Beck
Shapiro Student - Aaron is a medical student in the MD-MPH program who grew up in a small town, south of Green Bay, called Maribel, WI. After graduating from Skidmore College in 2014 with a Bachelor’s degree in Neuroscience, he spent two years as a scribe in an emergency department in Chicago and Green Bay. In his free time, he enjoys playing men’s league hockey, golfing, spending time with friends, and doing anything outside. His faculty mentor is Dr. Shah and he is working on the project “Identifying the needs of primary care physicians to support community-dwelling patients with Alzheimer’s disease in a new model of community paramedicine.”

His email is: abeck6@wisc.edu

Steven Hesse
Shapiro Student - Steven is a born and raised Wisconsinite from North Prairie, WI. He graduated from UW-Madison with a bachelor’s of science in Pharmacology & Toxicology and a certificate in Global Health in 2014. He deferred the start of medical school in order to complete his Master’s in Public Health, and he completed his thesis, “Impact of Non-Indicated Antibiotic Prescribing for Respiratory Conditions on Patient Satisfaction”, with Dr. Pulia. In his free time, he enjoys playing Ultimate Frisbee, training for marathons and triathlons, and watching The Office. He will continue working with Dr. Pulia this summer.

His email is: sphesse@wisc.edu

Sarah Saenz
Shapiro Student - Sarah grew up in Kenosha, WI and attended the University of Wisconsin-Madison for her bachelor's degree in Biology. She graduated in 2015, and then went to the University of Michigan-Ann Arbor for her master's degree in Physiology during the 2015-2016 school year. For her gap year, she taught Pre-K in Kenosha, WI and returned to Madison for medical school. Sarah is working with Dr. Svenson on the use of BNP in the ED this summer.

Her email is: ssaenz@wisc.edu
# Funded Research Studies

<table>
<thead>
<tr>
<th>Title</th>
<th>Investigators</th>
<th>Source</th>
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<tbody>
<tr>
<td>Medical Education and Discovery Course: Increasing Self-Efficacy among Underrepresented Students</td>
<td>M. Kim</td>
<td>Ira and Ineva Reilly Baldwin Wisconsin Idea Endowment</td>
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<tr>
<td>Health IT process for VTE</td>
<td>B. Patterson (Co-I)</td>
<td>AHRQ R01</td>
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<tr>
<td>Preventing Future Falls among Older Adults</td>
<td>B. Patterson (PI)</td>
<td>AHRQ K08</td>
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<td>Testing Novel Methods for Analyzing and Correcting Root Causes of Patient Harm</td>
<td>J. Pothof (Co-I)</td>
<td>ICTR D1</td>
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<tr>
<td>Improving Antibiotic Stewardship for Long Term Care Facility Residents in the ED</td>
<td>M. Pulia (PI)</td>
<td>Wisconsin Partnership Program</td>
</tr>
<tr>
<td>Improving Antibiotic Stewardship During the Treatment of Skin &amp; Soft Tissue Infections in the ED</td>
<td>M. Pulia (PI)</td>
<td>AHRQ K08</td>
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<tr>
<td>Identifying Barriers and Facilitators to the Implementation of Radiation-Free Imaging Protocols in the ED</td>
<td>M. Replinger (PI)</td>
<td>NIH K08 and Emergency Medicine Foundation</td>
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<tr>
<td>Teamwork &amp; Care Transitions in Pediatric Trauma: Implications for HIT Design</td>
<td>J. Ross (Co-I)</td>
<td>AHRQ R01</td>
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<td>Disseminating Child Abuse Clinical Decision Support to Improve Detection, Evaluation and Reporting</td>
<td>J. Ross (Co-I)</td>
<td>PCORI</td>
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<td>Paramedic-Coached ED Care Transitions</td>
<td>M. Shah (PI)</td>
<td>NIH/NA R01</td>
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<tr>
<td>Mentoring and Research in Geriatric Emergency Care</td>
<td>M. Shah (PI)</td>
<td>NIH K24</td>
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<tr>
<td>Interdisciplinary Trauma Simulation Program</td>
<td>R. Thompson (Co-I)</td>
<td>UW Foundation</td>
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**BerbeeWalsh Department of Emergency Medicine**  
**UNIVERSITY OF WISCONSIN**  
**SCHOOL OF MEDICINE AND PUBLIC HEALTH**

For more news, please visit our website

Please send newsletter ideas and suggestions to Sharon West:
slwest@medicine.wisc.edu