New Perspectives on Pulmonary Embolism Management
An interview with Dr. Joey Bledsoe – by Alison Smith, MD, MPH

Joseph Bledsoe, MD, FACEP is a Clinical Assistant Professor of Emergency Medicine at Stanford School of Medicine and Director of Research Emergency Medicine and Trauma Services at Intermountain Medical Center in Murray. He is also a fellow for the Intermountain Institute for Healthcare Delivery Research Care Transformations Center. Dr. Bledsoe published a study in Chest Journal in August 2018 entitled Management of Low-Risk Pulmonary Embolism Patients Without Hospitalization: The Low-Risk Pulmonary Embolism Prospective Management Study. You can find links to the abstract, podcast, and ABC4 news segments on the study below, or contact Dr. Bledsoe (information below) for the full text article.
Dr. Bledsoe was gracious enough to provide us with an interview to answer some key questions for UCEP members about this impressive achievement and potentially practice-changing study.

**Smith:** Dr. Bledsoe, congratulations on completing and publishing this notable study! Can you please tell fellow UCEP members what the study is about?

**Bledsoe:** The aim of the study is to determine if patients in the U.S. are safe for outpatient management after being diagnosed with an acute PE. In Europe, outpatient management of acute PE has become common, however, in the U.S., this practice has not been widely adopted. The LoPE study is the largest pragmatic study of outpatient management of acute low-risk PE in the ED in the U.S. to date. We enrolled 200 patients diagnosed with PE in the Intermountain Medical Center, Riverton Hospital, Alta View hospital, LDS hospital, and McKay Dee hospital emergency departments from January 2013 to October 2016. Patients with a PE Severity Index < 86 were enrolled in the study and spent a minimum of 12 hours to a maximum of 24 hours in the ED or hospital, where they had a lower extremity ultrasound to evaluate for DVT proximal to the popliteal and an ECHO to evaluate for right heart strain. If none of those factors were present, patients were discharged to home on an FDA-approved oral anticoagulant. We followed patients for 90 days to evaluate for recurrent PE or DVT, major bleeding event, or death. Only one patient had a bleeding event requiring transfusion. There were no recurrent VTE events or deaths in the study. We concluded that patients with low-risk PE by the PE Severity index with appropriate risk stratification can be safely sent home without full inpatient hospitalization.

**Smith:** What were you surprised to learn from the study?

**Bledsoe:** Patients were happy to go home. In fact, of patients surveyed, 89 percent stated they would choose outpatient treatment again if they were to have another PE diagnosis. On a scale of 0-10, patients on average rated their satisfaction with the observation portion of the study 9.54, and happiness with the decision for outpatient treatment was 8.9. This was surprising to me because 61% of patients spent their minimum 12 hours observation entirely in an ED bed, and I wouldn’t have thought that patients would still be happy after spending that long in the ED.
**Smith:** How has this protocol impacted clinical care at the involved hospitals?

**Bledsoe:** Based on the results of this study and analysis of the evidence base surrounding outpatient treatment for low-risk PE, we have created a care process model that recommends outpatient treatment for these patients with low-risk pulmonary embolism. Since the completion of the study nearly 100 patients have been treated under this new process. We learned in this study that the observation period only changed the course of care for one patient and have since eliminated it from our current care process model. In addition, the echocardiogram is only recommended in patients that have an RV:LV ratio of greater than 0.9 on the CTPA, eliminating the need for many of the echocardiograms performed. Lastly the compression ultrasound is only recommended in patients with symptoms of DVT. I think these changes to the protocol have maintained patient safety while decreasing the burden on the ED for completing these diagnostic evaluations.

**Smith:** What is the future of PE and DVT care in Utah?

**Bledsoe:** Utah is leading the way in PE research and care provided to patients. We already have an extremely high rate of outpatient treatment for acute DVT compared to many parts of the country. As outpatient treatment for PE becomes more routine, I believe we will be a leader in this area as well. The completion of this study at five Utah hospitals has already put us on the map as a state that is leading the change to more cost-effective care while maintaining patient safety, all the while maintaining or improving patient satisfaction with the care received. We can all feel proud to be practicing in a state known for innovative and progressive care.

**Smith:** Last but certainly not least, can you please tell us how you became interested in researching this particular topic and what drove you to do the study?

**Bledsoe:** I started my career in 2005 as an internal medicine resident. I rounded on young, healthy patients with acute PE that were admitted to the hospital and were just waiting for their INR to become therapeutic. They were not thrilled to be in the hospital and it seemed like a waste of resources—both their personal resources and the hospital’s. As an intern I was able to convince my attending to let several patients go home early if I did their outpatient follow up. The patients all did fine and were very grateful to be able to go home to spend time with their families, go back to work, and sleep in their own beds. I began to think about a way to study this and prove that hospitalization was not necessary for all patients with acute PE. Several years after this
experience and after transitioning into emergency medicine, an article came out in the Lancet describing the PE severity index as a tool to risk-stratify patients in order to safely send them home within 24 hours of their PE diagnosis. This study was performed primarily in Europe, but did include a limited number of patients from the University of Pittsburgh. This re-invigorated my desire to do the study. After developing an observation process for rapid risk stratification and discharge within 24 hours at the University of Utah during my residency and fellowship, I finally had the pilot data to proceed with a larger prospective study. What ultimately drove me to do the study was the desire to provide PE treatment tailored to the individual patient based on their risk factors and social preferences, and to allow patients to be safely treated in a location that they prefer. This desire continues to drive me to work on improving this process at my hospital and those around the state and even the nation today and moving forward.

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Tribute to Dr. David Cole
By Dr. Ben Buchanan

Memorial for David Frederic Cole on October 27, 2018

Dr. David Frederick Cole passed away from an aggressive brain tumor last month at far too young an age, but he will not be forgotten. I had the honor of attending his memorial service on October 27, 2018. The experience was both touching and emotional. I felt a very close professional and personal connection to Dave when we first met at an EMS Medical Directors’ meeting in the early 2000’s. I encouraged him to become involved with Utah ACEP and the UMA. He eventually became UMA president, and I was honored to be invited to sit at his table at the UMA gala that year to celebrate his leadership.
At the memorial I met Dave’s three sisters and was able to reconnect with his two children, Jacob and Kyle. Dave had many interests, including loving to fly airplanes and traveling the world. He kept in touch with friends from grade school, high school, medical school, and residency, as these relationships were very important to him.

At the memorial service, Link Hebrew praised Dave’s skills and recounted several pranks they had played on one another over the years. Dr. Keddington, another of Dave’s work colleagues, stated that even though he was 15 years older, he frequently viewed Dr. Cole as his mentor.

On behalf of Utah ACEP and the UMA, I expressed appreciation for his outstanding service to the field of emergency medicine.

Dave spent his final days in Seattle with one of his sisters. Though he is no longer physically with us, his legacy will live on in our hearts and our practice.

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**Utah Emergency Medicine Ladies’ Night**  
**By Kara Sawyer, MD, PGY-3**  
**University of Utah Emergency Medicine Residency Program**

This year, for the first time in the history of the University of Utah Emergency Medicine Residency Program, all three Chief Resident positions are filled by females. The number of women entering the specialty of Emergency Medicine is increasing every year, however, there are still far fewer of us in the field when compared to our male counterparts, especially within leadership positions. Therefore, in addition to other areas of focus as chief residents, we have put a special emphasis on fostering female leadership. Every year, one of the female faculty members at the University of Utah has hosted all the female residents for a Ladies’ Night. This year, in our effort to focus on developing female leadership within our own program, we are working to expand our Ladies’ Night to three times a year, and to include as many female Emergency Medicine physicians practicing within the Salt Lake Valley as possible. Our fall Ladies’ Night, held in October, was well attended by residents, faculty, and prior graduates.

We are planning a winter event on Tuesday, February 27th that will consist of a hike followed by a potluck dinner. It is our hope that these events will continue to foster strong
relationships between female residents and the many amazing female role models and mentors that are currently practicing within the Salt Lake Valley. If you are interested in attending one of our upcoming Emergency Medicine Ladies’ Nights, please email the University of Utah Emergency Medicine Chief email.

NEWS FROM ACEP

New ACEP Information Papers and Resources

The following information papers and resources were recently reviewed by the Board of Directors:

Information Papers:

- Advocating for a Minimum Benefit Standard Linked to the 80th Percentile of a FAIR Health-Type Usual & Customary Charge Database
- Emergency Ultrasound Standard Reporting Guidelines
- Medicaid ED Copayments: Effects on Access to Emergency Care and the Practice of Medicine

Other Resources:

- Smart Phrases for Discharge Summaries
  - CT Scans for Minor Head Injuries
  - MRI for Low Back Pain
  - Sexually Transmitted Infection
  - Why Narcotics Were Not Prescribed
Articles of Interest in *Annals of Emergency Medicine* - Fall 2018

Sam Shahid, MBBS, MPH  
Practice Management Manager, ACEP

ACEP would like to provide you with very brief synopses of the latest articles in *Annals of Emergency Medicine*. Some of these have not appeared in print. These synopses are not meant to be thorough analyses of the articles, simply brief introductions. Before incorporating into your practice, you should read the entire articles and interpret them for your specific patient population.

Anderson TS, Thombley R, Dudley RA, Lin GA. *Trends in Hospitalization, Readmission and Diagnostic Testing of Patients Presenting to the Emergency Department with Syncope*

The objective of this retrospective population epidemiology study was to determine whether recent guidelines emphasizing limiting hospitalization and advanced diagnostic testing to high-risk patients have changed patterns of syncope care. They used the National Emergency Department Sample from 2006-2014 and the State Inpatient Databases and Emergency Department Databases from 2009 and 2013. The primary outcomes studied were annual incidence rates of syncope ED visits and subsequent hospitalizations, and rates of hospitalization, observation, 30-day revisits, and diagnostic testing comparing 2009 to 2013. Their results showed that although the incidence of ED visits for syncope has increased, hospitalization rates have declined without an adverse effect on ED revisits and that the use of advanced cardiac testing and neuroimaging has increased, driven by growth in testing of patients receiving observation and inpatient care.


The purpose of this retrospective review was to describe overall EMS utilization for patients on involuntary holds, compare patients placed on involuntary holds to all EMS patients, and evaluate the safety of field medical clearance of an established field-screening protocol in Alameda County, California, using the data for all EMS encounters between November 1st, 2011-2016 using County’s standardized dataset. Results
showed that 10% of all EMS encounters were for patients on involuntary psychiatric holds and overall, only 0.3% of these encounters required re-transport to a medical ED within 12 hours of arrival to Psychiatric Emergency Services, reinforcing the importance of the effects of mental illness on EMS utilization. **Full text available here.**

Yoshida H, Rutman LE, Chen J, Shaffer ML, Migita RT, Enriquez BK, Woodward GA, Mazor SS. *Waterfalls and Handoffs – A Novel Physician Staffing Model to Decrease Handoffs in a Pediatric Emergency Department*

The objective of this retrospective quality improvement study was to evaluate a novel attending staffing model in an academic pediatric ED that was designed to decrease patient handoffs. The study evaluated the percentage of intradepartmental handoffs before and after implementation of a new novel attending staffing model and included conducting surveys about the perceived impacts of the change. The study analyzed 43,835 patients encounters and found that immediately following implementation of the new model, there was a 25% reduction in the proportion of encounters with patient handoffs. The authors concluded that this new ED physician staffing model with overlapping shifts decreased the proportion of patient handoffs and resulted in improved perceptions of patient safety, ED flow, and job satisfaction in the doctors and charge nurses. **Full text available here.**


This study sought to determine the association between PRBC age and mortality among trauma patients requiring massive PRBC transfusion using the data from the Pragmatic, Randomized Optimal Platelet and Plasma Ratios (PROPPR) trial. The authors analyzed data from 678 patients and the primary outcome was 24-hour mortality. The results showed that increasing quantities of older PRBCs are associated with increased likelihood of 24-hour mortality in trauma patients receiving massive PRBC transfusion (≥10 units), but not in those who receive <10 units.

Roberts RM, Hersh AL, Shapiro DJ, Fleming-Dutra K, Hicks LA. *Antibiotic Prescriptions Associated with Dental-Related Emergency Department Visits.*

The objective of this study was to quantify how often, and which dental diagnoses seen in the ED resulted in an antibiotic prescription using the National Hospital Ambulatory Medical Care Survey (NHAMCS) data of visits to the ED for dental conditions during 2011-2015. Based on an unweighted 2,125 observations from the NHAMCS in which a dental-related diagnosis was made, there were an estimated 2.2 million ED visits per
year for dental-related conditions, which accounted for 1.6% of ED visits. An antibiotic, most often a narrow spectrum penicillin or clindamycin, was prescribed in 65% of ED visits with any dental diagnosis, and the most common dental diagnoses for all ages were unspecified disorder of the teeth and supporting structures (44%), periapical abscess without sinus (21%), and dental caries (18%). Given that the recommended treatments for these conditions are usually dental procedures rather than antibiotics, the results may indicate the need for greater access to both preventative and urgent care from dentists and other related specialists as well as the need for clearer clinical guidance and provider education related to oral infections.

Upcoming CEDR Webinar on November 15

Year 3 Proposed Rule: 2019 Participation in APMs
Speaker: Corey Henderson, Health Insurance Specialist within the Center for Medicare and Medicaid Innovation Center CMS-CMMI | November 15, 2018 1:00 PM CST - Register Today!

Want to improve your skills managing behavioral or medical emergencies?

Come join the Coalition on Psychiatric Emergencies (CPE) for a pre-conference workshop on Dec. 12th in Las Vegas Nevada. The Coalition is presenting two pre-conferences: Critical Topics in Behavioral Emergencies for Emergency Physicians and Critical Topics in Emergency Medicine for Psychiatrists. Come improve your skills and earn CME! The early-bird rate for members is $149. To view the full schedule and to register, visit the pre-conference website.
Introducing BalancED

A new, physicians-only wellness conference where you can focus on your well-being in your practice and your daily life. Join us February 19-22, 2019 at the beautiful Ojai Valley Inn in Ojai, CA to learn ways to help reduce stresses in your practice. Then, in the afternoon it’s time to get out of the course room and spend time participating in the numerous wellness activities available at the resort.

ACEP Doc Blog!

Looking for a way to increase your visibility and reach patients? Consider contributing to the ACEP Doc Blog! The blog lives on the ACEP patient-facing website www.emergencycareforyou.org. The Doc Blog offers plainly worded insight and expertise to patients from emergency physicians. Topics include health and safety tips, “day-in-the-life” experiences, passion projects and more. Our goal is to create short (500 word) posts that help put a human face on emergency medicine. Recent posts:

- Cats, Dogs and Dander… Oh, My!
- Dear Patient: A Letter from Your Emergency Physician
- Your Summer Guide to Bug Bites & Skin Rashes
- Heat Stroke and Hot Cars
- Not the Right Time for a Selfie: A Conversation about Hawaii and Volcano Safety

Contact Steve Arnoff to learn more about contributing to the ACEP Doc Blog.
ACEP’s 50th Anniversary Books

Buy one for yourself or give as a gift! Bring ‘em All and Anyone, Anything, Anytime available at bookstore.acep.org.

Seniors make up 43% of all hospitalizations originating in the ED
In recognition of challenges with older adult presentations, *guidelines to improve ED care for older adults* have been established by leaders in emergency medicine. To further improve the care and provide resources needed for these complex older adult presentations, ACEP launched the **Geriatric ED Accreditation Program (GEDA)** to recognize those emergency departments that provide excellent care to older adults. The program outlines the approach to the care of the elderly ED patient according to expertise and available evidence, with implications for physician practice and ED processes of care. GEDA provides specific criteria and goals for emergency clinicians and administrators to target, designed to ensure that our older patients receive well-coordinated, quality care at the appropriate level at every ED encounter.

Become accredited and show the public that your institution is focused on the highest standards of care for your community’s older citizens.

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**Free Medication-Assisted Treatment Training**

Eight hours of training on medication-assisted treatment (MAT) is required to obtain a waiver from the Drug Enforcement Agency to prescribe buprenorphine, one of three medications approved by the FDA for the treatment of opioid use disorder. Providers Clinical Support System (PCSS) offers free waiver training for physicians to prescribe medication for the treatment of opioid use disorder. PCSS uses three formats in training on MAT:

- Live eight-hour training
“Half and Half” format, which involves 3.75 hours of online training and 4.25 hours of face-to-face training.

Live training (provided in a webinar format) and an online portion that must be completed after participating in the full live training webinar.

Trainings are open to all practicing physicians. Residents may take the course and apply for their waiver when they receive their DEA license. For upcoming trainings consult the MAT Waiver Training Calendar. For more information on PCSS, click here. For more information on MAT training, email Sam Shahid.

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Call for Consultants - SAMHSA State Targeted Response Technical Assistance (STR-TA) Initiative

Join over the 500 Treatment Technical Assistance (TA) Consultants already participating in the initiative to target the opioid epidemic. TA Consultant responsibilities would include:

- Supporting local multidisciplinary TA teams to provide expert consultation to providers in the delivery of OUD services (up to 10 hours a week). When asked to provide TA expertise consultants will be compensated $100/hour for up to 10 hours a week.
- Participate in web-based training
- Participate in train-the-trainer activities (as needed)

ACEP is one of the partners in the SAMHSA STR-TA Initiative. Please email Sam Shahid for more information.
NEMPAC On Track to Reach Record Fundraising Goal

While celebrating ACEP’s 50th Anniversary’s in San Diego, hundreds of ACEP members also confirmed and celebrated their commitment to advocacy on behalf of emergency medicine and patients. As in years past, ACEP Council members stepped up to the plate during the NEMPAC Council Challenge to ensure that emergency medicine stays at the top of the leaderboard among medical PACs.

NEMPAC collected a record total of more than $350,000 from Council members. Of note is the strong support by all Council members representing the Emergency Medicine Resident Association (EMRA), who strive each year to be the first group within the Council to reach 100-percent participation at the premier “Give-a-Shift” donor level. Thirty-nine state chapters and the Government Services chapter reached 100-percent participation this year. In addition, 38 Past-Presidents and Past-Council Speakers met the challenge of NEMPAC Chairman Peter Jacoby, MD, FACEP and added their support. Combined with thousands of donations from ACEP members across the country, NEMPAC is well on its way to setting an all-time fundraising record to reach a goal of $2.3 million for the 2018 cycle.

This outpouring of support in a pivotal election year will ensure that NEMPAC can continue to educate new and veteran lawmakers and help emergency medicine identify friends and champions in Congress so that ACEP’s ambitious legislative agenda stays on course. NEMPAC is tracking to contribute more than $2 million to 27 Senate candidates and 160 House races. Candidates worthy of NEMPAC support are vetted and approved by the NEMPAC Board of Trustees who value those who will support emergency medicine issues and are committed to bipartisan advocacy.

Read the full-length article published in ACEP Now on October 3.

For more information about NEMPAC, visit our website or contact Jeanne Slade.
Welcome New Members

Richard Alexander
Loyal Shane Farley
Corey Gunderson
Jacob Michael Schwab, BSN, RN
Jason Tanner