Illinois EPIC
Emergency Physicians Interim Communique

Illinois College of Emergency Physicians
3000 Woodcreek Drive, Suite 200
Downers Grove, IL 60515

2016 - Issue 6
Vol 16 No 6

PRESIDENT'S LETTER

Embracing the Constancy of Change

Valerie J. Phillips, MD, FACEP

"Change is the only constant in life."
— Heraclitus, Greek philosopher (500 BC)

As January has brought the start of a new year and with it, a newly inaugurated president, I find I have been reminding myself of the constancy of change more frequently. I am both excited and apprehensive about not only the next 100 days, but the next 1,460. Certainly in the career that we've chosen, constant change isn't a new or surprising concept for us.

What is most important to remember during periods of change is the necessity to adapt. Adaptation and flexibility allow us not only to meet the challenges of change head-on, but perhaps to grow and flourish in the new environment.

At my hospital, change is apparent all around me: both physically, as construction at Advocate Good Samaritan Hospital continues, and administratively, in the departments I am part of. Some of these changes very closely affect my role in EMS and emergency preparedness. Because I am closer to these changes and have access to the flow of information surrounding them, I can better define what I need to do in my clinical and administrative roles going forward, in order to adapt.

In contrast, changes that may be coming at the national level will certainly have great impact on our patients and our professional roles, but we cannot expect the same transparency and flow of information. President Trump has already indicated that there will be changes to the Affordable Care Act.

Depending on the source, it is estimated that an additional 20 million persons have obtained insurance under the ACA since 2010. Estimates also include that there are more than 10 million more persons who may be eligible to purchase insurance coverage from a Qualified Health Plan (QHP) through the marketplaces ("QHP-eligible uninsured") that remain uninsured for multitude of reasons. Furthermore, there are innumerable persons that remain uninsured but are not included in the published ACA statistics.

In our practice environment, we have certainly seen the benefit to patients of being able to obtain insurance despite pre-existing medical conditions. We have also seen the benefit of parents obtaining or maintaining insurance on their young adult children. However, we also see the issues of insurance products, with significant premiums yet very high deductibles and numerous exclusions, as well as narrow networks and limited emergency coverage.

We as emergency physicians will need to be dilligent about monitoring the proposed changes to the ACA, and other policy changes that might enhance, or deter, our ability to provide appropriate care and follow-up for our patients. Certainly there is room for improvement, and health care providers and patients need to have a clear voice in the room when changes are considered.

We do have some ideal opportunities to discuss our concerns in the very near future. On March 12-15, emergency physicians from across the country will gather in Washington, DC, to meet with our national legislators as part of ACEP's Leadership and Advocacy Conference. This event continues to grow each year. Find out more about the speakers and programming on the 2017 agenda in the story on Page 4 or online at ACEP.org/lac.

The opportunities for changes are available on the local level as well. On March 30, we encourage all interested ICEP members to travel to the state capitol in Springfield to meet with legislators from our home districts. Find out more in the story on Page 4, or at ICEP.org/advocacy.

Even a phone call to legislators can be effective. ICEP will be adopting a new advocacy platform in 2017 to make it easier than ever to find and contact your legislators. Watch your email for an invitation to become an ICEP advocate.

As change swirls around us, the only thing you can't do is stand still. Go with the flow and embrace the constancy of change. Where you end up just might surprise you.

— Valerie J. Phillips, MD, FACEP
ICEP President

InsideEPIC

2016 - Issue 6

Tips and Pitfalls in Emergency Medicine Research:
Formulating the Research Question

By Shu B. Chan, MD, MS, FACEP
ICEP Research Committee Chair

"Tips and Pitfalls in Emergency Medicine Research" is a new series authored by ICEP Research Committee members.

Perhaps the most difficult task for novice researchers involves formulating a proper research question. Many researchers immediately gravitate toward study questions that are exciting or currently popular, especially in the medical social media. The problem, of course, is that you are not the only researcher considering these same questions. Then somewhere in the planning stage for your research, you find that one or more emergency physicians have done the research and beaten you to the punch.

Other novice researchers depend too heavily on their mentors or peers to suggest good projects. Then somewhere in the data collection phase of your study, you find that you have lost all interest. This is usually because the research idea was not yours to begin with and your passion and commitment to the research question wanes as the grunt work for the project progresses.

As research director, I have found the most successful research projects are always, always those in which one or more of the investigators are truly and passionately committed. This almost always guarantees the project's completion, although submission and acceptance by a journal is never guaranteed.

That said, my number one tip is to formulate a study question for which you have a true interest. The best questions are those for which you may have a personal interest (such as a disease process which you or a loved one may have encountered in the past), or a personal issue (such as an acute case which went badly for you and/or the patient).

My second key tip is to formulate your study question yourself. Of course, you may use questions suggested by your mentors or others, but try to re-formulate the question from scratch yourself. This is important because by doing this step, even if it repeats something done by someone else, you will "own" the question and it will be clear in your mind.

To prevent formulating a study question which may repeat good research already done, I find it much more efficient to do a partial literature review while actually in the process of defining the research question. Generally, as your literature review is being done, you will adjust your study question to reflect what has been previously published. As you refine each element of your study question, you will find more specific references for your study.

When teaching the annual UIC–Resurrection research course, I like to use the "PICO" format for honing down on the final study question. To quickly review: "P" represents the population to be studied, "I" represents the intervention or exposure which the study subjects will have, "C" represents any group comparison to be analyzed or any co-exposure or any major confounding variable which you need to consider, and finally "O" represents the primary outcome you will be looking at.

For example, let's say that I am interested in strokes presenting as dizziness and after reviewing two or three review articles on the subject realize that several good retrospective studies have been already done (not true, by the way) but the average age in these studies was 75 years old. I may then decide that the study question is still worthy but perhaps I should only include young patients 18 to 65, so as to not repeat any prior publications. Then I would revise

■ CONTINUED ON PAGE 11

Call for Abstracts for Showcase at Spring Symposium

ICEP is seeking submissions for the annual Statewide Research Showcase held at the 2017 Spring Symposium on Thursday, May 4 at Northwestern Memorial Hospital. This is ICEP's only research presentation opportunity, so don't miss your chance to submit and present at a regional meeting!

The Statewide Research Showcase is open to both residents and attending physicians to present oral and poster presentations. All abstracts will be considered, even if previously presented at other meetings.

Download the application and guidelines from ICEP.org/research. The deadline to submit is Friday, March 3. Approximately 5 abstracts are selected for oral presentation and 10 abstracts for poster presentation.

Abstract guidelines and scoring system remain the same as in 2016. The maximum word count for the abstract is 350 words.

All abstracts must be submitted electronically to Lora Finucane at loraf@icep.org with the completed Abstract Submission Form. Abstracts must conform to the guidelines listed in the form in order to be considered. A blinded copy of the abstract must be included for judging purposes.

Illinois EPIC

Illinois College of Emergency Physicians
3000 Woodcreek Drive, Suite 200
Downers Grove, IL 60515
Phone 630.495.6400 Fax 630.495.6404
www.icep.org

Editor
Cai Glushak, MD, FACEP
ICEP President
Valerie J. Phillips, MD, FACEP
Executive Director
Virginia Kennedy Palys
Managing Editor
Kate Blackwelder

Illinois EPIC is published by the Illinois Chapter, American College of Emergency Physicians. Opinions expressed in this newsletter do no necessarily express the views of ICEP.

All advertisements appearing in the Illinois EPIC are printed as received from the advertisers. Advertisement in the EPIC does not imply endorsement of any product or service by the Illinois College of Emergency Physicians. ICEP receives and publishes advertisements but neither reviews, recommends or endorses any individuals, groups or hospitals who respond to these advertisements.

For membership or advertising information, call 630.495.6400 or dial toll-free 888.495.ICEP. Or visit ICEP online at ICEP.org

ICEP Oral Board Review Courses Now Feature eOral System Used by ABEM

ICEP's Oral Board Review Courses are a spot-on simulation of the Oral Exam that has been expertly designed to maximize your performance and minimize anxiety. In 2017, the popular course is better than ever!

ICEP is proud to be one of the few programs offering practice and preparation on the eOral system used by ABEM for the board exam.

Build confidence and skills on the interactive digital interface that includes:

- Dynamic vital signs and rhythm strip
- Digital images, animations and videos
- Test ordering and review

Every participant at ICEP's courses will experience two single-case encounters on the eOral system.

Preview the program with a sample case online at ICEP.org/oralboard.

The Illinois College of Emergency Physicians (ICEP) has been granted a sub-license for use of eOral software identical to that used for the ABEM Oral Certification Examination. Case content is entirely that of ICEP.

Registration is open now for both spring and fall courses: April 5-6, 2017 or September 15-16, 2017. Courses are held at the Chicago O'Hare Marriott, the ABEM Oral Board Exam Site — an advantage other courses can't offer. ICEP's courses offer one-on-one case simulation with experienced faculty who provide immediate, personalized feedback on your performance. There are two different course options available: The Core Review Plus 10-Hour Course and the Core Review 6-Hour Course. Both course options include six single-case and two multiple-case encounters one-on-one. No duplicate cases are presented, so you can choose one or both programs depending on the level of review you are interested in.

The eOral software at ICEP's Oral Board Review Courses is identical to the program used by ABEM. Participants use the interface to review and order tests as well as view dynamic vital signs, rhythm strip, digital images and more.

For more information about the course options or to register, visit ICEP.org/oralboard. If you are feeling overwhelmed with the options, ICEP can help! Call us at 630-495-6400 for a customized course experience that gives you the practice and preparation you need.

Winter CME Program in Peoria Features ACEP President Dr. Parker on Resiliency

Registration is open now for ICEP's Emergency Medicine Update on Thursday, February 16 at the Jump Trading Simulation Center in Peoria.

The program features a keynote workshop presentation by ACEP President Rebecca Parker, MD, FACEP, focusing on resiliency in a time of constant change. This important session will define burnout syndrome, identify the best measurement tools (MBI survey) and how it applies to emergency practice, and explore strategies and direct application of resiliency tools and tactics.

Also on the agenda are:

- The Dangers of Cognitive Bias in the Prehospital Setting and How to Combat Them, presented by Christopher McDowell, MD, MEd, MS, FACEP and Sven Steen, MD, R-3
- Perinatal Emergencies, presented by Victor Chan, DO
- A Pharmacopoeia of Pediatric Poisonings, presented by Greg Podolej, MD
- The Top 10 EM Articles of 2016, presented by John W. Hafner, Jr., MD, MPH, FACEP

In the afternoon, registrants can stay for an optional 3-hour Simulation Skills Workshop, available to add on for $99. The program offers two modules, Pediatric Overdose Resuscitation and Obstetrical Emergencies, with 90 minutes of hands-on practice at each station. If you cannot attend the morning program, you also welcome to attend only the Sim Workshop.

For the complete schedule and educational objectives, view the program brochure online at ICEP.org.

The program is approved for a maximum of 7.5 *AMA PRA Category 1 Credits*™ (4.5 hours for the morning program and 3 hours for the Simulation Skills Workshop).

The cost of the morning program is $115 for ICEP/ACEP members, $145 for non-member physicians, $85 for nurses, PAs, and EMS providers, $25 for residents, and free for medical students.

Register online at now at ICEP.org or call ICEP staff at 630.495.6400 to register by phone. This program, including the Simulation Skills Workshop, is open to all levels of emergency care providers.

ICEP Advocacy Day is Thursday, March 30 in Springfield: Register to Join Us

Join ICEP members and ICEP's lobbyists on Thursday, March 30 in Springfield to meet with state legislators to lobby for emergency medicine issues.

The program will start at the Sangamo Club in Springfield, where participants will attend a briefing with lobbyists from Illinois Strategies, LLC., and have lunch at the Club.

After lunch, the group will walk to the state capitol to visit legislators. Members may make appointments with their legislators but should note that many legislators' offices do not take appointments and prefer drop-in visits.

ICEP Advocacy Day is free for all members, but advance registration is required. Registration is open online now at ICEP.org.

Participants outside of Springfield may wish to take Amtrak for convenience. The Amtrak station is within walking distance of the Sangamo Club.

Leadership and Advocacy Conference in DC on March 12-15 to Feature 'ZDoggMD'

The 2017 Leadership & Advocacy Conference (LAC) on March 12-15 in Washington, DC, will celebrate emergency medicine's accomplishments and continue to work for a better political environment for our specialty and our patients. The program trains first-timers to educate their members of Congress while seasoned participants build upon their valuable Congressional connections already established.

ACEP's goal is to highlight and advocate for legislation advancing emergency care, regardless of party labels. At the c onference, the nation's experts will lead discussions and help tackle problems facing our specialty, demonstrating how to develop tools to advocate at all levels.

ACEP President Becky Parker, MD, FACEP, noted that ACEP hopes to hear from the administration speakers as to their availability in the near future, and is cautiously optimistic that the Democratic Whip in the U.S. House of Representatives, Rep. Steny Hoyer (D-MD), will confirm his participation. Dr. Parker also highlighted a highly anticipated session on out-of-network/balance billing by speakers with field experience, noting its timeliness due to the recent activity in Florida and legislative experiences in other states.

The conference's keynote speaker is the talented "ZDoggMD," Dr. Zubin Damania. He will perform late on Monday where he will tackle through his unique delivery issues such as resiliency, burnout and work/life balance.

The complete Leadership and Advocacy program for 2017 is available at ACEP.org/lac.

ACEP's Lobby Day – Tuesday, March 14
Each year, emergency physicians' make a greater and more lasting impression during ACEP's Lobby Day on Capitol Hill. After Advocacy Training sessions that include extensive briefings on current issues and interactive sessions to prepare you for the face-to-face meetings, all participants will head to the Hill to meet with legislators and staff to discuss the most pressing issues facing emergency medicine and patients. The visits serve many purposes including educating legislators on emergency medicine issues, seeking support for specific bills or legislative initiatives, and showing appreciation for past support.

Many ACEP members look forward to these meetings as a means of re-connecting with legislators and staff who they have worked with over the years. In some instances, the meetings serve as an opportunity to ask a legislator, for the first time, to become an advocate for ACEP's legislative and public policy agenda.

ACEP is scheduling your Capitol Hill visits with key legislators and staff through Soapbox Consulting, LLC. You will NOT need to contact your legislator's office directly for an appointment.

Register today to gain world-class advocacy skills and health policy education at ACEP's Leadership & Advocacy Conference. Visit ACEP.org/lac to sign up or find out more details.

Statewide Research Showcase Abstract Round-Up with ICEP Research Committee

The Statewide Research Showcase continues into 2017! Each issue of EPIC will feature the Abstract Round-Up. Several abstracts that were selected for the Statewide Research Showcase at the 2016 Spring Symposium will be printed, with brief commentary provided by a member of the Research Committee. This month's commentary is provided by Kelly Williamson, MD.

Supplemental Milestones for 48-Month Emergency Medicine Residency Programs: A Validation Study

Andrew R. Ketterer, MD, MA, Jeremy B. Branzetti, MD, David H. Salzman, MD, Med, Michael A. Gisondi, MD; Northwestern University Feinberg School of Medicine, Chicago, IL

Background:
Emergency Medicine (EM) residency programs may be either 36 months or 48 months in length. The Residency Review Committee for EM requires that 48-month programs provide educational justification for the incremental 12 months. We developed additional milestones that 48-month programs might use to define and assess outcomes in domains that meet this accreditation requirement.

Objective:
This study aims to validate these proposed supplemental milestones using a similar methodology to that established by the original EM Milestones validation study.

Design/Methods:
A panel of EM program directors and content experts at two institutions identified content domains for additional training offered by many 48-month EM programs. This led to the development of 6 novel subcompetencies: Operations and Administration, Critical Care, Leadership and Management, Research, Teaching and Learning, and Career Development. Subject-matter experts at other 48-month EM residency programs refined the milestones for these subcompetencies. Program directors of all 48-month EM programs were then asked to order the proposed milestones using the Dreyfus model of skill acquisition for each subcompetency. Data analysis mirrored that used in the original EM milestone validation study, leading to the final version of our supplemental milestones.

Results:
Sixteen of 33 subjects (48.5%) completed the study. No subcompetency or individual milestone met deletion criteria. Of the 97 proposed milestones, 61 (62.9%) required no further editing and remained at the same level as proposed by the study authors. Thirty-five milestones underwent level changes: 15 (15.5%) were moved one level up and 18 (18.6%) were moved one level down. One milestone (1.0%) in 'Leadership and Management' was moved two levels up, and one milestone in 'Operations and Administration' was moved two levels down. One milestone in 'Research' was ranked by the survey respondents at one level higher than that proposed by the authors, however this milestone was kept at its original level assignment.

Conclusion:
Six additional subcompetencies were generated and validated among a cohort of 48-month program directors using the same methodology as was used to validate the current EM Milestones. These optional milestones may serve as an additional set of assessment tools that will allow 48-month programs to report educational outcomes using a familiar milestone rubric.

Impact:
These supplemental milestones may be used for self-study by 48-month Emergency Medicine residency programs in preparation for internal review. Alternatively, the methodology used here demonstrates a means by which individual programs can create validated tools to track the effectiveness of their own educational goals and objectives.

RESEARCH COMMITTEE COMMENTARY:
While the Residency Review Committee (RRC) requires that 48-month programs provide educational justification for the additional training time, there is currently not an objective measure for this assessment. The study authors conducted a valuable study in which they proposed 97 additional Milestones within six novel subcompetencies and attempted to validate them using similar methodology to that which was utilized by the original EM Milestones study. While the overall response rate for validating the Milestones was low at 48.5%, the authors were successful in their attempt to provide an additional set of assessment tools that can aid 48-month residencies with self-study and tracking the effectiveness of their educational goals and objectives.
— Kelly Williamson, MD

Electronic Best Practice Advisories (BPAs) Effectiveness in Detecting Sepsis in the Emergency Department

Chaeowei Tsai, BS, Nian Verzosa, BS, Diana Norris, RN, Andrew Vincent, DO, Katan Patel, DO; University of Illinois College of Medicine at Peoria, Peoria, IL

Background:
The incidence of severe sepsis is 750,000 cases per year in the U.S. and Canada, causing significant morbidity and mortality. Current guidelines from the Surviving Sepsis Campaign (SSC) recommend administering appropriate antibiotics within the first 3 hours of recognition of severe sepsis and septic shock; delayed antibiotic treatment is associated with increased morbidity. Best Practice Advisories (BPAs) are reminder tools within the Epic® electronic health record (EHR) system that provide clinical decision support. This study aims to evaluate if BPAs are effective at detecting potentially septic patients in an ED setting.

Objective:
A structured retrospective review of medical records was conducted at an academic urban emergency department (annual visits >85,000) of patients who initially met systemic inflammatory response syndrome (SIRS) criteria after an electronic BPA was implemented (March 1-30, 2014 and the first 7 day monthly period of April 1-September 30, 2014). The BPA Sepsis Risk Scoring System was created based on the Surviving Sepsis Campaign (SSC) guidelines and guided by the Detecting and Treating Sepsis manual from Epic® Systems. A score >2.5 meant that a patient met SIRS criteria, is potentially septic, and triggered the BPA. The definitive diagnosis of sepsis for ED SIRS visits was based upon final diagnostic related group (DRG) coding and further established by imaging modalities, urinalysis, and physical exam findings on chart review. BPAs'

■ CONTINUED ON PAGE 10

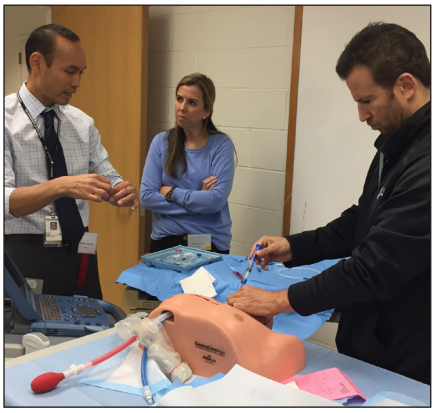
Emergent Procedures Sim Course Dates Set for 2017

ICEP's top-rated Emergent Procedures Simulation Skills Lab courses at the Grainger Center for Simulation and Innovation in Evanston are scheduled for April 21 and October 6, 2017. Registration is open online at ICEP.org/sim.

Sharpen your skills for high-risk procedures with a full day of hands-on practice on 20+ critical-care procedures. Expert faculty, the convenient 1-day format, and a state-of-the-art facility at Evanston Hospital set ICEP's course apart from the rest.

Participants work hands-on with the most current simulation technologies, rotating in small groups through numerous procedure stations that are organized into four modules: Airway, Cardiovascular, Pediatric/Obstetric, and Ultrasound.

The faculty-to-participant ratio is small to ensure that participants get the personalized instruction and practice time they need to feel confident performing the critical-care procedures that are seldom performed day-to-day in the emergency department because their clinical presentation is rare.



Dr. Ernie Wang (left), Emergent Procedures Simulations Skills Lab co-creator and former course director, demonstrates proper technique while participants practice hands-on.

Voting for ICEP Board Elections Opens March 20

Mark your calendar and watch your email for details: ICEP Board of Directors voting opens online on Monday, March 20, 2017.

Active (non-candidate) members will elect five active members to the Board of Directors. Each will serve a three-year term. Candidate members will elect one Resident Member, who will serve a one-year term. The final slate of candidates will be announced in February.

Voting will be conducted online, as it has been in the past, and members will visit www.associationvoting.com/icep to access their personal ballot. Members will need their ACEP Member Number (beginning with A) and their last name exactly as they have it registered with ACEP in order to log in to the ballot. An email with detailed voting instructions and all candidate materials will be sent to all members on March 20 when the ballot opens.

Save the Date for EMS Summit in Springfield

Save the date and plan to attend the Illinois EMS Summit presented by the Illinois EMS Alliance.

ICEP is proud to be a member of the Illinois EMS Alliance.

The 1-day summit will be held Thursday, April 6, 2017, from 8:30 a.m. to 4:30 p.m. at the Memorial Center for Learning and Innovation in Springfield.

The cost of the program is $15 and CEUs will be available to registrants. Complete registration details will be released soon.

A group rate for overnight accommodations has been aranged at the Carpenter Street Hotel in Springfield. Call 217-789-9100 for reservations.

For more information about the 2017 EMS Summit, contact Dennis Presley at 618-453-3314.

Mission: Lifeline Program Seeks Applications for EMS Recognition

Mission: Lifeline® is excited to offer a recognition program designed to showcase Emergency Medical Service organizations across the nation for excellent STEMI care. In 2016, 21 agencies in Illinois were recognized.

Application to apply for recognition is open until March 31, 2017. Mission: Lifeline Director Art Miller, RN/EMT-P encourages organizations to apply as early as possible so he can better track and anticipate Illinois' participation.

To learn more about the requirements for EMS recognition and download the applications, browse the AHA program tools online at: http://www.heart.org/HEARTORG/Professional/MissionLifelineHomePage/Mission-Lifeline-EMS-Recognition_UCM_308047_Article.jsp#.WH-rsfKQzGj

ESP joins US Acute Care Solutions.

Howdy partners.

USACS – the largest physician-owned acute care group in the country – you're staking a claim that no one is going to buck you off the saddle. As physicians, you know physician ownership creates the best experiences for our patients and the best relationships with our hospital partners. Together we're going to own the arena. Ride on.

Emergency Service Partners

US Acute Care Solutions

Own your future now. Visit usacs.com
or call Darrin Grella at 800-828-0898. dgrella@usacs.com

Founded by ESP, ERGENTUS, APEX, TBEP, MEP, EPPH and EMP

Statewide Research Showcase Abstract Round-Up with ICEP Research Committee

from Page 6

sensitivity, specificity, PPV, NPV was calculated and 95% confidence intervals (CI) established.

Results:
Over the course of the study period, 13,906 records were screened, 565 BPAs fired and 313 cases of sepsis were confirmed (2.3% prevalence). The BPAs' sensitivity and specificity was 74.5% (95% CI=69.2–79.1%) and 97.6% (95% CI=97.3–97.8%) respectively, with positive and negative predictive values of 41.2% (95% CI=37.2–45.4%) and 99.4% (95% CI = 99.3–99.5%) respectively. The BPA's positive and negative likelihood ratios (LR) (weighted for prevalence) were 0.70 (95% CI=0.62–0.79) and 0.006 (95% CI=0.005–0.008). No significant changes were noted in the BPA sensitivity or specificity when confined to severe sepsis or septic shock.

Conclusion:
BPAs were an effective EHR-based tool that detected potentially septic patients with moderate sensitivity and high specificity in our ED. The test's high negative LR and negative predictive value make it valuable in excluding sepsis as differential diagnosis in a general ED population. Future directions for follow-up studies include cost analysis, morbidity/mortality studies, and multicenter comparisons of other quality metrics that can be improved by having a system such as BPA that reduces time to appropriate medical intervention.

RESEARCH COMMITTEE COMMENTARY:
Severe sepsis causes significant morbidity and mortality and early recognition and initiation of resuscitation and antibiotic therapy is imperative. The authors conducted a large retrospective review of 13,906 records to determine if the addition of an electronic BPA aided in the identification of potentially septic patients. As "time of presentation" for sepsis starts with emergency department triage, methods that aid in early detection are valued. The authors are commended for their study and ultimately determined that the BPAs are more specific than sensitive and ultimately a tool with increased sensitivity would be ideal. With qSOFA scores replacing SIRS criteria in the detection of sepsis, there is an option for modification that may increase sensitivity.
— Kelly Williamson, MD

Evaluation of Medical Management of Pediatric Patients with Suspected Sepsis During Emergency Transport by a Pediatric Transport Team

Ashley Barrile, MD, Justin Hoskins, MD, Matthew Sanchez, MD, Emily Dawson, MD; University of Chicago Medicine, Comer Children's Hospital, Chicago, IL

Background:
Evidence-based practices for pediatric sepsis care exist, and studies show early implementation of goal-directed therapy improves outcomes in children with sepsis. Adult studies show use of sepsis screening tools in prehospital settings improves identification of sepsis, enabling earlier appropriate therapies and leading to improved outcomes. Similar studies in pediatrics evaluating need for transport teams to use screening tools have not been performed.

Objective:
Determine whether pediatric transport teams appropriately identify sepsis in pediatric patients and provide proper, timely therapies per accepted guidelines.

Design/Methods:
Retrospective chart review of all children (0-18 years) transported to our hospital by a pediatric transport team from 1/1/2014-12/31/2014. Records were reviewed for high-risk conditions, vital signs/exam findings (initial evaluation and upon arrival), interventions, clinical status changes, and discharge diagnoses. Retroactively applying a pediatric sepsis screening tool, we determined if these patients screened positive for clinical signs of sepsis at initial evaluation by transport team and/or upon arrival and if those who screened positive received guideline-based interventions.

Results:
246 of 562 patients considered met inclusion criteria. 44 screened positive for sepsis at initial transport team evaluation. Of these, 91% received IVFs (72% received IVF bolus); only 68% received antibiotics and 45% had diagnosed sepsis. 202 patients did not meet sepsis criteria at initial evaluation, however some evaluations were missing vitals or exam findings needed to fully apply the screening tool. Of these 202 patients, 3 had diagnosed sepsis.

Conclusion:
A significant percentage of patients transported by a pediatric transport team would have screened positive for suspected sepsis at initial evaluation and did not all receive recommended therapies per PALS guidelines. Use of maintenance instead of bolus fluids occurred, but correct fluid resuscitation was more common than timely antibiotic administration. It is possible that providers in these cases did not recognize pediatric sepsis and/or were unfamiliar with pediatric sepsis management guidelines.

Impact:
Prehospital emergency transport represents a crucial, time-sensitive opportunity for recognition and management of suspected sepsis in pediatric patients. Given our results, we recommend use of a sepsis screening and management tool by transport teams to assist in early identification and treatment of pediatric sepsis.

RESEARCH COMMITTEE COMMENTARY:
As adult studies have concluded that screening tools in the pre-hospital setting improve sepsis detection, the authors conduced a retrospective chart review to determine if the addition of a screening tool would aid in the early detection of sepsis for pediatric patients undergoing transport. The authors determined that a significant percentage of patients would have screened positive at the time of transport and did not receive recommended therapies per PALS guidelines. The next step will be to determine the most appropriate instrument for the pre-hospital screening.
— Kelly Williamson, MD

Call for Abstracts for 2017 Showcase

ICEP is seeking submissions for the annual Statewide Research Showcase held at the 2017 Spring Symposium on Thursday, May 4 at Northwestern Memorial Hospital. Download the application and guidelines from ICEP.org/research. The deadline to submit is Friday, March 3. See story on Page 2 for more details!

Tips and Pitfalls in Emergency Medicine Research:

Formulating the Research Question

from Page 2

my study questions with the revised younger population and continue the literature search.

The intervention or exposure so far is "dizziness." As I continue my background search, I find that some studies looked at all "dizziness" while other studies looked at "vertigo" and still others looked at "ataxia." Now I would have to make a decision as to what is the primary "exposure" of interest? I may decide that "vertigo" is much more specific than dizziness and thus may provide more reproducible results. I may also decide that since "ataxia" is known to be associated with posterior circulation CVA, I will include ataxia as part of the study question but as a known "confounder." I may also decide that I am going to compare different groups based on known CV risk factors.

When deciding on the "C" in "PICO", I generally try to only do one primary comparison or one primary confounder. This is because when determining the proposed sample size or data analysis, you should initially only look at the primary comparison or confounder to calculate your numbers. You can always add comparison and/or confounders as the project progresses, but you need an initial primary focus to plan adequately.

Finally, as I am fond of pointing out during journal clubs, the most important part of "PICO" is the outcome ("O"). Choose an outcome that is clinically relevant. Very often a study may be well done and written, but the outcome used only elicits a "so what" from the reviewers.

For example, in the stroke study I am contemplating, if the outcome I report is the number of patients admitted for MRI, then so what? However, if the outcome I report is the number with MRI evidence of CVA, then there would be appropriate interest.

So, when defining your research question, be sure to do the literature search early and be prepared to revise your study question as your question evolves.

One final tip which I offer the reader is this: Do not trust your memory! Write everything down immediately. Take notes using the PICO format. There have been innumerable conversations I have had discussing a possible research question and then one or two weeks later, when I ask how the background search is going, nobody remember any details, let alone the "P", "I", "C", or "O".

Good luck with your research!
— Shu Chan, MD, MS, FACEP
ICEP Research Committee Chair

ICEP Calendar *of* Events 2017

February 2, 2017
Awards & Nominating Committee Conference Call
10:00 AM - 12:00 PM

February 10, 2017
Bylaws Committee Conference Call
10:00 AM - 12:00 PM

February 16, 2017
Emergency Medicine Update & Simulation Skills Workshop
Jump Trading Simulation & Education Center
Peoria

March 6, 2017
Finance Committee Meeting
9:30 AM - 10:30 AM
ICEP Board Room
Downers Grove

March 6, 2017
Board of Directors Meeting
10:30 AM - 2:30 PM
ICEP Board Room
Downers Grove

March 8, 2017
EMS Committee Meeting
11:00 AM - 1:00 PM
ICEP Board Room
Downers Grove

March 8, 2017
EMS Forum
1:00 PM - 3:00 PM
ICEP Conference Center
Downers Grove

March 13, 2017
Education Committee Meeting
11:00 AM - 1:00 PM
ICEP Board Room
Downers Grove

March 20, 2017
ICEP Board of Directors Voting Open Online

March 30, 2017
ICEP Advocacy Day
Sangamo Club & Capitol
Springfield

April 4, 2017
Research Conference Call
10:00 AM - 11:00 AM

April 5-6, 2017
Oral Board Review Courses
Chicago O'Hare Marriott
Chicago

April 19, 2017
ICEP Board of Directors Voting Closes

April 21, 2017
Emergent Procedures Simulation Skills Lab
Grainger Center for Simulation and Innovation
Evanston

April 26, 2017
ITLS Illinois Advisory Committee Meeting
10:00 AM - 12:00 PM
ICEP Conference Center
Downers Grove

April 27 - May 1, 2017
Mock Orals Private Tutorials
Chicago O'Hare Marriott Suites

May 4, 2017
Spring Symposium & Annual Business Meeting
Northwestern Memorial Hospital, Chicago

May 23, 2017
EM4LIFE 2016 LLSA Article Review Course
ICEP Conference Center
Downers Grove

May 29, 2017
Memorial Day Holiday
ICEP Office Closed

May 30, 2017
EMS Committee Meeting
11:00 AM - 1:00 PM
ICEP Board Room
Downers Grove

May 30, 2017
EMS Forum
1:00 PM - 3:00 PM
ICEP Conference Center
Downers Grove