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# The Hospitalist

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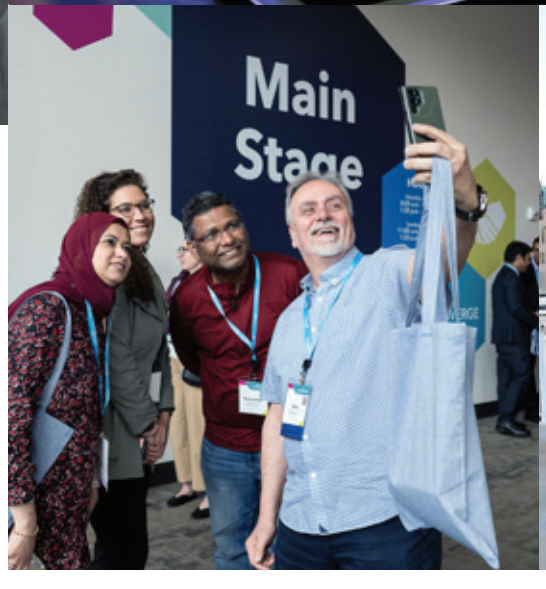



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THE Hospitalist

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IN THE NEXT ISSUE...

**Physical effects of being a hospitalist**

# Billing for a Critically Ill Patient

**By Arunab Mehta, MD, MEd, FHM**


A 64-year-old woman with a history of heart failure with reduced ejection fraction (HFrEF) was admitted to the hospital with pneumonia one day ago and is being started on intravenous (IV) antibiotics. You see her on day two in the morning after she's received 30 ml/kg of IV fluids overnight for sepsis and has normal BP and heart rate (HR). You bill 99233 by MDM criteria. When you see her later in the afternoon, her BP is 80/45, HR is 110, and you're thinking of giving more IV fluids, but you also think she might need pressors in the intensive care unit (ICU). You evaluate her, start ordering tests, and medications, and ask the intensivist to evaluate her as well. You spend 40 mins in the afternoon for this encounter.

## What level of billing does this qualify for?

This would qualify for the critical care (99291) level of billing. This would be appropriate since you're providing care for a critically ill, injured patient in which there is acute impairment of one or more vital organ systems, such that there's a probability of imminent or life-threatening deterioration of the patient's condition. It involves highly complex decision making to treat single or multiple vital organ system failures and to prevent further life-threatening deterioration of the patient's condition.

## Tip

You can bill 99291 by providing between 30 and 74 minutes of care for a patient with imminent or life-threatening deterioration of their health condition regardless of where their physical location is. You can bill 99292 for every additional 30 minutes involved in their care.

*Dr. Mehta is the medical director and an assistant professor of medicine at the University of Cincinnati Medical Center in Cincinnati.*

# SHM News

Converge 2024 may be over, but there are still plenty of ways to connect, learn, and engage with SHM and your fellow members.

Check out these upcoming meetings:

**Adult Hospital Medicine Boot Camp**—Phoenix, Ariz., September 18-22, 2024

**SHM Leadership Academy 2024**—Ranchos Palos Verdes, Calif., October 28-31, 2024

Visit SHM's website, hospitalmedicine.org, for more event details and to explore educational and networking opportunities with your local chapter or a special interest group.

# From *JHM*

The Editor's Pick for the June issue of the *Journal of Hospital Medicine* is Don't hold the metformin: Enhancing inpatient diabetes education to encourage best practices in a public hospital, written by Samantha F. Sanders, MD, MBA, Michael S. Shen, MD, Daniel Alaiev, BBA, Brianna Knoll, MD, MBA, Hyung J. Cho, MD, Surafel Tsega, MD, Mona Krouss, MD, Ian Fagan, MD, and Amanda Klinger, MD.

This multifaceted educational intervention successfully increased the use of inpatient oral diabetes medications in a large urban safety net hospital, which was sustained for approximately two years following implementation. Scan the QR code for the full article. ■


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SHM

Converge may only last a few days, but SHM's CEO, Dr. Eric Howell, explains how members can stay involved all year.

# Connecting, Learning, Engaging at Converge and Throughout the Year

**By Eric E. Howell, MD, MHM**

It's hard to believe that it has been three months since we connected in San Diego at SHM Converge! I enjoyed seeing so many familiar faces and meeting some of SHM's newest members during our time together.

This is one of our favorite issues of *The Hospitalist* each year because we get to relive some highlights from the conference with session recaps from our editorial board and other SHM members, including a few sessions you may not have been able to attend.

From our inspiring keynote on navigating change with intention from mindset expert Parul Somani, to our Updates in Hospital Medicine session with Drs. Suchita Sata and Zahir Kanjee, to our Awards of Excellence presentation, there were more memorable moments than we can count.

While talking with many of you at Converge, a common theme remained evident—the vibrant energy generated by our hospital medicine community being together in the same place. I was inspired to see so many of us learning together and identifying ways we can bring this knowledge back to our institutions to do what we do best—find new ways to improve care for our patients, as our roles continue to expand.

Our learning goes beyond the sessions we attend and includes the many conversations and experiences we share, each of us coming together with a unique background and career path. This combination is what makes SHM Converge such a special event each year and why we look forward to it as much as you do.

Our reunion at SHM Converge may only last a few days, but SHM is working to help you all year long. From advocacy for hospitalists on Capitol Hill to the Hospital Medicine Workforce Experience Survey to our Rapid Clinical Updates webinar series, we are here to support you in all aspects of your career. We are constantly looking for even more ways to do just that, so if you have suggestions, our SHM team would love to hear them.

If you're searching for connections like the ones you made in San Diego, but don't want to wait until we meet again in Las Vegas for SHM Converge 2025, we invite you to get involved in your local chapter by attending an in-person or virtual meeting or connecting with like-minded colleagues in a special interest group (SIG).

Also, if you're reading some of the session recaps in this month's issue of *The Hospitalist* and feel like you need even more content from this year's conference, SHM Converge 2024 On Demand is still available, including a few bonus sessions not presented in San Diego, at hospitalmedicine.org/OnDemand24.

I hope to have the chance to connect with you before SHM Converge 2025, but if not, I'll be ready to chat with you then—and hopefully get a selfie or two!

Thank you for the amazing work you do each day and your continued support of SHM. It is an honor for us to serve you and our extraordinary hospital medicine community. ■

Lisa Casinger

Dr. Zahir Kanjee (left) and Dr. Suchita Shah Sata educated—and entertained!—with their updates in hospital medicine.

SESSION SUMMARY

# Update in Hospital Medicine

**Presenters: Suchita Shah Sata, MD, FACP, SFHM, and Zahir Kanjee, MD, MPH**

**Summary Authors: Lauren Spaeth, DO, and Chris Migliore, MD, MS, FACP**

This year's annual Update in Hospital Medicine transported learners to the San Diego Zoo where they heard from dynamic speakers Dr. Suchita Sata and Dr. Zahir Kanjee. They took the audience on a fun-filled "rounding trip" to the zoo, discussing literature from 2023 that led to key practice updates and confirmations in pneumonia, sepsis, venous thromboembolism (VTE) prophylaxis, atrial fibrillation, heart failure, and much more!

Sepsis is a common reason for hospital admission, often triggered by conditions like pneumonia. The CAPE COD (Community-Acquired Pneumonia: Evaluation of Corticosteroids) trial gave severe community-acquired pneumonia (CAP) a new twist, finding that in 795 adults with severe CAP but without shock, early use of hydrocortisone reduced 28-day mortality by 5.6%, preventing death in one out of every 18 patients.[1] Secondary endpoints also showed no difference in hospital-acquired infection and GI bleeding.

Next, the CLOVERS (Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis) trial explored the difference between restrictive and liberal intravenous fluid administration strategies in patients with sepsis-induced hypotension after initial bolus, finding there was no difference in 90-day mortality.[2] Fluids are a key pillar in sepsis management along with antibiotics, which are crucial to gaining source control, however, they are not without risk.

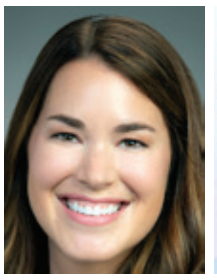
The ACORN (Antibiotic Choice on Renal Outcomes) trial looked at two of the most commonly used empiric antipseudomonal antibiotics, piperacillin-tazobactam, and cefepime.[3] More than 2,500 patients were enrolled at a single center with the primary outcome measure of acute kidney injury or death at 14 days. The study showed that piperacillin-tazobactam did not increase the risk of acute kidney injury or death when compared to cefepime. However, cefepime did show a small increase in neurotoxicity.

If your heart wasn't pumping with excitement already, the speakers broached cardiology topics. If you are like most hospitalists, some of your most common ward calls are for new-onset atrial fibrillation with rapid response. The AFOTS (Atrial Fibrillation Occurring Transiently with Stress) trial aimed to prospectively study atrial fibrillation occurring transiently with stress in hospitalized patients.[4] They found that one-third of patients who developed atrial fibrillation in the hospital, and were in normal sinus rhythm at discharge, had it reoccur. However, it didn't answer the question of anticoagulation needs, but should be considered as a factor guiding shared decision-making with evaluation of other comorbidities.

Extremity fractures in the general population carry with them a host of potential morbidities, one of the more common being throm-

## Key Takeaways

- Use hydrocortisone early in CAP with severe hypoxemia to reduce mortality.
- After bolusing sepsis-induced hypotension, perfusion is the priority: fluids or pressors.
- Enoxaparin is more effective than aspirin for DVT prevention after a traumatic fracture.
- New paroxysmal atrial fibrillation during hospitalization recurs in a third of patients within the next year.
- Aim for aggressive net-negative fluid targets for acute heart failure.
- Piperacillin-tazobactam doesn't cause more acute kidney injury, but cefepime causes neurotoxicity.
- Perioperative blood pressure management: Not too high and not too low, just right.
- Don't routinely treat asymptomatic hypertension in older, non-cardiovascular inpatients, especially not with IV meds.



Dr. Spaeth

Dr. Migliore

*Dr. Spaeth is a first-year resident at OhioHealth Riverside Methodist Hospital in Columbus, Ohio. She serves on SHM's Physicians-in-Training committee and is a former editorial board member of The Hospitalist magazine. Dr. Migliore is the director of consult and perioperative services, and assistant professor of medicine at Columbia University Medical Center in New York.*

boembolic events. The speakers hopped on to the PREVENT CLOT (Prevention of Clots in Orthopaedic Trauma) trial, a large study randomizing patients to enoxaparin or aspirin after surgical treatment of a fracture.[5] This study demonstrated the noninferiority of aspirin to enoxaparin, with similar rates of mortality and fatal thromboembolic events, but non-fatal deep vein thromboembolism (DVT) still occurred more frequently in the aspirin group. The search for perfect postoperative VTE continues, but DVT prevention is still better achieved by enoxaparin in this population.

And who can forget heart failure, one of the most common presentations hospitalists manage? A recently published article in the Journal of Hospital Medicine aimed to examine the following three trials: DOSE (Diuretic Optimization Strategies Evaluation), ROSE (Reevaluation of Systemic Early Neuromuscular Blockade), and ATHENA-HF (Aldosterone Targeted Neurohormonal Combined with Natriuresis Therapy in Heart Failure).6 We all know: diurese, diurese, diurese, but the American College of Cardiology guidelines don't tell us how much or how fast is best. This analysis showed that an aggressive net negative fluid status at 48 hours likely best balances symptom improvement (primarily dyspnea) with avoidance of kidney injury and decreased chances of rehospitalization.

The three POISE (Perioperative Ischemic Evaluation) trials have been instrumental in guiding perioperative strategy.[7] Many of us have been taught to hold angiotensin-converting enzyme inhibitors (ACEi) and angiotensin receptor blockers (ARB) on the morning of surgery and to restart on postoperative day one if context allows, while the American College of Cardiology and American Hospital Association say it's reasonable to continue them. POISE-3 randomized patients to hypotension-avoidance (hold ACEi and ARB) versus hypertension-avoidance (continue ACEi and/or ARB). There was no significant difference in perioperative 30-day cardiovascular outcomes, so unless hypotension is a real risk, it's likely okay to continue them. Are kidney outcomes to follow?

Lastly, what to do with asymptomatic inpatient hypertension? We see this all the time and get quite a few consults for it as well (and as an added bonus, it can make the pager light up!). This retrospective paper from the Journal of the American Medical Association-Internal Medicine evaluated older patients experiencing asymptomatic hypertension (across at least two separate readings) after being admitted for non-cardiovascular indications in the U.S. Veterans Health Administration. Patients started on a least one oral or intravenous (IV) anti-hypertensive were compared with those receiving no such treatment.[8] The takeaway is clear—don't just reflexively treat. And if you treat (remember not to anyway) don't use IV anti-hypertensives. And in case that's unclear: Don't treat. ■

## References


1. Dequin PF, Meziani F, et al. Hydrocortisone in severe community-acquired pneumonia. *N Engl J Med*. 2023;388(21):1931-41.
2. Shapiro NI, Douglas IS, et al. Early restrictive or liberal fluid management for sepsis-induced hypotension. *N Engl J Med*. 2023;388(6):499-510.
3. Qian ET, Casey JD, et al. cefepime vs piperacillin-tazobactam in adults hospitalized with acute infection: the ACORN randomized clinical trial. *JAMA*. 2023;330(16):1557-67.
4. McIntyre WF, Vadakken ME, et al. Atrial fibrillation recurrence in patients with transient new-onset atrial fibrillation detected during hospitalization for noncardiac surgery or medical illness: a matched cohort study. *Ann Intern Med*. 2023;176(10):1299-307.
5. O'Toole RV, Stein DM, et al. Aspirin or low-molecular-weight heparin for thromboprophylaxis after a fracture. *N Engl J Med*. 2023;388(3):203-13.
6. Chen AY, Kannan S, et al. Association of 48-h net fluid status with change in renal function and dyspnea among patients with decompensated heart failure: A pooled cohort analysis of three acute heart failure trials. *J Hosp Med*. 2023;18(5):382-90.
7. Marcucci M, Painter TW, et al. Hypotension-avoidance versus hypertension-avoidance strategies in noncardiac surgery: an international randomized controlled trial. *Ann Intern Med*. 2023;176(5):605-14.
8. Anderson TS, Herzig SJ, et al. Clinical outcomes of intensive inpatient blood pressure management in hospitalized older adults. *JAMA Intern Med*. 2023;183(7):715-23.


SESSION SUMMARY

# Let's Get Physical: Exam Maneuvers that Can Improve Your Clinical Judgement


**Presenter: Daniel D. Dressler, MD, MSc, FACP, MHM**

**Summary Author: Amanda Green, MD, FACP, HMDC, CPPS, SFHM**


In this era where point-of-care ultrasound (POCUS) may make the stethoscope obsolete, Dr. Daniel D. Dressler, professor of medicine at Emory University School of Medicine in Atlanta, started his presentation by asking if we should even do the daily exam anymore. Reviewing the Point:Counterpoint from Journal of Hospital Medicine 2021, he agreed with the summary that diagnostic finesse is necessary, practice is required to achieve this skill, inadequate or incomplete physical exams may lead to errors, and the ritual of the physical exam strengthens the patient-doctor relationship.[1,2] If the physical exam is necessary, what maneuvers are most helpful on exam?

Likelihood ratios (LRs) were reviewed, to highlight that useful maneuvers are those that change your probability and management of a diagnosis. Meaningful maneuvers for anemia using a gastrointestinal bleed case study included conjunctival rim pallor of the eye (LR+ 16.7), dry mucosal membranes (LR+ 2.8), and poor subclavicular (not hand) turgor (LR+ 3.5). Postural blood pressure changes were also significantly helpful for decision making with LR+ of 30 for moderate blood loss (500 mL) and 98 for large blood loss (750-1,000 mL). He noted that there was no need to wait three minutes to assess orthostatic hypotension and quoted an article that one minute was more useful in predicting fractures and falls.[3]

A case study of the dyspneic patient noted that for diagnosis of heart failure, palpating the apical impulse was found to be an accurate evaluation. A laterally displaced apical impulse had an LR+ of 10.3 to predict a low ejection fraction, with an enlarged apical impulse more than 4 centimeters having an LR+ of 4.7. For those of us who do not routinely evaluate this, a normal apical impulse is dime-sized and under the nipple in the midclavicular line. Jugular venous distension had an LR+ of 5.1 for heart failure, with an S3 having an LR+ of 11 and an abdominal jugular reflex an LR+ of 6.4. To improve your exam for jugular venous distension, Dr. Dressler highlighted that the venous pulse (compared to the arterial pulse) is position-dependent (versus fixed), biphasic (versus monophasic), occludable (versus nonoccludable), not palpable (versus palpable), varies with respiration (versus constant throughout respiration), and augments with abdominal pressure (versus unchanged by abdominal pressure).

POCUS was compared to the physical exam in this talk, with POCUS lung findings for heart failure giving an LR+ of 8.8 and POCUS heart findings for heart failure associated with an LR+ of 6. If S3 and lateral displaced apical impulse are found, those LR+ are higher than POCUS for a diagnosis of reduced ejection fraction.

Sepsis in the ICU was the last clinical case considered. The modified early warning score, or MEWS, is often used in the ICU and is associated with an LR+ of 4.8 if it is over 5. Cool legs have an LR+ of 3.7 in shock, and mottled skin has an LR+ of 10.2. Capillary refill was reported as better than a lactate level for diagnosing shock. Anisocoria was also an important finding in patients on ventilators to diagnose possible intracranial bleeding in a sedated patient. Still, he noted, we also have to consider that eyes exposed to bronchodilators will do this as well. ■

Dr. Green


*Dr. Green is an internal medicine hospitalist, internal medicine associate program director, and chief medical officer at Paris Regional Health in Paris, Texas.*


## References


1. Rodman A, Warnock S. Rebuttal: Routine daily physical exam. *J Hosp Med*. 2021. doi: 10.12788/jhm.3672.
2. McNamara LC, Kanjee Z. Counterpoint: routine daily physical exams add value for the hospitalist and patient. *J Hosp Med*. 2021. doi: 10.12788/jhm.3671.
3. Juraschek SP, Daya N, et al. Association of history of dizziness and long-term adverse outcomes with early vs later orthostatic hypotension assessment times in middle-aged adults. *JAMA Intern Med*. 2017;177(9):1316-23.

SESSION SUMMARY

# Challenging Anticoagulation Scenarios: How to Have Smooth Sailing through Choppy Waters

**Presenter: Scott Kaatz, DO, MSc, FACP, SFHM**

**Summary Author: Arunab Mehta, MD, MEd, FHM**

Keeping abreast of updates in anticoagulation guidelines is important for physicians to provide optimal patient care. Multiple changes to recommendations for anticoagulation have been made in the last few years, and this session provided vital updates to existing practice. This session addressed the use of anticoagulants in anti-phospholipid syndrome, the use of anticoagulants in patients with obesity, bariatric surgery, chronic kidney disease (CKD) or hemodialysis, and new changes to the de-escalation of antiplatelets in patients on oral anticoagulants. It also addressed off-label dosing for direct oral anticoagulants (DOACs) in practice and new associations with mortality.

Antiphospholipid syndrome is an uncommon but serious condition that is addressed in the hospital, usually in the context of thrombotic disease. Four randomized trials (rivaroxaban in anti-phospholipid syndrome, or RAPS, trial on rivaroxaban in anti-phospholipid syndrome, or TRAPS, Ordi-Ros's trial, and Apixaban for the secondary prevention of thrombosis among patients with antiphospholipid syndrome, or ASTRO-APS) revealed a higher risk of arterial thrombotic events, especially strokes, in patients using DOACs, making the vitamin K antagonist (VKA) warfarin the agent of choice in this disease (with a goal INR of 2.5). The speaker also suggested not testing for lupus anticoagulant during anticoagulation but agreed with testing for anticardiolipin and beta2-glycoprotein I antibodies even during anticoagulation.

Obesity and body mass index (BMI) have been relative contraindications for the use of DOACs in the past, but recent evidence has led to the International Society on Thrombosis and Haemostasis suggesting the use of standard doses of rivaroxaban or apixaban as appropriate options for treatment of venous thromboembolism (VTE) and atrial fibrillation (AF) regardless of high BMI or weight. Notably, the evidence for such a practice is more robust for rivaroxaban than for apixaban. Bariatric surgery has been another relative contraindication for the use of DOACs, and the the International Society on Thrombosis and Haemostasis has suggested not using DOACs for the treatment and prevention of VTE in the acute setting after bariatric surgery and to use parenteral anticoagulation instead for the first four weeks. Using DOACs and VKA might be reasonable after this time, but DOAC trough levels are suggested to check for drug absorption and bioavailability if DOACs are chosen.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Hemodialysis patients have been another area of evolving practice in the anticoagulation world. The 2022 RENAL-AF trial suggested that the use of apixaban was non-inferior to warfarin as it pertains to bleeding events in atrial fibrillation. Other observational data of 30,000 patients with advanced CKD also showed the likely safety of apixaban for VTE treatment. The presenter mentioned the high rate of bleeding events in all CKD and end-stage renal disease patients with either treatment and hence the consideration of higher thresholds for treatment when considering anticoagulation for AF and prolonged VTE treatment.

Low molecular weight heparin (LMWH) and unfractionated heparin (UFH) were compared for their efficacy in treating acute VTE. A Cochrane review in 2019 reiterated that LMWH has a benefit for recurrent VTE, major hemorrhaging, and mortality over UFH, which led to the European Society of Cardiology recommending the use of LMWH over UFH for acute VTE unless there is hemodynamic instability and the possibility for primary reperfusion treatment. UFH could also be considered for serious renal impairment and severe obesity.

Some of the most important updates included the de-escalation of antiplatelet agents even after acute coronary syndrome and percutaneous coronary intervention (PCI) in cardiac patients who need oral anticoagulation for an indication. A 2020 American College of Cardiology expert consensus for patients with AF or VTE and coronary interventions recommended antiplatelet treatment be continued for one year post-PCI with use of anticoagulation therapy alone after that. Triple therapy is rarely needed, and if dual therapy is needed, P2Y12 inhibitor therapy is preferred over aspirin. This is hopefully something that percolates into practice soon. A lower proportion of patients will need to be on an antiplatelet agent if an oral anticoagulant is already being used. This change was recommended after the AF and ischemic events with rivaroxaban in patients with stable coronary artery disease, or AFIRE, trial in 2019 revealed lower all-cause mortality of rivaroxaban compared to dual therapy in patients with AF and stable coronary disease.

The talk concluded by discussing multiple systematic reviews of off-label DOACs in atrial fibrillation and the use of an inappropriately low dose being associated with an increase in mortality without a sizeable decrease in bleeding. This evidence suggests that using an inappropriately low dose of a DOAC in patients is likely not the right answer for most patients with AF. ■

## Key Takeaways

- VKA is the preferred therapy for patients with thrombotic antiphospholipid syndrome.
- DOACs are acceptable for patients regardless of their weight and BMI. Using VKA is preferred to DOAC for use in patients after bariatric surgery, but DOAC trough levels should be checked if used.
- The use of apixaban in patients with CKD and or hemodialysis is acceptable.
- LMWH is recommended over UFH for acute VTE treatment unless there is hemodynamic instability and need for primary reperfusion treatment, severe obesity, and severe renal impairment.
- Most antiplatelet agents can be stopped safely one year after acute coronary syndrome and PCI in patients who need anticoagulation.
- Off-label underdosing of DOACs in patients with AF has been associated with increased mortality and is thus not recommended.

Dr.Mehta

*Dr. Mehta is an academic hospitalist and medical director, an assistant professor of medicine and clinical core faculty with the internal medicine residency, and has roles in quality improvement, program evaluation and improvement, and medical education at the University of Cincinnati.*

SESSION SUMMARY

# Kill the Mortality—Building Successful Inpatient Mortality Reduction Programs in Academic and Rural Health Systems

**Presenters: Shyam Odeti, MD, FAAFP, MBA, SFHM, and Mangla S. Gulati, MD, FACP, SFHM**

**Summary Author: Venkat P. Gundareddy, MBBS, MPH, FACP, SFHM**

The session began with a clear statement of its objectives, focusing on how quality programs view mortality, the methodology behind it, approaches to reduce mortality, and the impact hospitalists can have on it through programmatic interventions.

After engaging the audience in understanding mortality from a provider standpoint and having a patient perspective, the speakers went on to talk about how various quality-rating programs viewed mortality. With a better understanding of the various time frames, patient populations, measures, metrics, and indicators used by the different quality-rating programs for mortality, the speakers went on to talk about metrics around the Centers for Medicare & Medicaid Services Star Rating, Leapfrog Hospital Safety Grade, Vizient Quality and Accountability Study, and others, and their financial implications for hospitals.

Spending time on methodology, the audience was invited to explore how Diagnosis Related Groups (DRGs) work and the role of hospitalists in how their documentation impacts mortality metrics. Hospitalists could be involved in improving mortality for their hospitals through better documentation, and by participating in mortality-reduction programs and quality-improvement efforts.

Emphasizing the interventions around documentation that would better capture risk variables such as admission source, malnutrition, or condition(s) present on admission, the speakers made a case for increasing the expected mortality, thus overall reducing observed-over-expected mortality. Other strategies aimed at better capturing comorbidities would aid in the same.

Moving on to multidisciplinary approaches such as a mortality review committee which would, in a just-culture environment, look at deaths in the hospital. From the work done at their facilities examples were shared as to how early identification of sepsis and the use of order sets were used to decrease mortality.

When discussing how observation stays and general inpatient hospice care could be used by hospitals to improve their mortality rates, the presentation highlighted how their institutions used these approaches to impact mortality rates positively. This information provided the audience with practical tools they could implement at their own facilities.

The talk provides two viewpoints—one from a rural health system and another from a large, urban, academic, medical center. While there are overlaps in the understanding of the problem at hand, this distinction allows for viewing interventions through a different lens. The financial impact of mortality metrics on institutions was also touched upon from these viewpoints. ■

Dr. Gundareddy

*Dr. Gundareddy is a hospitalist and assistant professor at the Johns Hopkins School of Medicine and the physician advisor and associate director for the division of hospital medicine at Johns Hopkins Bayview Medical Center, both in Baltimore.*

SESSION SUMMARY

# Opioid Use Disorders in Adolescents

**Presenter: Lee Trope, MD, MS**

**Summary Author: Vanessa McFadden, MD, PhD, SFHM**

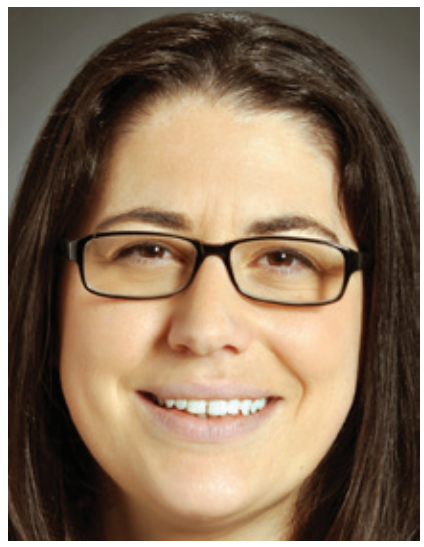
Dr. Trope, a pediatric hospitalist at Santa Clara Valley Medical Center in San Jose, Calif., and an affiliated clinical instructor at the Lucille Packard Children's Hospital at Stanford University in Stanford, Calif., started the presentation by orienting attendees to the opioid use epidemic in the U.S., including sharing relevant history to provide context for the current crisis. She then specifically focused on the epidemiology of overdose deaths in young people. This included how these deaths have been dramatically impacted by fentanyl, with fentanyl now being responsible for 90% of all overdose deaths in teens. Additionally, there is an increasing ability to buy counterfeit pills on social media, with approximately 60% of pills in circulation containing potentially lethal doses of fentanyl.

In 2021, overdose deaths among 10-19-year-olds typically occurred at home (60%), with someone else also at home 67% of the time. In these cases, the teenager was pulseless by the time emergency medical services arrived (60%), and naloxone was given in fewer than one in three overdose deaths. Dr. Trope used these facts to introduce the idea of "the new drug talk" and emphasize the importance of equipping teens with information for themselves and their friends.

The remainder of the time was spent examining the role of screening and treatment for young people with opioid use disorder (OUD). Even though OUD is typically a pediatric-onset condition (two out of three adults with OUD report first use before age 25, and one out of three before age 18), only a minority of youth with OUD are diagnosed. Even fewer receive any treatment, and fewer still are started on medication approved to treat OUD. Dr. Trope made a compelling argument that pediatric hospitalists have a unique opportunity to treat, screen, and address OUD in teens.

Dr. Trope highlighted the medications available to treat OUD and the reasoning for using these medications, including that they save lives. Buprenorphine is a first-line OUD treatment for teens, which reduces overdose and all-cause mortality, but fewer than 5% of teens with OUD have timely access. Dr. Trope shared her experience starting a buprenorphine induction protocol at her institution where youth are admitted to their hospitalist service for induction. The Clinical Opioid Withdrawal Scale assessment is used to assess withdrawal symptoms and naloxone is available at the bedside on admission for the patient to take with them (in case they decide to leave early). She encouraged attendees to reach out to her for more information or with any questions.

Dr. Trope closed by encouraging practitioners to familiarize themselves with the principles of overdose prevention and harm reduction, as well as ways to reduce the stigma surrounding OUD. ■



Dr. McFadden

*Dr. McFadden is a pediatric hospitalist and associate section chief at the Medical College of Wisconsin in Milwaukee. She is also vice chair of SHM's pediatrics special interest group executive council.*

SESSION SUMMARY

# Pediatric Update: Top 10 Articles of 2023

**Presenters and Summary Authors: Jaclyn Vargas, MD, and Merritt ten Hope, DO**

The year 2023 brought us waves of advances in technology, increasing vaccine hesitancy, an ongoing behavioral-health crisis, and civil unrest overseas which continues to echo throughout the world.

Pediatric hospitalists witness first-hand how these circumstances impact the breadth of disease processes in childhood and beyond. Hospitalists are at the forefront of addressing issues that often spread beyond the hospital in caring for this vulnerable population.

In this update, we aimed to highlight work relevant to newborn through adolescent care stages, to reflect on pertinent areas for future research in the field of pediatric hospital medicine, and to recognize how social factors contribute to the health and well-being of hospitalized children.

In this article, we identify the top 10 publications in pediatric hospital medicine for 2023, as presented at the Pediatric Update at SHM Converge 2024 in San Diego. Four of those articles are summarized here.

## Eat, sleep, console approach or usual care for neonatal opioid withdrawal

Young L, Ounpraseuth ST, et al. Eat, sleep, console approach or usual care for neonatal opioid withdrawal. *N Engl J Med*. 2023;388(25):2326-37.

**Background:** Treatment for neonatal opioid withdrawal syndrome in the past depended on subjective, observer-scored systems. There were concerns that these systems overestimated the need for pharmacologic therapies.[1] The Eat, Sleep, Console Care Tool assesses the infant's ability to eat, sleep, and be consoled with nonpharmacologic interventions before administrating medications.

**Findings:** A multicenter, stepped-wedged, cluster-randomized controlled trial was conducted at 26 U.S. hospitals in the ACT NOW Collaborative. During the first trial period, all infants with neonatal opioid withdrawal syndrome were treated according to usual care practices at their site. After training and implementation of the new protocol, infants with opioid withdrawal were cared for using the Eat, Sleep, Console Care Tool. The mean length of time from birth until medical readiness for discharge was shorter in the eat, sleep, console group (8.2 days) than in the usual-care group (14.9 days) with an adjusted mean difference of 6.7 days (95% confidence interval [CI], 4.7 to 8.8) The infants in the eat, sleep, console group saw a reduction in pharmacologic therapy to 19.5%, compared to 52% in the usual-care group.

Practice implications— Infants with neonatal opioid withdrawal syndrome treated according to the eat, sleep, console approach have significantly reduced time to readiness for discharge, likely due to the decrease in pharmacologic therapy. There were no safety concerns compared to usual care during the hospitalization and in the three months following birth. Further adoption of this protocol by hospitals can continue to ensure the safety of this approach and provide more longitudinal data.

## Child opportunity index and rehospitalization for ambulatory care sensitive conditions at US children's hospitals

Parikh K, Lopez MA, et al. Child opportunity index and rehospitalization for ambulatory care sensitive conditions at US children's hospitals. *Hosp Pediatr*. 2023;13(11):1028-37.

**Background:** The child opportunity index (COI) measures neighborhood factors that contribute to a child's ability to thrive.[2] Ambulatory care sensitive conditions (ACSC) are those for which the risk of hospitalization can be decreased when children receive effective outpatient healthcare. Social and economic factors are associated with healthcare utilization for ACSC, but limited research currently exists regarding rehospitalization trends for ACSC based on COI.[3] This study aimed to examine the association between COI and rehospitalizations for ACSC.

**Findings:** This retrospective cohort study used the pediatric health information system (PHIS) database to identify children under 18 years old with hospitalizations for ACSC in 2017-2018. They collected COI information and examined the proportion of children from different COI levels with rehospitalizations for ACSC within one year; 184,478 children were hospitalized for ACSC during the study timeframe. After adjusting for age, sex, complex medical conditions, and mental health diagnoses, 18.7% of patients from very low COI neighborhoods had rehospitalizations within one year for ACSC, compared to 13.5% of children from very high COI neighborhoods, a statistically significant difference. Patients from very low COI neighborhoods had an adjusted odds ratio of 1.14 for readmission within one year, and 1.51 for two or more readmissions within one year, compared to patients from very high COI neighborhoods.

Practice implications—Readmissions for ACSC were significantly higher for children from lower-opportunity neighborhoods. Childhood health depends on multiple factors that go beyond their primary practitioners, including those influenced by healthcare systems and patients' environments. This study highlights opportunities to improve health outcomes and reduce preventable healthcare utilization for children living in low-opportunity neighborhoods by incorporating COI data into clinical practice, partnering with community programs, and examining the role that each individual COI factor plays in health and healthcare utilization.

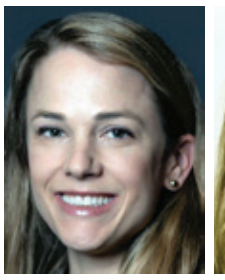
## Medical child welfare task force: A multidisciplinary approach to identifying medical child abuse

Vega S, Nienow SM, et al. Medical child welfare task force: A multidisciplinary approach to identifying medical child abuse. *Pediatrics*. 2023;151(2):e2022058926. doi: 10.1542/peds.2022-058926.

**Background:** Medical child abuse (MCA) is a form of child abuse in which caregivers invent, exaggerate, or induce symptoms in a child resulting in harmful medical care.[4] MCA is associated with high morbidity and mortality and can be extremely difficult to diagnose.[5] Following a long-standing case of MCA in the healthcare system associated with this article, an MCA Welfare Taskforce was created. The process of creation and implementation of the task force, as well as pertinent outcomes thus far, are summarized in this article.

**Findings:** A root-cause analysis before task force creation identified that inadequate knowledge about the recognition and management of MCA, insufficient collaboration among involved practitioners, and lack of effective means to communicate or track concerns in the electronic health record were the most pressing deficits in management of the sentinel MCA case. To assist with ongoing case identification and management, education was provided to clinicians about recognizing indicators of MCA, a dashboard was created to track and communicate about patients with concern for MCA, and frequent team meetings were held to discuss cases and develop management plans. From 2019 to 2022, 44 cases were reviewed by the task force, of which 15 patients were diagnosed with MCA and 14 with overutilization of healthcare. Twenty-two patients were referred to child protective services—seven had resolutions of symptoms after removal from the home, and 15 underwent safety monitoring while the medical team de-escalated care. Most practitioners who interacted with the task force felt their ability to recognize and manage MCA improved and that the task force was beneficial to them and their patients. However, most physicians also felt they would benefit from ongoing education on the topic.

Practice implications— This article highlights three main areas of focus for improving care for patients who are victims of MCA, with the first being education. It is imperative that all pediatric practitioners familiarize themselves with indicators of MCA, as its diagnosis is complex and requires the input of a patient's entire medical team. The second area of focus is communication. We must communicate concerns with other practitioners, including those in the outpatient setting and other healthcare systems when there is a concern for MCA, as this is often the only way to see the bigger picture of healthcare misuse. Finally, as there are often no dedicated resources or funding to see to MCA cases, the authors of this article express hope that their work will influence other institutions to take on similar efforts and advocate for the means to care for children who are victims of MCA.



Dr.Vargas

Dr. ten Hope

*Dr. Vargas is a medicine-pediatrics hospitalist and clinical assistant professor at the University of California San Diego. She works as a pediatric hospitalist and inpatient eating disorder hospitalist at Rady Children's Hospital–San Diego and as a medicine hospitalist at VA San Diego Healthcare System where she serves as the nocturnist supervisor. Dr. ten Hope is a second-year pediatric hospital medicine fellow at Phoenix Children's Hospital in Phoenix. She will be staying on as faculty in the hospital medicine division starting in August of 2024.*

### Bivalent prefusion F vaccine in pregnancy to prevent RSV illness in infants

Kampmann B, Madhi SA, et al. Bivalent prefusion F vaccine in pregnancy to prevent RSV illness in infants. *N Engl J Med*. 2023;388(16):1451-64.

**Background:** Respiratory syncytial virus (RSV) is the most common cause of acute lower respiratory tract illness. Particularly in low- and middle-income countries, RSV is one of the leading causes of death in infants less than six months of age.[6,7] The bivalent RSV prefusion F protein-based vaccine was trialed for safety in women during their second and third trimesters, but the efficacy of preventing RSV-associated infections in their infants had not yet been studied on a large scale.[8]

**Findings:** This double-blind, randomized, placebo-controlled trial took place in 18 countries over four RSV seasons. In the study, women who were 24 to 36 weeks pregnant were given either the bivalent RSV prefusion F protein-based vaccine or the placebo. Within 90 days after birth, six infants of mothers in the vaccine group compared to 33 infants of those in the placebo group had medically attended, severe, RSV-associated, lower respiratory tract illness (vaccine efficacy, 81.8%; 99.5% confidence interval [CI], 40.6 to 96.3). Within 180 days after birth, there were 19 cases of severe, RSV-associated, lower respiratory tract illness in the vaccine group compared to 62 cases in the placebo group (vaccine efficacy, 69.4%; 97.58% CI, 44.3 to 84.1).

Practice implications—Infants whose mothers received the RSV vaccine had a greater reduction in severe RSV-associated lower respiratory tract infections. While the use of nirsevimab, an anti-RSV monoclonal antibody, also reduces rates of medically attended RSV-associated lower respiratory tract infections, it is not widely available.[9] With the help of the RSV vaccine, there is hope for a greater reduction in RSV-associated hospitalizations and deaths worldwide.

### Remaining top-10 articles

Tweet M, Nemanich A, et al. Pediatric edible cannabis exposures and acute toxicity: 2017-2021. *Pediatrics*. 2023;151(2):e2022057761. doi: 10.1542/peds.2022-057761. This study evaluates trends in pediatric cannabis edible ingestions in children younger than age 6 with regard to toxicity, medical outcome, and healthcare utilization for the years 2017-2021.

Shaikh N, Lee S, et al. Support for the use of a new cutoff to define a positive urine culture in young children. *Pediatrics*. 2023;152(4):e2023061931. doi: 10.1542/peds.2023-061931. Conventional urine culture selects for a narrow range of organisms that grow well in aerobic conditions. In contrast, examination of bacterial gene sequences in the urine provides a relatively unbiased evaluation of the organisms present. Thus, by using 16S ribosomal ribonucleic acid gene amplicon sequencing as the reference standard, we can now assess the accuracy of urine culture in diagnosing urinary tract infections.

Rajbhandari P, Glick AF, et al. Linguistic services for hospitalized children with non-English language preference: A PRIS network survey. *Hosp Pediatr*. 2023;13(3):191-203. Linguistic services are critical to providing equitable healthcare for families with non-English language preference (NELP). Despite evidence of provider disuse and misuse of linguistic services and resultant adverse outcomes, few studies have assessed the practices of pediatric hospitalists related to the use of linguistic services. This study's objectives were to evaluate the current practices of communication and linguistic services used by pediatric hospitalists for hospitalized children with NELP and the barriers encountered in their use.

Miyata K, Bainto EV, et al. Infliximab for intensification of primary therapy for patients with Kawasaki disease and coronary artery aneurysms at diagnosis. *Arch Dis Child*. 2023;108(10):833-838. Children with Kawasaki disease and an initial echocardiogram that demonstrates coronary artery aneurysms (CAAs, Z score ≥2.5) are at high risk for severe cardiovascular complications. This study sought to determine if primary adjunctive infliximab treatment at a dose of either 5 or 10 mg/kg, compared with intravenous immunoglobulin alone, is associated with a greater likelihood of CAA regression in patients with Kawasaki disease with CAA at the time of diagnosis.

Breuner C, Alderman EM, et al. The hospitalized adolescent. *Pediatrics*. 2023;151(2):e2022060647. doi: 10.1542/peds.2022-060647. This clinical report provides pediatricians with evidence-based information on developmentally appropriate, comprehensive clinical care for hospitalized adolescents, including opportunities and challenges facing pediatricians when caring for specific hospitalized adolescent populations.

Kooiman L, Blankespoor F, et al. High-flow oxygen therapy in moderate to severe bronchiolitis: a randomised controlled trial. *Arch Dis Child*. 2023;108(6):455-60. High-flow oxygen therapy is being used increasingly in infants with bronchiolitis, despite a lack of convincing evidence of its superiority over low-flow. This study aimed to compare the effect of high-flow to low-flow in moderate to severe bronchiolitis. ■

### References


1. Wachman EM, Houghton M, et al. A quality improvement initiative to implement the eat, sleep, console neonatal opioid withdrawal syndrome care tool in Massachusetts' PNQIN collaborative. *J Perinatol*. 2020;40(10):1560-9.
2. Acevedo-Garcia D, Noelke C, et al. Racial and ethnic inequities in children's neighborhoods: evidence from the new Child Opportunity Index 2.0. *Health Aff (Millwood)*. 2020;39(10):1693-701.
3. Krager MK, Puls HT, et al. The Child Opportunity Index 2.0 and hospitalizations for ambulatory care sensitive conditions. *Pediatrics*. 2021;148(2):e2020032755. doi:10.1542/peds.2020-032755.
4. Roesler T, Jenny C. *Medical child abuse: beyond Munchausen syndrome by proxy*. Elk Grove Village, Ill.: American Academy of Pediatrics; 2008. doi: 10.1542/9781581105131
5. Flaherty EG, Macmillan HL, et al. Caregiver-fabricated illness in a child: a manifestation of child maltreatment. *Pediatrics*. 2013;132(3):590-7.
6. Li Y, Wang X, et al. Global, regional, and national disease burden estimates of acute lower respiratory infections due to respiratory syncytial virus in children younger than 5 years in 2019: a systematic analysis. *Lancet*. 2022;399(10340):2047-64.
7. Wildenbeest JG, Billard M, et al. The burden of respiratory syncytial virus in healthy term-born infants in Europe: a prospective birth cohort study. *Lancet Respir Med*. 2022;11(4):341-53.
8. Simões EAF, Center KJ, et al. Prefusion F protein-based respiratory syncytial virus immunization in pregnancy. *N Engl J Med*. 2022;386(17):1615-26.
9. Hammitt LL, Dagan R, et al. Nirsevimab for prevention of RSV in healthy late-preterm and term infants. *N Engl J Med*. 2022;386(9):837-46.


SESSION SUMMARY

# The Kinetic Life: Your Power to M.O.V.E. Through Change with Intention

**Presenter: Parul Somani**

**Summary Author: Amanda Green, MD, FACP, HMDC, CPPS, SFHM**

"One day you will share the story of where you are today and how you overcame it, and it will become someone else's survival guide." Brene Brown (via Parul Somani)

Parul Somani is a mindset expert who shared advice on how to overcome mental fatigue associated with uncertainty and challenges in our lives. She offered a step-by-step guide to embrace change, make hard decisions, and thrive with intention—to become a "MOVE-r."

A survivor of breast cancer, she uses her story to become a survival guide to others. She offered a four-part framework to move forward with intention when facing an issue with which we struggle. A mover is proactive and clear in their intentions. While we cannot be movers in all areas, we can choose which areas are most important in life and choose to be a mover with intention in those areas. She advised us to think about where we are and where we want to be, and then **M**obilize to the goal.

Ms. Somani asked the audience to consider their locus of control, and to recognize if they have an external "things happen to me" or internal "I make things happen" mind set. If one recognizes an external locus of control, she advised us to break free from this mental trap (**O**vercome): Seize control of the situation (she shaved her head when losing her hair during her treatment), reframe the situation (her first scary day of chemotherapy became the first day her tumor would shrink), and let go (What do you hold on to that does not serve you anymore?). She noted we have large circles of concern—the things we worry about—but a very small circle of control within that circle of concern. The things we can control are our own thoughts, decisions, and choices.

When making difficult choices on the **V**oyage, she ultimately recommended asking the question, "What is my path of least regret?" What are you optimizing for, what are the options and their relative tradeoffs, and which path forward will provide the greatest peace of mind when you look back?

The "E" in MOVE is for **E**levate. To thrive and create meaning, she advised nurturing accountability, allowing for detours (maybe the path of least regret changes), and celebrating the wins. ■

SESSION SUMMARY

# Pneumonia: Updates, Best Practices, and Controversies

**Presenter: Joanna M Bonsall, MD, PhD, SFHM**

**Summary Author: Justin Miller, MD, FACP, FHM**

In this clinically focused session, Dr. Joanna M Bonsall, associate professor at Emory University School of Medicine and hospitalist at Grady Memorial Hospital in Atlanta, discussed portions of the 2019 Infections Diseases Society of America (IDSA)/American Thoracic Society (ATS) community-acquired pneumonia (CAP) guidelines relevant to hospitalist practice. There was also discussion of new evidence in the diagnosis and management of pneumonia as well as some continued areas of uncertainty.

The diagnosis of pneumonia can be challenging, especially when there is an atypical patient presentation or when a chest X-ray is inconclusive. In such settings, additional imaging can help make the diagnosis. The optimal next test would be a lung ultrasound, due to the lack of radiation exposure and quick assessment by a skilled clinician. Studies have shown that sensitivity and specificity are equal to that of a computed tomography (CT) scan. However, it was recognized that this was not always readily accessible due to insufficient training or comfort in bedside ultrasound. In such cases, a chest CT is the next best test. This is probably the closest to the gold standard and can be very helpful in cases of intermediate probability.

Procalcitonin is another tool that is sometimes used to differentiate intermediate-probability cases of pneumonia. However, a meta-analysis of 2,408 patients with known CAP showed a sensitivity of 0.55, and a specificity of 0.76.[1] There are no studies that show a benefit of biomarkers versus clinical signs on antibiotic initiation in hospitalized patients with pneumonia. There is evidence demonstrating a decrease in antibiotic duration (without any clinical differences), but all studies have shown procalcitonin-guided antibiotic reduction at or above the current recommended guidelines for antibiotic duration. There may be some benefits in patients from the community, considering the prolonged antibiotic course, and it could have some antimicrobial stewardship benefits .

Molecular assays are also becoming available, although still limited in uptake. One such molecular assay, the BioFire, showed a negative predictive value from 92% to 100%, but with a positive predictive value of 5% to 100%. These do give rapid results and may give some resistance gene variants. A few small studies have shown savings and decreasing antibiotic use. However, the positive predictive value is very low for the molecular assays and they do not have full representation of bacteria.

When hospitalists are faced with the decision of where to admit, it is recommended to use a validated clinical-prediction rule to determine treatment location. The Pneumonia Severity Index, or PSI, is the preferred test as it is better studied, and also tends to identify more patients as low-risk, than the CURB-65 (Confusion, Urea, Respiratory rate, Blood pressure, age 65 or older) criteria.

For determining the severity of illness for a pneumonia patient it is recommended to use the 2007 IDSA/ATS severity clinical criteria. In non-severe CAP, combination therapy with beta-lactam antibiotics and macrolide or monotherapy with a respiratory fluoroquinolone is recommended. In severe CAP, the recommended therapy is combination therapy with beta-lactam antibiotics and either a macrolide or a respiratory fluoroquinolone.

Doxycycline has been shown to be equivalent therapy to a macrolide in mild to moderate CAP. Patients who had a previous *C. difficile* infection had a lower risk of a recurrent infection on ceftriaxone plus doxycycline than patients who received ceftriaxone plus azithromycin.

Patients require antibiotic coverage for *Pseudomonas* and methicillin-resistant *Staphylococcus aureus* (MRSA) if they had a previous hospitalization within 90 days and/or intravenous antibiotic usage, previous infections with high-risk gram-negative rods or *Staphylococcus aureus*, with coordination of local risk factors to guide antibiotic usage. If initial antibiotics will cover these organisms, it's recommended to get pretreatment sputum and blood cultures as well as a MRSA nasal swab to help with de-escalation. Otherwise in non-severe CAP without risk factors for MRSA and pseudomonas, it's not recommended to order blood and sputum cultures.

The clinical scoring system called Drug Resistance In Pneumonia, or DRIP, showed a higher sensitivity and specificity for antimicrobial resistance than the previous health care-associated pneumonia, or HCAP, criteria.[2] This study showed using the Drug Resistance In Pneumonia score reduced the use of antipseudomonal antibiotics by 8.9% and the use of vancomycin by 16.9% compared to health care-associated pneumonia criteria.

The duration of antibiotics should be a total of five days for resolving CAP or for three days after clinical stability. Studies suggest that we overtreat pneumonia. One study of 6,481 patients showed that 71.8% of the patients received excessive antibiotic therapy and 93.2% completed their therapy as an outpatient. As might be expected, excessive therapy was associated with antibiotic-associated adverse events.

Recent articles have been published that may change clinical practices. One of the most significant publications described a randomized controlled trial of the use of steroids in severe CAP. Patients who received a continuous infusion of hydrocortisone of 200 mg/day for four to seven days followed by an eight- to 14-day taper had significantly lower mortality at 28 and 90 days.[3] There was an increase in hyperglycemia, but no other differences in adverse events. Given the mortality benefit and low risk, it should be strongly considered to use early hydrocortisone in patients with severe CAP.

Notably, the populations that were excluded from this study included patients who had nosocomial pneumonia, were immunocompromised, or had a recent gastrointestinal bleed, influenza, uncontrolled diabetes, or uncontrolled psychiatric symptoms. Another study from a few months ago looked at anaerobic coverage in aspiration pneumonia. This study excluded patients with pulmonary abscesses. It found that extended anaerobic coverage had no mortality benefit but did have an increased risk of *C difficile* colitis.[4] ■

## Key Takeaways

- Strongly consider hydrocortisone in patients with severe CAP.
- Consider using doxycycline in nonsevere CAP, particularly in patients with a history of C Difficile.
- Do not routinely use anaerobic coverage in aspiration pneumonia.

> *"Doxycycline has been shown to be equivalent therapy to a macrolide in mild to moderate community-acquired pneumonia."*

Dr. Miller

*Dr. Miller is an associate professor of medicine and vice-section chief of hospital medicine at the University of New Mexico in Albuquerque, N.M.*

## References

1. Kamat IS, Ramachandran V, et al. Procalcitonin to distinguish viral from bacterial pneumonia: a systematic review and meta-analysis. *Clin Infect Dis*. 2020;70(3):538-42.

2. Webb BJ, Dascomb K, et al. Derivation and multicenter validation of the Drug Resistance in Pneumonia clinical prediction score. *Antimicrob Agents Chemother*. 2016;60(5):2652-63.

3. Dequin PF, Meziani F, et al. Hydrocortisone in severe community-acquired pneumonia. *N Engl J Med*. 2023;388(21):1931-41.

4. Bai AD, Srivastava S, et al. Anaerobic antibiotic coverage in aspiration pneumonia and the associated benefits and harms: a retrospective cohort study. *Chest*. 2024;20:S0012-3692(24)00260-5. doi: 10.1016/j.chest.2024.02.025.

SESSION SUMMARY

# Shark Tank

**Summary Author: Venkat P. Gundareddy, MBBS, MPH, FACP, SFHM**

Shark Tank was an innovative session where hospitalists competed in the space of innovation to improve care for their patients. The winner received a cool trophy, bragging rights, and, more importantly, mentorship for their project.

Moderator Angela Keniston, PhD, MSPH, led the session in which Ian Fagan, MD, Gilmer Rodriguez, MD, MPH, MMM, CPE, and Tokhanh Nguyen, MD, FHM, were judged by Sharks Thomas Barrett, MD, MCR, FACP, SFHM, Jennifer Myers, MD, and Pallabi Sanyal-Dey, MD, FHM.

Sharks heard the competitors' pitches and provided them valuable insights into improving their projects.

Patients being kept nil per os (NPO) for long periods before procedures is a daily occurrence in hospitals. Dr. Fagan and his team looked at the science behind this practice and found it's an antiquated practice still rampant across the country. This practice has direct patient harm and is not in line with the latest guidelines. Using current guidelines, the team and came up with a solution that was integrated into electronic health records [EHR]. The NPO time was adjusted to 5 a.m. and 10 a.m. based on when patients were going for procedures. This avoided placing patients on NPO orders from the night before, irrespective of the procedure time. This was followed by educational initiatives to avoid unnecessary fasting before procedures and an ask to use the new EHR orders that were evidence-based. Their intervention showed an increase from 5.9% to 18.6% use of new EHR orders for internal medicine patients. The ask from the Sharks was mentorship in the design and implementation of an awareness campaign to increase uptake even more across the hospital.

Dr. Rodriguez's group shattered readmissions and emergency return visits through transitional care innovations. His hospital had a problem with frequent re-hospitalizations and emergency department (ED) visits resulting in an overall increase in resource utilization. The value proposition included patient-centered transition services to combine high-quality outcomes at affordable costs. The team came up with a post-discharge clinic business model by the hospitalists. This post-discharge clinic followed patients until they were handed over to the primary care physician. This helped reduce readmissions and ED visits while enhancing transitional care. The ask from the Sharks was to help come up with other strategies to further improve outcomes at his hospital.

Dr. Nguyen and her team developed a patient distribution tool. The problem at hand was assigning patients to practitioner teams while ensuring geographic co-location, avoiding inconsistencies, and more importantly reducing this non-clinical work burden on hospitalists. All this was necessary while considering the various specifics of patients, clinicians, and the floors they were going to. Given the size of their hospital and the large number of services and floors, this was taking up a lot hospitalists' time (as much as 150 minutes). Using patient information, team availability, and decision rules for location and service, the team came up with an algorithmic approach. The data regarding the teams and patients to be assigned would be stored in a separate file. A statistical tool would process the data and generate the assignment output. This approach helped them put the right patient with the right team, removed clinician-to-clinician inconsistencies, and saved up to two hours a day of non-clinical work for hospitalists. The ask from the Sharks was mentorship in improving user adoption, an alternate platform for the algorithm to run on, and integration into electronic health records.

After questioning the competitors, the Sharks deliberated and named Dr. Fagan and his project on reducing unnecessary prolonged NPO for pre-procedural patients the winner of this year's Shark Tank. ■

SESSION SUMMARY

# Put Me in, Coach! The Essentials of Physician Coaching in Healthcare

**Session Presenters: Leah Jones, MD, FAAP, Alyssa Stephany, MD, MS, PCC, Christopher Russo, MD, MBA, CPE, FAAP, and Justin Boer, MD, FAAP**

**Summary Author: Elizabeth Herrle, MD, FACP, FHM**

"We're not going to bore you!" Dr. Stephany, director of physician-provider organization support, clinical academic departments, and the leadership center for physicians at Children's Mercy Kansas City, and an associate professor at the University of Kansas School of Medicine and the University of Missouri-Kansas City School of Medicine, Kansas City, Mo., promised as she popped from table to table welcoming participants to the "Put Me in, Coach!" session.

The goal of this session was to help hospitalists incorporate coaching skills into their daily work by developing practical skills for having authentic coach-like conversations.

Many health systems are starting to invest in formal coaching programs for physicians and advanced practice practitioners. These robust, formal coaching programs require significant investment in time, coach training, and culture, but can have impressive results. The return on investment for institutions that invest in formal physician coaching programs has been demonstrated in financial terms ($85 million in estimated physician retention at Cleveland Clinic) and through improving clinician engagement and wellness.

Even without a formal coaching program, many coaching skills can be incorporated into everyday leadership for hospitalists. Coaching can help hospitalist groups reach additional key goals including increased productivity, smoother onboarding, leadership development, and team building.

## Key Takeaways

- Many conversations in hospital medicine lend themselves to a coach-like approach.
- Coaching requires a mindset shift away from diagnosing problems and providing solutions, and toward thoughtful questions, active listening, and exploring options.
- Trust and authenticity are key to a successful coaching relationship. Coaches should always prioritize psychological safety, reliability, and active listening.

The following advice can help as you begin your journey to becoming more coach-like.

### Understand what makes coaching unique

Coaching is a ubiquitous term that is often conflated with other roles like mentorship, sponsorship, and advising. One of the top credentialing bodies for professional coaches, the International Coaching Federation, defines coaching as "a thought-provoking creative process that inspires them [coachees] to maximize their personal and professional potential." Professional coaching differs from other roles in its focus on the process of discovery and the key role of the coachee in identifying their own path forward.

### Identify conversations well-suited to coaching

In general, the conversations that are ideal for a coaching approach are complex conversations with multiple possible paths forward where the coachee(s) can affect their situation by making a decision, changing a behavior, or challenging one of their perceptions. For example: a junior faculty member who is struggling with work-life balance and comes to you asking for advice is probably better served by a coaching approach, where you ask them a series of thoughtful questions to help them understand their values and identify their own strategies to improve their situation.

### Know when coaching is not the right tool

While coaching is a wonderful thing, it's just one of many communication tools and is not the right tool for every conversation. Coaching is intended for situations where there's time to reflect and discover a path forward with the interests of the coachee as the priority. If you have a vested interest in the results of a conversation that conflicts with the other person's interests, a more transactional form of communication is likely the better choice.

### Adopt a coaching mindset

In our daily work, most hospitalists are in a clinical mindset that is focused on gathering data to identify an objectively correct diagnosis and provide the best treatment to our patients based on our knowledge and judgment. The coaching mindset requires a different frame. A successful coach asks thoughtful questions, listens deeply, and supports the coachee as they uncover their own insights, ideas, and action steps.

### Ask the right questions

Ideal coaching questions are open-ended, succinct, and exploratory. If you ask questions as a coach and the answers don't surprise you, you may need to rethink your questions. Ask questions that welcome broader thinking like "What other options do you have here?" and "Who can support you in this work?" There are many great resources, including the slides from this talk, with examples of other powerful coaching questions.

### Prioritize authenticity

As with most high-level communication, authenticity and trust are paramount in coaching. By maintaining a focus on authenticity in your coaching conversations, you can ensure that you are able to engage and empower your coachee in a way that allows the necessary space to challenge current patterns of thinking and open the door for new insights and ideas.

### Build trust through psychological safety

While coaching tools can be incorporated into many types of conversations, an ideal coaching relationship is longitudinal and supported by significant trust. To build trust, coaches should focus on behaviors that demonstrate credibility and reliability. Great coaches are also intentional about creating an environment with high psychological safety so that there is an intimacy to the coaching conversation in which the coachee can explore challenges without judgment. Be sure to check your biases and to assume best intent throughout your coaching.

### Talk less, listen more

One thing that erodes trust in a coaching conversation is a coach who is oriented to themselves rather than the coachee. Reducing our tendency to share our own experiences and advice is often one of the hardest but most important aspects of developing as coaches.

Dr. Herrle

*Dr. Herrle is an adult hospital medicine physician at Maine Medical Center, and associate medical director of professional development for the division of hospital medicine and medical director of clinical informatics for MaineHealth, both in Portland, Maine. She is a certified executive coach who loves helping people reach their potential through coaching.*

### Stay curious

Once you can identify opportunities for coach-like conversations, embrace your curiosity. It's easy to quickly make a "diagnosis"—but avoid premature closure! The best thing about coaching is that it's highly flexible and individualized. Respecting the individual, their values, and their goals will help you provide a wonderful space for others to work through their own challenges.

### Finish strong

As you conclude a coach-like conversation, incorporate some powerful closing questions to ensure action and accountability. Try asking, "What is the next step?" and, "How will you hold yourself accountable?"

By intentionally creating a space for curiosity and discovery, building trust and psychological safety, asking thoughtful questions, and making an action plan, you can excel at coach-like conversations that lead to better results for your team. And there's nothing boring about that! ■

SESSION SUMMARY

# Common Inpatient Cognitive Errors in Diagnosis and Clinical Reasoning: Practical Applications for the Hospitalist

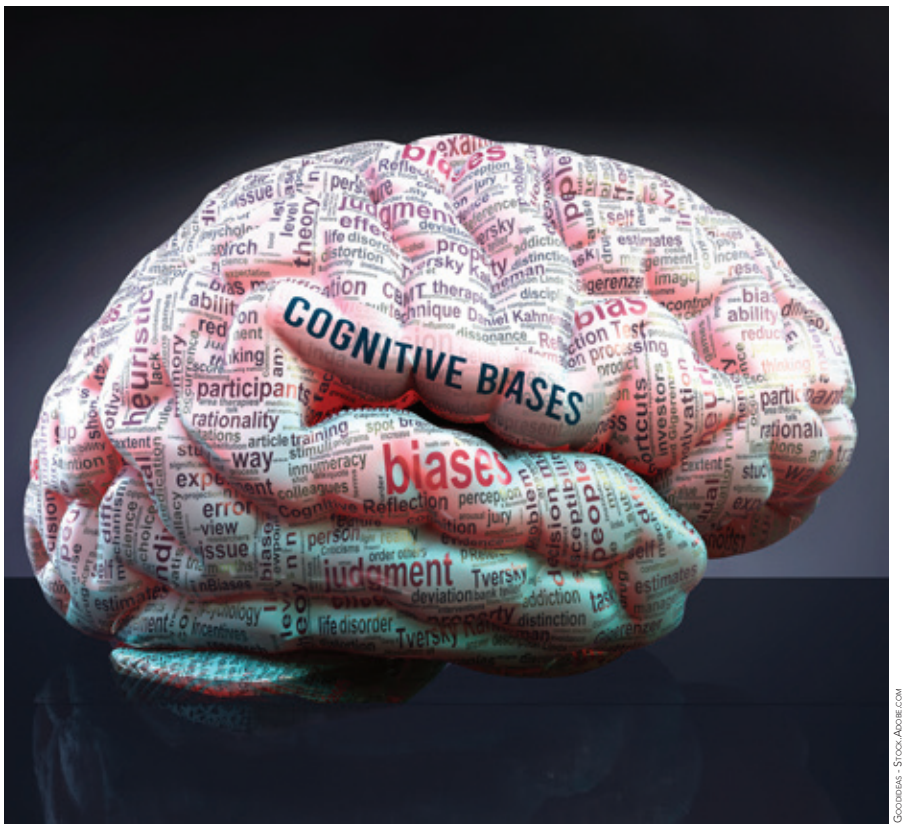
**Presenter: Daniel Restrepo, MD, FHM**

**Summary Author: Lucy Shi, MD**

Everyone has cognitive biases that can lead to errors in diagnosis and have a profound impact on patient management decisions. In this thought-provoking session, Dr. Daniel Restrepo, a hospitalist in the department of medicine and the associate program director for point-of-care ultrasound for the internal medicine residency program at Massachusetts General Hospital, and assistant professor of medicine at Harvard Medical School, both in Boston, went through heuristics, common cognitive biases, and mitigation strategies you can implement in your practice. He brought new life into these topics with relatable real-life examples.

The session started by going through two heuristics, or mental shortcuts, hospitalists take to avoid rounding in the hospital all day. The first is representativeness. If a patient presents with classic symptoms of a very rare disease, some clinicians may be tempted to go down the diagnostic rabbit hole and order a slew of tests. However, this embodies the trap of representativeness, where you identified a constellation of symptoms that seemed to fit a pattern that you recognized but forgot to consider the low probability of the disease itself. Consider this—the prevalence of cholelithiasis in adults living in the U.S. is between 175 and 685 cases per 100,000 people, whereas the prevalence of autoimmune hepatitis is estimated between 10 and 15 cases per 100,000 people in European countries. That's orders of magnitude more prevalent. In this memorable case, Dr. Restrepo ignored the base rate of disease or the pretest probability and began to look for autoimmune hepatitis because the symptoms fit so perfectly. In the end, probability won, and the patient was diagnosed with an atypical presentation of cholelithiasis. Remember that common things are common. Dr. Restrepo said it best. "Craft the differential based on pattern. Reshuffle it based on probability."

The second heuristic covered in this session was availability. When it comes to diagnosis, many clinicians have heard about availability bias. This is the idea that diagnoses that come to mind more easily are overrepresented in a clinician's thought process. For example, after just seeing a case of new anti-neutrophil cytoplasmic autoantibody (ANCA) vasculitis, subsequent patients might also start to look like ANCA vasculitis. This talk highlighted how availability bias can have a profound impact on management decisions. If a physician starts a patient with atrial fibrillation and a CHA2DS2-VASc of 6 on anticoagulation, and the patient then comes back with a massive head bleed, that physician is less likely to prescribe anticoagulation to the next patient with a CHA2DS2-VASc of 6 because their assessment of the bleeding risk is influenced by this recent experience. To combat this natural tendency, Dr. Restrepo recommends stepping back and thinking about alternative outcomes. Remember the patient who was NOT started on anticoagulation and then presented with a stroke. Play the odds. Remember the probability of outcomes.

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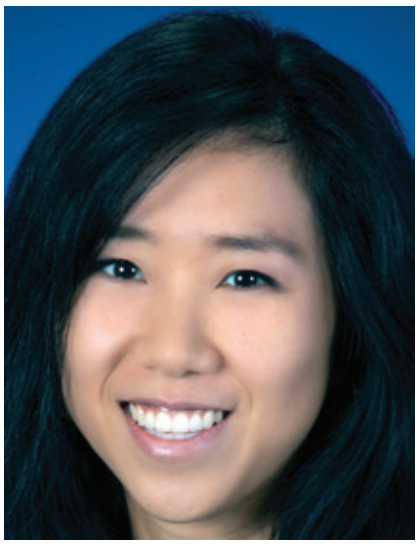
After heuristics, the session moves through six biases frequently seen in hospital medicine: anchoring, premature closure, confirmation, framing, diagnostic momentum, and search satisfying. In the context of a hospitalist's day-to-day work, for instance, once a urinary tract infection (UTI) or pneumonia is diagnosed, other diagnoses may not be considered. The search has been satisfied. However, misdiagnosis rates of pneumonia, cellulitis, and UTI are shockingly high: between 10 and 30%. That elderly patient coming in with a UTI might actually have a perforated bladder or bladder cancer. I particularly liked how Dr. Restrepo highlighted the collective tendency for "hyposkepticemia" in hospital medicine or the lack of skepticism when you take over a patient's care from a colleague, which can lead to diagnostic momentum and add to chart lore. If a colleague hands off a patient with a chronic obstructive pulmonary disease exacerbation, how often does the next hospitalist go back and look for pulmonary function tests to confirm the original diagnosis? This also ties into the framing effect and can have profound implications on a clinician's perception of the patient. If that same patient keeps coming in with a chronic obstructive pulmonary disease exacerbation, the next clinician might not recognize ischemia as the cause of the patient's progressive dyspnea on exertion.

Lastly, Dr. Restrepo covered some mitigation strategies. He went through the effortful pause, playing the odds, diagnostic frameworks, working in teams, the note, follow up, and asking why. When coming on service, use the opportunity to pause and really examine each case. Trust but verify. Consider the probability of the disease in question and play the odds. As Dr. Restrepo put it, are all these cases really zebras, or are some of them just weird-looking horses? Diagnostic frameworks are also a great tool that not only helps teach learners about diseases but also acts as an automatic checklist. Many of us have the privilege to work in teams with great colleagues who can help see the case from multiple different lenses. After rounding, when finally sitting down to write the note, take the time to craft a helpful medical note that not only documents what happened to the patient but also crystallizes your thought process and diagnostic reasoning. Follow up on patients even when you go off service and even after they leave the hospital. Sometimes, the diagnosis is not clear until much later.

Lastly, stay curious and ask why. ■



Dr. Shi

*Dr. Shi is an adult hospitalist and clinical assistant professor of medicine at UC Davis Medical Center in Sacramento, Calif. She is currently involved in medical education and curriculum development.*

## Key Takeaways

- When you first take over a patient's case, use it as an opportunity to think it through from a fresh perspective.
- Learn common diseases that are frequently misdiagnosed and examine these more closely.
- Play the odds. Don't forget about disease prevalence when crafting your differential.
- Pause and re-examine your diagnosis, especially if the clinical course isn't adding up or you're jumping through hoops to make data fit.
- When something goes wrong, try also to remember all the times it went right.
- Don't forget to ask why.

SESSION SUMMARY

# Pediatric Medical Overuse: Current Ways to Reduce Unnecessary Harm

**Presenters: Nathan Money, DO, and Danni Liang, MD**

**Summary Author: Lynn McDaniel, MD, FAAP, SFHM**

"Everything we do as physicians has downstream consequences and cost," said Dr. Nathan Money, assistant professor of pediatrics at the University of Utah in Salt Lake City, as he and Dr. Danni Liang, assistant professor of pediatrics at the University of Cincinatti, began their talk on medical overuse. They highlighted the need to avoid unnecessary interventions to prevent negative outcomes and stressed the importance of considering the value of care, which can be seen as the balance between quality and cost. This includes looking at the various benefits for the patient and their family in comparison to the direct and indirect costs, such as lost wages and stress, as well as potential indirect harms.

Drs. Money and Liang highlighted three areas of medical overuse that we should consider for de-implementing wisely—the well-appearing hypothermic infant, antibiotic duration in urinary tract infections (UTIs), and post-hospital follow-up appointments.

Dr. Money looked to the literature to review the risks of serious bacterial infections (SBIs) in well-appearing infants who present with hypothermia. He cited research showing that well-appearing infants are at low risk for SBIs and may not warrant a full sepsis evaluation.[1,2] Dr. Money's own article further highlighted that younger and preterm infants were at lower risk for SBIs than older neonates, and though these infants were at risk for an SBI, it was less so than their febrile counterparts. While more studies are needed to be able to stratify risk for these patients, it is reasonable to observe certain well-appearing infants with isolated hypothermia.

How many days of antibiotics do you prescribe for an uncomplicated urinary tract infection? Dr. Liang reviewed the recent publication of the SCOUT trial results, looking at five days versus 10 days of antibiotic therapy and children two months to 10 years of age.[3] Treatment failure rate was low, especially in those with afebrile versus febrile UTIs. It would be reasonable to consider a short course, five days of therapy, in children with early clinical improvement.

## Key Takeaways

- Well-appearing infants with hypothermia are at low risk for SBI and may not warrant a full sepsis evaluation; it is reasonable to observe certain well-appearing infants with isolated hypothermia.
- In children with uncomplicated UTIs, it is reasonable to consider a shorter course of antibiotics for patients with early clinical improvement.
- Most children with acute bronchiolitis will continue to improve after hospital discharge and as-needed post-hospitalization follow-up may lead to decreased healthcare utilization.

Most children hospitalized with bronchiolitis are otherwise well and can be expected to continue to improve after discharge from the hospital. Do all such patients require routine post-hospital follow-up with their outpatient providers? Dr. Money reviewed two articles that looked at routine post-hospitalization follow-up and post-emergency department follow-up for bronchiolitis.[4,5] Both had similar results of routine follow-up versus as-needed follow-up regarding readmissions and time to symptom resolution. However, it was noted that those with routine follow-up were more likely to have received prescriptions for albuterol, corticosteroids, and antibiotics than those with as-needed follow-up; all are medications not generally indicated for treatment of bronchiolitis. It is reasonable to recommend as-needed follow-up to decrease healthcare utilization.

*"...three areas of medical overuse... well-appearing hypothermic infant, antibiotic duration in UTIs, and post-hospital follow-up appointments."*

Dr. Liang discussed the importance of de-implementing low-value care wisely. As physicians and clinicians, we're called to evaluate the quality of the evidence so that we can increase the quality of care while decreasing patient harm and the costs of care. We should be mindful of the well-documented disparities in the receipt of high- and low-value care services, disproportionally affecting socially disadvantaged groups, such as those whose language is other than English.

He gave literature-based examples[6]:

1. Consider early transition to oral antibiotics in patients with infections such as pyelonephritis, osteomyelitis, and complicated pneumonia.
2. Discharge well-appearing febrile infants once bacterial cultures are confirmed negative for 24 to 36 hours if adequate outpatient follow-up can be assured.
3. Do not start phototherapy in well-appearing infants with neonatal hyperbilirubinemia if their levels are below levels at which the American Academy of Pediatrics guidelines recommend treatment.
4. Use narrow-spectrum antibiotics, such as ampicillin or amoxicillin for children hospitalized with uncomplicated community-acquired pneumonia.
5. Do not start intravenous antibiotic therapy on well-appearing newborns with isolated risk factors for sepsis. Instead, use clinical tools, such as an evidence-based sepsis-risk calculator, to guide management.

Lastly, Drs. Money and Liang previewed a possible list of high-yield topics for future Choosing Wisely recommendations to decrease medical overuse of such treatments as melatonin; oseltamivir in hospitalized patients; viral testing; overmedicalization of tongue ties; unnecessary admission for stable patients with pneumothorax or pneumomediastinum; unnecessary gastrostomy-tube placement; routine two-day birth hospitalization; and the dangers of proton pump inhibitor use. There are many more opportunities to study, and many opportunities to increase value and decrease harm for our patients.

Dr. McDaniel

*Dr. McDaniel is a pediatric hospitalist and associate professor, head of pediatric hospital medicine, and medical director of acute pediatrics at the University of Virginia Children's Hospital in Charlottesville, Va. She is chair of the SHM Pediatric Special Interest Group executive council.*

## References

1. Jain SB, Anderson T, et al. Serious infections are rare in well-appearing neonates with hypothermia identified incidentally at routine visits. *Am J Emerg Med*. 2023;65:1-4. doi: 10.1016/j.ajem.2022.12.008.

2. Money NM, Lo YHJ, et al. Predicting serious bacterial infections among hypothermic infants in the emergency department. *Hosp Pediatr*. 2024;14(3):153-62. doi: 10.1542/hpeds.2023-007356.

3. Zaoutis T, Shaikh N, et al. Short-course therapy for urinary tract infections in children: the SCOUT randomized clinical trial. *JAMA Pediatr*. 2023;177(8):782-9. doi: 10.1001/jamapediatrics.2023.1979.

4. Coon ER, Destino LA, et al. Comparison of as-needed and scheduled posthospitalization follow-up for children hospitalized for bronchiolitis: the bronchiolitis follow-up intervention trial (BeneFIT) randomized clinical trial. *JAMA Pediatr*. 2020;174(9):e201937. doi: 10.1001/jamapediatrics.2020.1937.

5. Shapiro DJ, Bourgeois FT, et al. National patterns of outpatient follow-up visits after emergency care for acute bronchiolitis. *JAMA Netw Open*. 2023;6(10):e2340082. doi: 10.1001/jamanetworkopen.2023.40082.

6. Tchou MJ, Schondelmeyer AC, et al. Choosing wisely in pediatric hospital medicine: 5 new recommendations to improve value. *Hosp Pediatr*. 2021;11(11):1179-90. doi: 10.1542/hpeds.2021-006037.

SESSION SUMMARY

# The Great Debate 2024: Controversies in Perioperative Medicine

**Presenters: Edie Shen, MD, FHM, Steven Cohn, MD, MACP, FRCP, SFHM, Joan Irizarry Alvarado, MD, FACP, DFPM, and Kurt Pfeifer, MD, FACP, DFPM, SFHM**

**Summary Author: Natalie Klawonn, MD, FACP**

There are a great many debates in medicine. This perioperative topic lecture looked at the controversy of perioperative atrial fibrillation and a second topic of post-operative troponin screenings. The audience voted before and after to see if the presented arguments had swayed anyone's opinion. The argument put forth by the debaters was also not necessarily the opinion of the debater, though Dr. Shen nearly convinced herself during her arguments to change her own opinion.

Both topics started with a case. The case for the topic of atrial fibrillation is a 65-year-old male with a history of hypertension and non-obstructive coronary artery disease, with a good functional capacity. He takes a beta blocker and is undergoing elective, laparoscopic, bilateral, inguinal-hernia repair. He is found to have atrial fibrillation on the monitor in the preoperative area. The question is whether to cancel surgery or proceed.

Dr. Shen, a clinical associate professor of medicine at the University of Washington in Seattle, made the argument to proceed with surgery, as the patient is having a low-risk surgery, the atrial fibrillation is rate-controlled and stable, and the patient is already on a beta blocker. At this point, anticoagulation for the CHA2DS2-VASc score of 2 would be something to consider once through the surgery and recovered. Dr. Shen highlighted the SAMBA (Society for Ambulatory Anesthesia) guidelines which advise that for patients presenting for minor surgeries, it is reasonable to proceed as long as the patient is asymptomatic and hemodynamically stable. Canceling surgery will potentially make the surgeon, patient, and hospital administrators mad.

Dr. Irizarry Alvarado, an internist, lead physician, and member of the SPAQI guidelines committee at Mayo Clinic in Jacksonville, Fla., tackled the postponed-surgery argument. He highlighted that perioperative atrial fibrillation is associated with an increased risk of perioperative cerebrovascular accident and heart failure and increased 30-day mortality. He said we should get back to basics as per the 2014 American Heart Association guidelines: the presence of an arrhythmia in the perioperative setting should prompt an investigation into the underlying process. The atrial fibrillation is often a symptom of something else and that should be uncovered before proceeding with surgery.

After both arguments were made, few minds were changed on the atrial fibrillation topic, though both presenters and coaches kept the audience thoroughly engaged and entertained.

Next up were the arguments for and against checking post-op troponins in high-risk patients. The case was a 65-year-old female with a history of coronary artery disease and a left anterior descending artery stent 18 months ago who is scheduled for aortobifemoral bypass. Her revised cardiac risk index is 2.

Dr. Irizarry Alvarado tackled the "no" argument. He argued that there are many reasons for elevated troponins, not all are cardiac, and that this is usually more of an indicator of an underlying process that needs to be addressed rather than coronary disease. There is an increase in overall mortality, but the large majority are not cardiac. In fact, 55% have no identifiable cause. The checking of troponins creates an increase in cardiology consults, unnecessary testing and imaging, and intensive-care and cardiac-care transfers, while potentially complicating and lengthening the patient's hospital stay unnecessarily. A study of more than 2,000 patients found there to be the same mortality among those who had troponins measured as among those not measured. There is also the question of what to do with the results, with no clear guidelines on management. One may perhaps have a lower threshold to treat a borderline hemoglobin or perhaps check for pulmonary embolism or other underlying causes, but you are probably not going to change the overall management of the cardiac disease, which would continue to focus on secondary prevention.

Dr. Shen's "yes, just do it" argument focused on the fact that myocardial injury after non-cardiac surgery, or MINS, is common (occurring in 25% of vascular patients) and asymptomatic, and has high mortality at 19%, and we do have treatment (which would be secondary prevention). Postoperative troponin testing in high-risk patients is recommended in one form or another by the American Heart Association, European Society of Cardiology, and Canadian Cardiovascular Society. It is also recommended in UpToDate, a frequently used clinical information resource. The opposing Dr. Pfeifer (a professor of medicine and general internal medicine and medical director of perioperative services at Medical College of Wisconsin's Froedtert Eye Institute in Milwaukee, Wisconsin) himself was quoted in an article as saying it should be considered in high-risk patients. The argument is that "a near miss that doesn't happen today is the accident that doesn't happen tomorrow."

Dr. Klawonn

*Dr. Klawonn leads the perioperative clinic at Carilion Clinic and is an assistant professor at Virginia Tech Carilion School of Medicine in Roanoke, Va.*

In the case of the troponin argument, some participants' minds were changed from their original opinion. The discussion afterward indicated that the consensus was that the checking of troponin will likely be included in updated guidelines soon to be released, and though not everyone is fully drinking the Kool-Aid yet, it is likely coming; the main thing would be to test knowing what your plan would be if you do, and that that plan cannot be "consult cardiology."

The slides and arguments were entertaining, and the banter and roasting were lighthearted, making this a very enjoyable and engaging presentation. There were frequent Godfather references which is, of course, appropriate; to use a relevant quote, "It's not personal, it's strictly business." ■

SESSION SUMMARY

# MED-TED Teaching Competition

**Presenters: Alexandra Arges, MD, Miah Brawley-Wang, MD, Magdy El-Din, MD, Tyler Larsen, MD, Samuel Lipten, MD, Zayan Mahmooth, MD, and Sebastian Suarez, MD, MPH**

**Summary Author: David Calderhead, MD**

## Key Takeaways

- The future of hospitalist educators is bright!
- The use of short presentations can be effective for learners and is an essential tool on a busy inpatient service.
- Consider using the PechaKucha presentation style to ensure concise presentations.

The inaugural MED-TED teaching competition saw seven contestants compete against each other to teach a topic in under eight minutes. This innovative session included attending hospitalists with fewer than five years of experience out of residency. A panel of judges scored each presentation to determine who should come out of the competition victorious. If any contestant went over eight minutes, a point was deducted.

The first contestant, Dr. Arges, discussed "Pulmonary Complications of Cirrhosis." Dr. Arges had the audience running down to the emergency department on a busy admitting shift to take care of patients with hepatic hydrothorax, portopulmonary hypertension, and hepatopulmonary syndrome. Take-home points included consideration of diaphragmatic repair via video-assisted thoracic surgery for patients with intractable hepatic hydrothorax; the importance of obtaining a right-heart catheterization in those with cirrhosis and signs of elevated pulmonary artery pressures on echocardiogram, so that pulmonary arterial hypertension therapies can be started if portopulmonary hypertension is suspected; and in those with platypnea orthodeoxia the value of obtaining arterial blood gases (alveolar-arterial gradient should be over 15 mmHg) and contrast-enhanced echocardiogram (for shunt detection) in diagnosis of hepatopulmonary syndrome. The importance of early diagnosis of all these conditions was emphasized, as early pursual of liver transplant is vital in caring for patients with these high-mortality conditions.

Next up was Dr. Brawley-Wang who presented on "Inpatient Gender Affirming Care." First, Dr. Brawley-Wang went over some vocabulary, including defining gender dysphoria as "feelings, usually intense, of gendered discomfort with parts of one's body." Next, strategies to mitigate inpatient risks for dysphoria based on which dysphoria triggers were presented. Examples of strategies included: introducing oneself with preferred pronouns, avoiding honorifics (i.e., Mr. and Mrs.), using the electronic health record to find the patient's preferred name and pronouns, continuing hormone treatments unless contraindicated, and getting your patient with gender dysphoria a private room or at least a shared room with the gender as which they self-identify. Overall, realizing that mistakes happen and that approaching the patient with compassion, curiosity, and a humble growth mindset will go a long way toward mitigating inpatient gender dysphoria.

Using the innovative presentation style, PechaKucha, Dr. El-Din gave an overview of "Acute Pancreatitis." The presentation style PechaKucha uses 20 slides, allowing only 20 seconds per slide for the presenter, automatically advancing the slides as the presenter speaks. The PechaKucha format originated in 2003 and means "chit chat" in Japanese. Dr. El-Din used a combination of clinical images and memes to illustrate his points to the audience. A large chunk of the pearls presented were regarding management. Examples included: enteral feeding using a low-fat rather than clear liquid diet as soon as possible; using a more restrictive intravenous fluid strategy (the WATERFALL trial), and same-admission cholecystectomy for mild gallstone pancreatitis (the PONCHO trial).

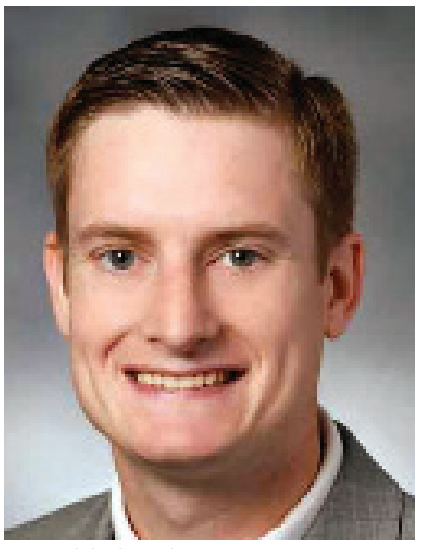
The fourth contestant, Dr. Larsen, used an image-based approach to presentation in the aptly titled presentation "Teaching Snapshots: Leveraging Clinical Images to Improve Physical Diagnosis." Initially, the audience was shown a rash from a patient and they were asked to discuss at their tables possible differentials. One objective of the presentation was being able to recognize that clinical images in the electronic health record can be used as a strategy for physical-examination teaching on busy, inpatient, teaching services. The audience was taught how to do this by using the 3 Ds of image review: Describe, Diagnosis, and Differential. The rash was described as widespread, hyperpigmented, and scaling patches and plaques. The working diagnosis was mycosis fungoides with differential eczema, psoriasis, cutaneous lupus, and lichen planus. The case was wrapped up with the patient's biopsy showing mycosis fungoides, the most common type of cutaneous T-cell lymphoma.

Next up was Dr. Lipten with "A Visual Method to Teach SIADH Physiology and Treatment." Dr. Lipten was clear up front that we would not be doing calculations or covering an exhaustive review of hyponatremia; simplifying this presentation into essentially one animation. While time-consuming, the creation of the animation was able to properly illustrate the differences in normal versus syndrome of inappropriate antidiuretic hormone secretion (SIADH) kidney physiology. Essentially, while normal kidney physiology can create a wide range of urine concentrations, SIADH can only make one concentration of urine so any additional water intake will lead to hyponatremia via dilution. Once this pathophysiology was clearly illustrated, the three methods of correction of hyponatremia in SIADH became clear: decrease water intake (i.e., fluid restriction), increase the renal solute load (i.e., salt tabs), or restore the kidney's ability to dilute the urine (i.e., loop diuretic).

Dr. Mahmooth presented "Into and Out of Ketoacidosis." The importance of differentiating the etiology of ketoacidosis was emphasized, as this determined the appropriate treatment. The different pathophysiologies of each type of ketoacidosis were illustrated to the audience using an animation that included the (often dreaded) Krebs Cycle. Dr. Mahmooth shared with us that it is estimated that half of all euglycemic diabetic ketoacidosis (DKA) patients' diagnoses are delayed. The importance of obtaining a good patient history, particularly in these patients, was demonstrated by showing that while the lab values look similar between starvation ketoacidosis, alcoholic ketoacidosis, and euglycemic DKA, the treatment can be drastically different (glucose alone for starvation ketoacidosis, glucose then thiamine for alcoholic ketoacidosis, glucose and insulin for euglycemic DKA). While the importance of history was made clear, one helpful lab value is the presence of glucosuria in determining the effect of Sodium-glucose cotransporter-2 drugs in euglycemic DKA.

Finally, Dr. Suarez described how buprenorphine and methadone are life-saving medications with his presentation titled, "Buprenorphine and Methadone: More Life-saving Than Aspirin, Statins, et al." The number needed to treat (NNT) to save a life for the full opioid receptor agonist methadone is 42, while the NNT for the partial agonist buprenorphine is 53; comparatively the NNT for secondary prevention of cardiovascular disease for aspirin and statins is 333 and 83 respectively. Dr. Suarez emphasized that prescribing buprenorphine is an essential skill all hospitalists need, given the rise of opioid-related admissions and the undertreatment of opioid use disorder (only 22% of patients with opioid use disorder receive treatment). Finally, the inpatient initiation of low-dose buprenorphine was strongly advocated for as it minimizes withdrawal symptoms and avoids an opioid-free period.

Once all contestants had presented, the panel of judges announced that Dr. Larsen's image-based presentation on improving physical exam teaching through clinical images was the winner of the inaugural MED-TED teaching competition. ■



Dr. Calderhead

*Dr. Calderhead is a hospitalist at Corewell Health West in Grand Rapids, Mich. He is a physician informaticist as well as core faculty for the Michigan State internal medicine residency program at Corewell Health.*

SESSION SUMMARY

# Inpatient Management of Patients with Opioid Use Disorder

**Presenters: Anna-Maria South, MD, FACP, FASAM, and Keri Holmes-Maybank, MD, MSCR, SFHM**

**Summary Author: Kate Wimberly, MD**

This session was a high-yield overview of the management of hospitalized patients with opioid use disorder (OUD) presented by Dr. South, an addiction medicine physician who treats patients with substance use disorders and assistant professor at the University of Kentucky College of Medicine in Lexington, Ky., and Dr. Holmes-Maybank, an associate professor at the Medical University of South Carolina in Charleston, S.C. and a national correspondent for The Hospitalist. As the prevalence of OUD and the number of overdose deaths continue to rise in the U.S., hospitalists can play a key role in providing lifesaving management of patients with OUD. This session focused on the initiation and management of medication for opioid use disorder (MOUD), harm-reduction strategies for patients with OUD in the inpatient setting, and additional challenges hospitalists may face when caring for patients with OUD.

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Dr. Wimberly

*Dr. Wimberly is a med-peds hospitalist and an assistant professor in internal medicine and pediatrics at the University of Kentucky in Lexington, Ky.*

First, the presenters reminded the audience of the mortality benefits of MOUD. The majority of people with OUD never receive MOUD, but MOUD saves lives. People with OUD who are not on MOUD have a mortality rate of more than six times that of the general population; with MOUD, the mortality rate decreases to less than twice that of the general population. Hospitalization can provide an opportunity to start lifesaving treatment with MOUD. As of 2023, providers no longer need an X-waiver to prescribe buprenorphine. Any provider with a Schedule II DEA can now prescribe buprenorphine, so hospitalists can and should prescribe this evidence-based treatment for patients with OUD.

The presenters provided an overview of the initiation of buprenorphine-naloxone in various clinical settings. Traditionally, buprenorphine-naloxone is initiated in patients who are in moderate withdrawal with Clinical Opiate Withdrawal Scale scores greater than or equal to 8. For a traditional induction, patients should not have received short-acting opiates, long-acting opiates, or methadone in the last 12, 24, or 72 hours, respectively. Buprenorphine-naloxone can also be initiated in patients who are NOT in opioid withdrawal and have not received opiates in the last five days. In these patients, buprenorphine is initiated at a lower dose than is used in a traditional induction.

The presenters also highlighted low-dose buprenorphine initiation or microdosing. Microdosing is an alternative strategy of initiating MOUD in the inpatient setting. The need for an opiate "washout" period prior to traditional induction of buprenorphine-naloxone can create challenges, especially in inpatients requiring short-acting opiates for acute pain. Initiating buprenorphine via microdosing allows patients to remain on short-acting opiates during the initiation of buprenorphine. Additional indications for microdosing rather than traditional induction of buprenorphine include daily fentanyl use (due to the drug's unpredictable pharmacokinetics) and methadone use with a dose greater than 40 mg daily. The presenters provided sample three- and seven-day microdosing protocols using buccal or transdermal buprenorphine to bridge to sublingual buprenorphine-naloxone. Patients initiated on buprenorphine while on full opioid agonists can continue full agonists during their acute illness until the decision is made via shared decision-making to taper full agonists.

Patients initiated on buprenorphine-naloxone must be referred to an outpatient prescriber on discharge. Hospitalists should prescribe enough buprenorphine-naloxone to bridge until the outpatient follow-up appointment. All patients with OUD or with other risks for overdose should be discharged with naloxone. The presenters emphasized that patients being discharged to a facility should have access to MOUD; a facility refusing acceptance of a patient due to MOUD is a violation of the Americans with Disabilities Act.

Next, the presenters discussed two substances that are increasingly presenting challenges for hospitalists: fentanyl and xylazine. Fentanyl is 100 times more potent than morphine, and 50 times more potent than heroin. As fentanyl has become ubiquitous in the drug supply in communities, overdose deaths have increased by more than 250% between 2016 and 2021. As above, fentanyl's unpredictable pharmacokinetics can make managing withdrawal and MOUD initiation difficult.

Xylazine is a non-opioid alpha-agonist used as a sedative in veterinary medicine. Xylazine has become a common adulterant in illicit opioids and non-opioids. Xylazine causes sedation, hypotension, bradycardia, and respiratory suppression, and is contributing to increasing overdose deaths. Xylazine may also cause skin ulceration and necrosis. There are no approved reversal agents, and xylazine is not routinely tested on urine drug tests or autopsies. Although naloxone does not reverse the effects of xylazine, naloxone should be administered to patients with suspected xylazine toxicity, as co-administration of opioids with xylazine is common.

Lastly, the presenters touched on hospitalists' roles in harm-reduction strategies in caring for patients with OUD. Harm reduction is a patient-centered, nonjudgemental public health practice that focuses on mitigating the harmful effects of using illicit substances rather than requiring abstinence from substances. MOUD is a harm-reduction strategy and decreases mortality in patients with OUD even if a patient does not abstain from using other opiates. The presenters introduced the ARMS framework for harm-reduction counseling for patients who inject drugs:

- **A:** Disinfect area with **A**lcohol
- **R:** Keep naloxone in sight for **R**eversal
- **M:** Use sterile **M**aterials
- **S:** Be mindful of **S**urroundings (never use alone)

Additionally, it's important for hospitalists to treat pain and manage withdrawal appropriately in patients with OUD, as this decreases patient-initiated discharges and allows patients to receive treatment for the acute condition that requires hospitalization.

As hospitalists and experts in the field of addiction medicine, Drs. South and Holmes-Maybank provided a relevant overview of the care of hospitalized patients with opioid use disorder. It is crucial that hospitalists are well-versed in the management of patients with OUD, and this talk provided an excellent framework of evidence-based, up-to-date strategies for the care of this patient population. ■

SESSION SUMMARY

# Solving Major Problems: Major Bleeding and Major Surgery for Patients on Anticoagulants

**Presenters: Andrew Dunn, MD, MPH, Alicia Cana, MD, Krishna Chokshi, MD, MS, and Scott Kaatz, DO, MSc, FACP, SFHM**

**Summary Author: Chantel Dockstader, MD**

## Key Takeaways

- Patients with gastrointestinal disease on AC for AF should restart 7 to 14 days after bleeding resolves.
- Patients on VKA therapy who are at high risk for VTE and require VKA interruption should be bridged, with the bridge resuming 48 to 72 hours after the procedure; during the pause DVT prophylaxis can be given.
- Patients value shared decision making and our offered opinion; it's our ethical duty to have these conversations even when clear guidance is lacking.
- DOACs are better than warfarin for CKD or ESRD patients; in these patients the pause duration is for three to four days before surgery with restart 72 hours after.

This interactive session posed real-life scenarios for hospitalists who frequently deal with difficult anticoagulation questions and grounded it all with the evidence.

The first case discussed was an elderly female on a direct oral anticoagulant (DOAC) for atrial fibrillation (AF) and acetylsalicylic acid (ASA) for coronary artery disease (CAD) who is admitted for symptomatic anemia. Despite an esophagogastroduodenoscopy, colonoscopy, and capsule endoscopy, no source of bleeding is found. The question is, when would you restart a DOAC? It was quickly noted that the ASA should be discontinued. Considerations weighed should include the risk of re-bleeding, and the risk of venous thromboembolism (VTE) along with the patient's own goals of care. Two retrospective studies were reviewed with one meta-analysis. The American and Canadian gastrointestinal societies, along with the European guidelines, all support a "sweet spot" for resumption of seven to 14 days after bleeding has resolved.

The second case discussed the management of a high VTE-risk patient in the perioperative setting. Is bridging needed? And what about post-op VTE prophylaxis? Hospitalists should consider the patient's thrombotic risk based on their history of VTE. A recent VTE occurring within the last three months, and especially within the last month, is considered high-risk, while a VTE that occurred more than 12 months ago is considered low-risk. This assessment should be balanced with the procedural bleeding risk, with, for example, major orthopedic surgery posing a high bleeding risk and pacemaker implantation posing a low risk. The evidence reviewed here was a summary of many observational studies including the PROSPECT and BRIDGE trials. The American College of Clinical Pharmacy recommendations were discussed, including the recommendation to bridge with heparin over no heparin bridge for high-VTE-risk patients on vitamin K antagonists (VKA). In line with the recommendations, it was suggested to wait at least 48 to 72 hours before resuming low molecular weight heparin bridging in patients having a high-bleed-risk surgery or procedure. During this pause of full bridging anticoagulation, deep vein thrombosis (DVT) prophylaxis doses of resumed low molecular weight heparin can be given.

The third case illustrated the need for more shared decision making regarding anticoagulation when the evidence is weak or lacking. Shared decision making incorporates clinical evidence and the patient's unique circumstances, along with their values, to arrive at a decision that is best for that individual patient. It's an ethical imperative and our patients value it. Some barriers noted were time pressure, discomfort around challenging communication, assumptions about the patient's poor health literacy, and prognostic or clinical uncertainty. We can improve shared decision making by fostering awareness of choices, introducing options, assisting patients in the evaluation of options based on their goals and concerns, discussing potential harm or benefit, and finally offering a recommendation and assisting patients in following through. Several decision aids for AF might be helpful for patients to visualize risk, however, they are not useful when weighing cerebrovascular accident risk versus bleeding risk.

The fourth case was a young person with a mechanical aortic valve replacement on warfarin who suffered a traumatic intraparenchymal bleed requiring urgent surgical intervention. What should be used to reverse the warfarin? Rapid reversal is required, and thus four-factor prothrombin complex concentrate should be used rather than fresh frozen plasma, with the suggested additional use of intravenous vitamin K in a dose of 5 to10 mg. An open-label, noninferiority, randomized, clinical trial was discussed which showed a much faster reversal of international normalized ratio with prothrombin complex concentrate, versus frozen plasma, for warfarin-related major bleeding. A follow-up question was posed. When should anticoagulants be restarted after intracranial hemorrhage in AF? There have only been three small, randomized, controlled trials so far. Two of these trials showed an increase in intracerebral hemorrhage when anticoagulant (AC) treatment was resumed, and one trial showed an increase in stroke when AC treatment was not resumed. Due to the low quality of data, guidelines on this matter are very non-committal.

The final case discussed perioperative AC in a patient with chronic kidney disease (CKD) or end-stage-renal disease (ESRD) on a DOAC. The patient was going to have a high-bleeding risk procedure. When would you hold and restart the DOAC? CKD and ESRD are both associated with an increased risk of VTE along with an increased bleeding risk. The COMBINE AF database meta-analyses were discussed. They show that there's no difference in major bleeding between DOAC and warfarin across all degrees of renal function, that DOACs are superior to warfarin for all patients, and that the benefit increases as renal function worsens, along with a mortality benefit with DOACs as compared to warfarin for patients who have a glomerular filtration rate less than 77. The RENAL-AF trial, although small, showed there was no difference between major bleeding events for those on standard 5-mg versus 2.5-mg reduced-dose apixaban. For stage 5 CKD or ESRD patients in the perioperative setting, there is a lack of high-quality evidence. It is suggested to extend the pause duration of holding DOACs three to four days before major surgery and to restart 72 hours after the procedure.

Overall, the cases discussed underscore the importance of individualized decision making, considering both clinical evidence and patient preferences, to optimize anticoagulation therapy in the many complex clinical scenarios we encounter as hospitalists. ■

Dr. Dockstader

*Dr. Dockstader is a med-peds-trained academic hospitalist practicing adult medicine at the University of New Mexico in Albuquerque, N.M. She is also the director of clinical documentation in the department of medicine, and the secretary for SHM's New Mexico chapter.*

SESSION SUMMARY

# Leading Within an Environment of Work-Life Balance: From Burnout to Wellness

**Presenters: Efren Manjarrez, MD, FACP, SFHM, Kierstin Cates Kennedy, MD, MSHA, FACP, SFHM, Alpesh Amin, MD, MBA, MHM, and Sahar Taghvaei, DO**

**Summary Author: Robert A. Craven, MD, FACP, CHCQM-PHYADV, SFHM**

Few topics echo in the doctors' lounge across the country more often than physician burnout. It's the hot topic of our time. In this talk, the presenters did an excellent job exploring this issue and using small groups in creative and effective ways. We started in our small groups brainstorming what factors define physician burnout. Group leaders came up with the following: workload (including patients and technological interruptions such as secure chats and pages), lack of flexibility or control, lack of autonomy, and misalignment of goals between hospitalists and leadership, as well as other issues.

Dr. Taghvaei, a hospitalist at Denver Health and an assistant professor in the division of internal medicine at the University of Colorado School of Medicine, both in Denver, then spoke about burnout, defining it as a "syndrome characterized by emotional exhaustion." She went on to say this affects physicians at double the rate of other professions with a suicide rate also double the rate of the general population. Factors contributing to burnout include: too many bureaucratic tasks; spending too many hours at work; increased computerization of practice; lack of respect from administrators and colleagues; insufficient compensation; lack of control or autonomy; government regulations; feeling like a cog in a wheel; emphasis on profits over patients; and lack of respect from patients.[1]

Dr. Taghvaei then discussed ways to measure burnout, specifically the Maslach Burnout Inventory, or MBI. This was developed in 1981 and has become the standard way of measuring burnout in research. Factors involved in this scoring method include emotional exhaustion, depersonalization, and personal achievement. Each question is scored from 0-6, from never to every day in occurrence. For each section, the higher the score, the more burnout one is experiencing, except for the personal achievement section, where a higher score correlates to lower burnout.

Dr. Manjarrez, associate chief of the division of hospital medicine, associate chief of patient safety, and quality officer for UHealth, as well as an assistant professor of clinical medicine, all at the University of Miami's Miller School of Medicine, then spoke about what the literature states about burnout. For academic hospitalists, protected time away from clinical duties is necessary for burnout prevention. For community hospitalists, second-victim experiences from the COVID-19 pandemic play a large role in those experiencing burnout.

Dr. Manjarrez continued by discussing differences in generations and genders, and how they are affected by burnout. For example, millennials value the culture of the practice above all factors in job satisfaction. Hospitalists in general are now seeking a better work-life balance from their employers. Women experience far greater burnout than men and tend to take more time off. Interestingly, women report using extended leave as having negative impacts on all aspects of life, while men reported it only having a negative impact on their careers. The U.S. is lagging behind European countries in maternity- and paternity- leave models that actually promote the retention of women in the workplace.

We then broke into small groups again and spoke about various drivers of wellness. Next, Dr. Taghvaei spoke about the "R.I.S.E. for Self-Care" model. This involves four steps:

- **Recharge**—What gives you joy outside of work?
- **Introspect**—What can you do to improve the situation?
- **Seek help**—What resources do you need to improve the situation?
- **Express yourself**—Whom can you thank? What are you grateful for?

Dr. Kennedy, chief medical officer and associate professor of medicine at the University of Alabama at Birmingham, then took the stage and spoke on C-suite solutions and how we as leaders need to demonstrate wellness-centered leadership, which calls us to care about people, cultivate relationships, and inspire change. She charged us to model and normalize self-care, such as by intentionally working remotely at times, making time for daily exercise (even if it means missing meetings), and not responding to emails while on vacation. To care about others, you must first care for yourself. To cultivate relationships, she recommended we learn to listen for understanding, focus on connecting, and then help direct others to their passions. Studies show if we focus 20% of our time on activities we find most meaningful, we will have decreased burnout.

We then did a final small-group brainstorming session for well-being solutions. Ideas brought up included paid time off, flexible schedules, decreased administrative burden, decreased technological interruptions, and other concepts. ■

## References

1. Kane L. Medscape national physician burnout, depression & suicide report 2019. Medscape website. Available at https://www.medscape.com/slideshow/2019-lifestyle-burnout-depression-6011056. Published January 16, 2019. Accessed June 3, 2024.

Dr. Craven

*Dr. Craven is vice president of case management, physician advisor, and hospitalist at McLeod Health, in Florence, S.C. He's also a member of The Hospitalist's editorial board.*

SESSION SUMMARY

# Update on Clinical Guidelines

**Presenter: Kevin O'Leary, MD, MS, MHM**

**Summary Author: Cheryl Peavler, DO**

In a packed room, Dr. O'Leary, chief of the division of hospital medicine, associate chair for quality in the department of medicine, and vice president of quality for Northwestern Memorial HealthCare in Chicago, delivered a case-based exploration of everyday clinical scenarios managed by adult hospitalists. His opening dialogue exuded a passion for evidence-based medicine, yet he humbly acknowledged his limited expertise in the extensive realm of clinical guidelines. Prior to embarking on our journey, he detailed his sources, which included the New England Journal of Medicine's Guideline Watch, Guideline Central, and the Journal of Hospital Medicine. The points highlighted offered recent and potentially practice-altering recommendations spanning the last two years.

First up was a case of acute diverticulitis. The American College of Physicians suggests that clinicians can manage uncomplicated left-sided colonic diverticulitis on an outpatient basis, and sometimes even without antibiotics. Dr O' Leary emphasized caution that this does not apply for those complicated events as defined by abscess, phlegmon, fistula, obstruction, bleeding, or perforation. Additionally, high-risk patients—like the one presented who was immunocompromised and met systemic inflammatory response syndrome criteria with fever and tachycardia—require special consideration and use of antibiotics for treatment.

Continuing the case study, the patient experienced an episode of atrial fibrillation during hospitalization. According to the American Heart Association, five-year recurrence rates for atrial fibrillation range from 42% to 68%. Given this elevated risk of recurrence, initiating long-term anticoagulation is recommended to reduce the risk of stroke.

Prior to discharge, the patient inquiries included medication options, diet restrictions, and potential surgery referral as this was their third episode of acute left-sided colonic diverticulitis in two years and therefore the condition was considered frequent. The good news is, we now have some knowledge on this topic to respond. The American College of Physicians recommends against mesalamine and there are no eligible studies to evaluate dietary advice. However, surgery discussion should be considered once treatment is complete to prevent relapse.

## Key Takeaways

- Acute diverticulitis: Antibiotics are indicated for patients with systemic inflammatory response syndrome, immunocompromised status, or complications. Refer to colorectal surgery if there are three or more reoccurrences in two years.
- Atrial fibrillation: the American Heart Association warns of five-year recurrence rates (42 to 68%) for acute episodes in the setting of medical illness. Long-term anticoagulation based on stroke risk is a reasonable approach.
- Inpatient hyperglycemia: Manage with long-acting insulin even for non-diabetic patients on glucocorticoids.
- COPD exacerbation (think GOLD Group E): All our patients fit this category—moderate exacerbations or hospitalization. Long-acting beta 2-agonists and long-acting muscarinic antagonists, or LABA + LAMA, is the go-to, with inhaled corticosteroid added if eosinophils exceed 300 cells/uL.
- HFpEF discharge: Sodium-glucose cotransporter-2 inhibitors take the lead, per the 2023 American College of Cardiology consensus. Starting in-hospital improves long-term adherence.
- Atrial fibrillation and catheter ablation: Strong evidence with HFrEF, can be useful in HFpEF. Either way, catheter ablation triumphs drugs for rhythm control.
- Anticoagulation and lower gastrointestinal bleed: Reverse DOAC if bleed is life-threatening and the last dose is taken within 24 hours.

Practical wisdom from Dr. O'Leary flowed to the next case of a patient presenting with a chronic obstructive pulmonary disease (COPD) exacerbation. Hyperglycemia with more than two readings of blood glucose level greater than 180 mg/dL in 24 hours was recorded. Scheduled long-acting insulin should be added regardless of diabetes status in these circumstances to target glucose levels between 100 and 180 mg/dL. Although controversial due to a lack of specific guidelines, continuous glucose monitoring is suggested in these patients.

Dr. O'Leary continued revealing more pearls of clinical knowledge and unveiled an "Aha!" moment about hospitalized patients admitted with an exacerbation of COPD. All of them automatically meet Global Initiative for Chronic Obstructive Lung Disease, or GOLD, group E (≥ 2 moderate exacerbations or ≥ 1 exacerbation leading to hospitalization) criteria and hence should be on and have a prescription for long-acting muscarinic antagonists, or LAMA, and long-acting beta 2-agonists, or LABA. Those with eosinophils greater than 300 require the addition of inhaled corticosteroid.

Keeping on our journey, we encountered our third case—a patient diagnosed with heart failure with preserved ejection fraction (HFpEF). They are adequately diuresed and we are preparing to discharge them. To reduce their risk for adverse outcomes, hospitalists should prescribe SGLT2i, sodium-glucose cotransporter-2 inhibitors, as the first line according to the 2023 American College of Cardiology expert consensus. Interestingly, when these medications are started in the hospital there is greater long-term adherence.

Unfortunately, our patient is readmitted with atrial fibrillation. In patients with atrial fibrillation and HFrEF on guideline-directed medical therapy, catheter ablation is beneficial in improving symptoms, ventricular function, and cardiovascular outcomes (1A level of evidence). While evidence for HFpEF and symptomatic atrial fibrillation is less robust (2A), catheter ablation remains superior to drug-based rhythm control.

Dr. Peavler

*Dr. Peavler is an adult internal medicine hospitalist and serves as the medical director of acute care quality, safety, and experience at Corewell Health West Hospitals in Grand Rapids, Mich.*

No comprehensive update would be complete without delving into the area of anticoagulation and bleeding—a topic that would soon take center stage at this presentation. Our final case introduced a patient already on apixaban for atrial fibrillation. This time, they presented with a lower gastrointestinal bleed—a concerning situation but a dilemma we face often. Guidelines support that patients with a life-threatening bleed on DOACs should receive reversal if the DOAC is last taken within 24 hours. After achieving source control and stopping the bleeding, resuming anticoagulation is crucial. Studies indicate that this approach reduces the risk of post-bleeding thromboembolism and mortality. The optimal timing for restarting anticoagulation remains somewhat elusive, but a window within seven days is recommended.

And just like that, Dr. O'Leary brought us to a closing summary—a moment when our minds buzzed with newfound knowledge. ■

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SESSION SUMMARY

# The Art and Science of Hospitalist Workloads: Designing and Implementing Evidence-Informed Strategies for Optimal Patient, Workforce, and Organizational Outcomes

**Presenters: Marisha Burden, MD, MBA, FACP, SFHM, and John Nelson, MD, MHM**

**Summary Author: Semie Kang, DO, FHM**

This engaging strategy session was led by two passionate speakers committed to optimizing hospital operations while prioritizing the well-being of hospitalists. They delved into various challenges, or "tensions and stressors," affecting hospital medicine's future, such as financial strains post-COVID-19, increased clinician burnout, and changing attitudes towards taking on extra shifts. Nationally, we're grappling with a more complex patient population, a reality supported by the speakers with compelling evidence. They also explored how emerging technologies can assist hospitalists. The session had three key objectives:

1. Compare and contrast different workloads and their impact on outcomes—According to SHM's 2023 State of Hospital Medicine report, the average daily patient census typically ranged from 11 to 20. Hospitalists expressed a strong belief, also supported by the report, that patient census significantly influenced perceived safety. An article discussed during the session authored by Kalamahmadi et al. emphasized that the right workloads could lead to cost savings in the millions of dollars for organizations.[1] The speakers highlighted the need for a tailored approach rather than a one-size-fits-all solution, especially when comparing community and academic settings.

2. Identify emerging best practices for determining hospitalist workloads and work design—What struck me as particularly enlightening during this session was the discussion on measuring hospitalist workload. Prior to this, I wasn't aware of the existence of electronic tools designed to track clinician electronic health record usage on a daily basis. These tools, called event log data, offer insights into total electronic health record  time, breaking it down further into time spent on encounter-note documentation, prescriptions, and electronic inbox or secure chat messaging. Dr. Burden also shared insights into the innovative work she and her team are undertaking with the Gritty Work application (www.grittywork.org). This tool actively collects clinicians' perceptions of their workload, helping to identify when workload thresholds lead to positive or negative outcomes. Through the adoption of a data-driven approach, hospitalist leaders can paint a structured and objective picture of optimal work designs.

3. Apply insights from management science and quality improvement to enhance negotiation strategies with hospital executives—In the concluding segment of this session, the focus turned to effectivestrategies for hospitalist leaders to bridge the decision-making gap with executive partners. The speakers referenced an important article published in the Journal of Hospital Medicine by White et al.[2] Hospital executives are currently grappling with economic pressures that inevitably affect hospitalist leaders, who must navigate choices between reduced staffing or demonstrating the hospital's return on investment. The speakers stressed that while executives highly value hospital medicine groups, quantifying their value financially poses challenges. Through interviews with multiple hospital executives, it was found that those who valued hospitalists highly were typically from institutions where hospitalist groups demonstrated alignment with hospital priorities. Achieving this alignment requires consistent communication of hospitalist efforts, fostering close relationships with executives, and maintaining transparency regarding all hospitalist-based initiatives. ■

## Key Takeaways

- The optimal number of patient encounters will require a tailored approach rather than a one-size-fits-all approach and should be driven by a holistic viewpoint to determine what is optimal: workforce well-being, patient safety and quality, and financial outcomes.
- Emerging technologies will assist hospitalist leaders in tracking time spent dedicated to non-face-to-face care (e.g. note documentation, medication reconciliations, inbox, and secure chat messaging), which in time may help develop optimal work design, in particular when paired with clinician and patient outcomes.
- Hospital executives highly value hospital medicine groups, but it has been challenging to quantify hospital medicine's value financially. Maintaining strong relationships with hospital executives by clearly communicating hospitalist-based initiatives is key to building and sustaining a strong hospital medicine workforce.

## References

1. Kamalahmadi M, Bretthauer K, et al.Mixing it up: operational impact of hospitalist caseload and case-mix. *Management Science*. 2022;69(3). doi: 10.1287/mnsc.2022.4342.

2. White A, McIlraith T,  et al. Collaboration, not calculation: a qualitative study of how hospital executives value hospital medicine groups. *Journal of Hospital Medicine*. 14:662-7. https://doi.org/10.12788/jhm.3249.

Dr. Kang

*Dr. Kang is an assistant professor and academic hospitalist at Northwell Health – Long Island Jewish Medical Center in New York. She currently serves  there as the site director for the division of hospital medicine and is the executive chair for SHM's special interest group for interdisciplinary rounds.*

SESSION SUMMARY

# Syncope: Things We Do for No Reason & Things We Do for Reason

**Presenters: Daniel Dressler, MD, MSc, FACP, MHM, and Romil Chadha, MD, MBA, MPH, FACP, SFHM**

**Summary Author: Arunab Mehta, MD, MEd, FHM**

Syncope is broadly classified into reflex-mediated (60% to 70%), orthostatic (10%), and cardiac (10% to 20%). Cerebrovascular causes were removed from American and European guidelines (or listed as a rare cause). When working up syncope, a history and physical exam along with an electrocardiogram (ECG) will have a diagnostic yield of 88% for most cases of syncope, and this should be the starting point for most cases. An ECG is a class I recommendation in the guidelines for the workup of syncope. Orthostatic vitals are an underutilized part of the physical examination in syncope (only 27% to 38% in studies) and are also recommended for most cases.

Pulmonary embolism (PE) is an increasingly feared cause of syncope. The Pulmonary Embolism in Syncope Italian Trial, or PESIT, from 2016 found that 17% of admitted patients with a first-event syncope had a diagnosis of PE when tested. However, a large number of patients in that trial were discharged home from the emergency department after being diagnosed with reflex, drug-induced, or orthostatic syncopal events. Hence, only 3.8% of patients who presented to the hospital with syncope were found to have PE. Two-thirds of these patients had large-vessel PE, while one-fourth of the PE patients had no clinical manifestations of the disease (i.e., tachypnea, tachycardia, hypotension, or clinical signs of deep vein thrombosis). Other retrospective studies found a PE prevalence in syncope of 0.8% to 2.5%. The presenters concluded that it might be beneficial to get a Well's Score and D-dimer in patients with the first episode of syncope unless an obvious reason is present. Imaging should be obtained depending on the score and or D-dimer.

Neurological testing for syncope, including routine computed tomography (CT) scan of the head and electroencephalogram (EEG) is done in more than 50% of patients in a retrospective cohort study with a diagnostic yield of just 1.5%. Most societies and guidelines recommend not pursuing any brain imaging (CT, MRI, carotid ultrasound, or EEG) in simple syncope with a normal neurological exam, no history of trauma, and the absence of seizure features (such as tongue bites).

The role of routine echocardiograms has always been questioned for syncope. A summary of multiple retrospective cohort studies revealed that the yield of an echocardiogram in patients with normal history, physical examination, and ECG was only about 1% while the cost was $1,500-$2,000 per study. The yield of an echocardiogram in patients with an abnormal ECG went up to about 17%. The guidelines currently support the use of an echocardiogram only if structural abnormality of the heart is suspected.

While tilt table testing is not readily available in most inpatient units, its utility has always left something to be desired, outside of board exam questions. The presenters compared the traditional and fast versions of the test. Finally, they concluded that it was likely useful in cases where there is recurrent syncope of unclear origin as it might help diagnose reflex and delayed orthostatic syncope. However, it could be positive for cardiac cases as well. ■

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