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The Hospitalist

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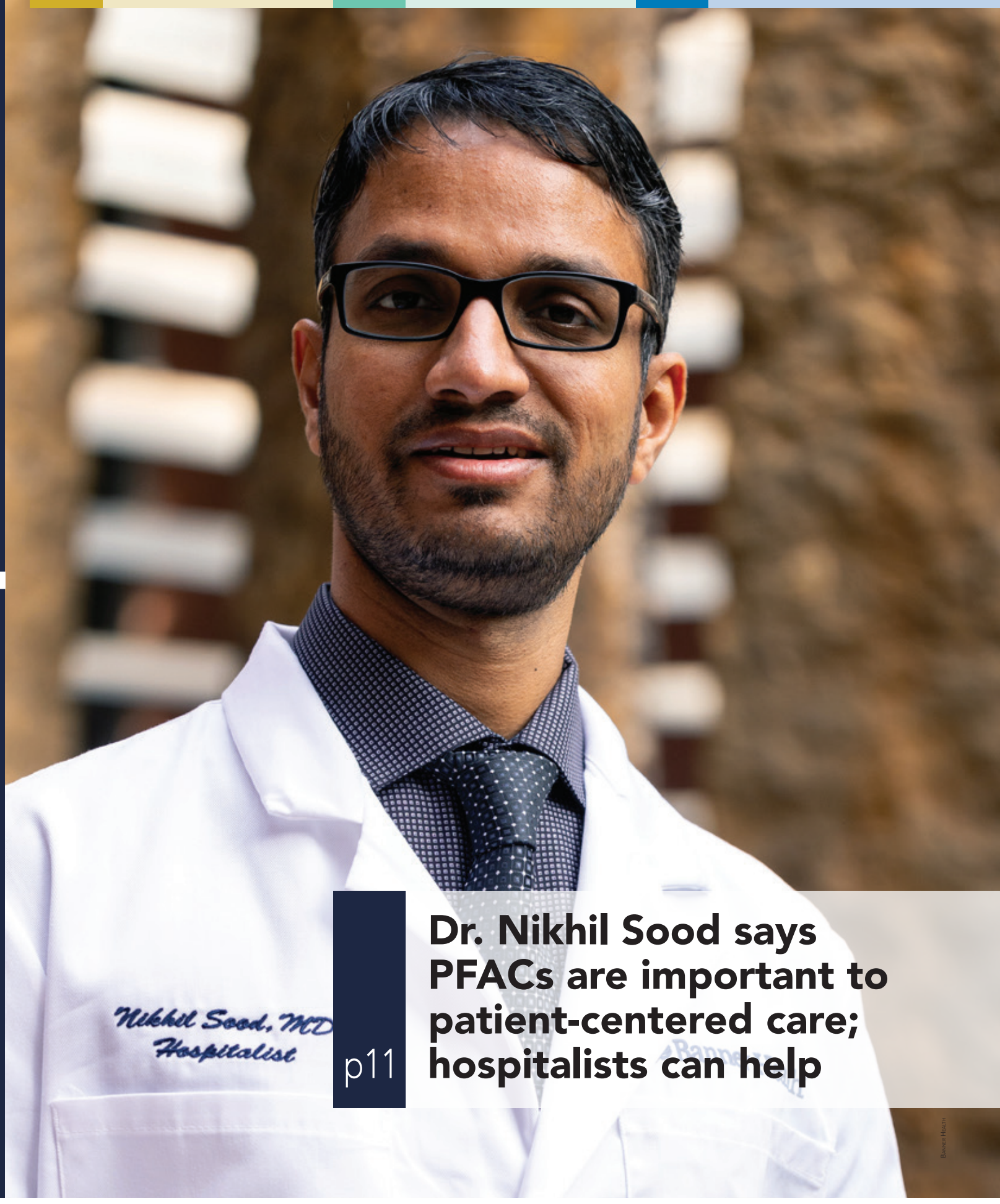

IN THE LITERATURE

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KEY CLINICAL QUESTION

Best non-opioid med for use in OWS?

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THE Hospitalist

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IN THE NEXT ISSUE...

Understanding HCAHPS, ethics in AI

Shared Experiences Make Us Stronger Together

By Kris Rehm, MD, SFHM

Dr. Rehm

Dr. Rehm is the associate chief medical officer of children's services in the department of pediatrics at Vanderbilt University Medical Center in Nashville, Tenn.

As I reflect on our time this year, I want to highlight a few experiences and moments that embody why I'm so grateful to have served as president of our society—some of which, I hope, you've shared with me. Since last year's SHM Converge in Austin, Texas, the SHM staff and Board of Directors have worked to advance the mission, vision, and goals that we shared last year. This has provided us with a clear focus on areas where we should remain engaged and others where we hope to become more involved in the future.

I've had many opportunities to meet our members over the past year, which I absolutely love! We've met in person in Telluride, Colo., (one of my favorite places on earth), Philadelphia, and Anaheim, Calif. I have personally traveled to chapter meetings across the U.S. as well, in Nebraska and Rhode Island, and to regional meetings in Chicago and Kentucky, to name a few! Our international partners have welcomed our team to Argentina, Abu Dhabi, Barcelona, Japan, and Turkey. It is fascinating to hear so many unique points of view about hospital medicine from all around the globe, helping us to keep our finger on the pulse of the field.

Thanks to the foresight of Dr. Rachel Thompson, our immediate past president, we have continued the series known as "The Prez Room," an opportunity for our members to gather with our executive committee—our immediate past president, Dr. Rachel Thompson, me, and our incoming president-elect, Dr. Flora Kisuule. Over the past year, we have offered virtual and in-person Prez Room sessions as a chance to have open, honest conversations among our members, the executive committee, and our chief executive officer, Dr. Eric Howell.

In February, we met and shared our outlooks for 2024. We talked about the threats to our systems—including reimbursement, financial difficulties, and resource constraints—and opportunities, like our enthusiasm for new ways to expand hospital at home for lower-cost care. The most significant takeaway from this session—and all Prez Room sessions—has been the value of sharing experiences across the country among like-minded hospitalists! It helps us remember that we are all more alike than different and that our shared experiences can help make us stronger together.

Something I always feel makes us stronger together is humanism. For me, humanism in hospital medicine is a foundational principle that emphasizes the holistic care of patients, focusing not only on their physical ailments but also on their emotional, psychological, and social well-being. At its core, humanism in hospital medicine recognizes the inherent dignity and worth of every individual, regardless of their medical condition or background. It promotes compassionate and empathetic interactions between health care practitioners and patients, fostering trust, respect, and collaboration in the healing process. In practice, humanism guides clinicians to listen attentively to patients' concerns, involve them in decision making, and tailor treatments to align with their values and preferences. It also encourages a supportive environment where health care teams prioritize patient comfort, dignity, and autonomy, ultimately striving to enhance the overall quality of care and patient outcomes in hospital settings.

This year, SHM's overarching theme for our members is Recognizing the Human in Hospitalist. While we must always remember the significance of humanism for our patients, we must look at our colleagues—and ourselves—as humans, too. At SHM, we strive to

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The Hospitalist is the official newspaper of the Society of Hospital Medicine, reporting on issues and trends in hospital medicine. The Hospitalist reaches more than 35,000 hospitalists, physician assistants, nurse practitioners, medical residents, and health care administrators interested in the practice and business of hospital medicine.

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help you grow in every aspect of your career, while also celebrating you as an individual and our membership as a community. We hope you participated in our National Hospitalist Day festivities on social media last month when we shined the spotlight on the many things that make our members unique, from passions for hiking, baking, and writing, to the common interest in hospital medicine that unites our membership.

As I prepare for SHM Converge this month in San Diego, I'm most excited to see our community together once again. For me as president, it is also a time of transition, and I can think of no one more deserving or more capable of taking over as president than Dr. Flora Kisuule! Please look for her—and me—as we walk the halls of the San Diego Convention Center because we want to meet you and hear from you about how we, as members of the Board, can lead this fine organization into the future.

It has been an honor to serve as your president over the past year, and I am extremely optimistic about what the future holds—for SHM and the field of hospital medicine. Thank you for helping to make SHM such a special, welcoming place for our community to learn and thrive. ■

Dr. Kris Rehm, outgoing SHM president, and Dr. Rachel Thompson, immediate past president, continued The Prez Room series of discussions with members.

SHM

Publishing Opportunities

If you're an SHM member interested in contributing to *The Hospitalist*, there are lots of opportunities. We publish articles about the news, trends, and issues that affect hospital medicine. Topics include everything from clinical and practice management to quality, career, leadership, pediatrics, technology, education, and more.

And, if you want to express yourself creatively, there's HM Voices, our online area showcasing poetry, creative writing, or creative visuals.

Scan the QR code for more information about clinical options (In the Literature, Key Clinical Questions, Interpreting Diagnostic Tests), and HM Voices.

The Hospitalist Welcomes New Editorial Board Members

The Hospitalist's editorial advisory board is a group of SHM members who volunteer their time and experience in hospital medicine to ensure the magazine remains relevant to our readers. Board members serve a two-year term, and trainee members serve a one-year term.

Welcome new board members:

- Charles Pizanis, MD, FHM
- Elizabeth Herrle, MD, FHM
- Gagan Dhillon, MD, MBA
- Kristin Gershfield, MD, FHM
- Lucy Shi, MD
- Mihir Patel, MD, MPH, MBA, FACP, CLHM, SFHM
- Nikolai Emmanuel Bayro-Jablonski
- O'Neil Pyke, MD, MBA, SFHM
- Riannon Christa Atwater, MD
- Richard Wardrop, III, MD, FAAP, FACP, PhD, SFHM
- Sonali Iyer, MD
- Thejaswi K Poonacha, MD, FACP, MBA, SFHM

Thank you to our outgoing board members for their time and dedication to the magazine:

- Aditi Puri, MD, MS
- Amanda Green, MD, FACP, HMDC, CPPS, SFHM
- Ilaria Gadalla, DMSc, PA-C
- Isha Puri, MD, MPH, FHM
- Khaalisha Ajala, MD, FHM
- Kunjam Modha, MD, FACP, SFHM
- Lauren Spaeth, DO,
- Ponon Dileep Kumar, MD, MBA, FACP, FAAPL, CPE
- Ramesh Adhikari, MD, MS, SFHM
- Shyam Odeti, MD, MS, FAAFP, FHM
- Tanveer Singh, MD, MBBS ■

A Critical Opportunity

By Andrea Hadley, MD, FAAP, FHM

A 17-year-old with a history of major depressive disorder who is new to the hospitalist service is being transferred out of the pediatric intensive care unit (PICU) after an intentional Benadryl overdose in a suicide attempt.

You review her labs from this morning showing that her electrolytes are normal. You review her pregnancy test and urine drug screen which are both negative. You review the nursing note from this morning which states she is alert, oriented, and calm and her parents are at the bedside. You interpret her electrocardiogram (EKG) tracing and calculate her QTc to be back to normal at 420.

She remains actively suicidal and will require transfer to an inpatient psychiatric facility following the hospitalization per your discussion over secure texting with the social worker. After discussing her management with the PICU physician over the phone, you accept the patient for transfer out of the PICU.

What level of billing does this qualify for?

This patient would qualify to be billed as an initial hospital care level 3 (99223). Although this patient has already been in the hospital for several days, because this patient is new to your service/group then you can bill for a history and physical (H&P) initial encounter. A full H&P must be documented, though billing depends only on the medical decision-making (MDM) or time so extensive documentation is not required, only what is medically indicated. The MDM is a level 3 as the patient has an acute problem with a threat to life/bodily function (actively suicidal with risk to life if discharged) which could also be considered a severe exacerbation of chronic illness (major depressive disorder with suicide attempt). You have reviewed several labs and notes as outlined above as well as independently interpreted an EKG. You have discussed management with an independently licensed health care practitioner (medical social worker and PICU physician).

Tip

For patients coming out of ICU who are new to the hospitalist service during this admission, you can bill for initial hospital care H&P instead of just doing a subsequent day encounter. ■

Dr. Hadley is an internal medicine and pediatric hospitalist, division chief, acute care pediatrics at Corewell Health/Helen DeVos Children's Hospital, and assistant professor of internal medicine and pediatrics, at Michigan State University College of Human Medicine in Grand Rapids, Mich.

In the Literature

Atrium Baptist Medical Research Reviews

By Harsh Barot, MD, Tony Dang, MD, Chi Huang, MD, FACP, SFHM, Jessica McCutcheon, MD, Amrit Singh Pannu, MBBS, Christina Rinaldi, DO, Kinchit Shah, MD, and Gemechis Tollera, MD

Atrium Baptist, Winston-Salem, N.C.

IN THIS ISSUE

By Harsh Barot, MD

1 Semaglutide in patients with HFpEF and obesity

CLINICAL QUESTION: Does treatment with semaglutide lead to a reduction in symptoms and physical limitations and improve exercise function in patients with heart failure with preserved ejection fraction (HFpEF) and obesity? Does it affect hospitalizations?

Dr. Barot

BACKGROUND: Patients with HFpEF and obesity have more adverse clinical features and hemodynamics, more symptoms, worse functional capacity, and more severely impaired quality of life. There is growing evidence that obesity and excess adiposity may play a role in the development and progression of HFpEF.

STUDY DESIGN: Randomized, double-blinded, placebo-controlled trial

SETTING: 13 countries, 96 sites (Asia, Europe, North and South America)

SYNOPSIS: 529 patients with HFpEF and obesity with BMI over 30 were randomly assigned to receive a once-weekly dose of 2.4 mg semaglutide (263) or placebo (266) for 1 year. The trial had two primary endpoints looking at changes in the Kansas City Cardiomyopathy Questionnaire clinical summary score (KCCQ-CSS, range 0 to 100, higher score meaning fewer symptoms) and change in weight. Secondary endpoints included exercise function measured by 6-minute walk distance, HF events, and a composite endpoint which included death. Patients in the semaglutide arm had a change of 16.6 points in KCCQ-CSS from baseline compared to 8.7 in the placebo arm (estimated difference of 7.8 points; 95% confidence interval [CI], 4.8 to 10.9; P <0.001). In the semaglutide arm, the mean percentage change in body weight was -13.3% compared to -2.6% in placebo (estimated difference -10.7; 95% CI, -11.9 to -9.4, P <0.001). Patients who received semaglutide had a change of 21.5 m in the 6-minute walk test compared with 1.2 m in placebo (estimated difference, 20.3 m; CI, 8.6 to 32.1; P <0.001). Limitations include few nonwhite participants, not being powered to detect clinical events like urgent visits and hospitalization for heart failure, and follow-up continuing for only one year.

BOTTOM LINE: Patients with HFpEF and obesity who were treated with semaglutide had a larger reduction in symptoms and physical limitations and had improved exercise function and weight loss compared to placebo.

CITATION: Borlaug BA, et al. Semaglutide in HFpEF across obesity class and by body weight reduction: a prespecified analysis of the STEP-HFpEF trial. *Nat Med*. 2023;29(9):2358-65.

2 Torsemide or furosemide after discharge in patients hospitalized with heart failure

CLINICAL QUESTION: Is there a mortality difference in patients discharged on torsemide versus furosemide after heart failure hospitalization?

BACKGROUND: Torsemide has been thought to be superior to furosemide in patients with congestive heart failure (CHF), but no high-quality, randomized, controlled, trial data were available comparing different loop diuretics in patients with CHF and looking at all-cause mortality until the TRANSFORM-HF trial.

STUDY DESIGN: Open-label, pragmatic, randomized, controlled trial

SETTING: 60 U.S. hospitals

SYNOPSIS: 2,859 patients with a median age of 65 years randomized to torsemide (1,431) and furosemide (1,428). Patients were followed over 12 months looking at all-cause mortality or all-cause hospitalization. Death occurred in 373 (26.1%) of the torsemide group and 374 (26.2%) of the furosemide group (HR, 1.02; 95% CI, 0.89 to 1.18). All-cause mortality, or all-cause hospitalization (over 12 months) occurred in 677 patients (47.3%) in the torsemide group and 704 patients (49.1%) in the furosemide group (HR, 0.94; 95% CI, 0.83 to 1.02). There were no significant differences in secondary outcomes of total hospitalizations over 12 months, or all-cause mortality or all-cause hospitalization over 30 days. There were similar results across prespecified subgroups (including patients with reduced, mildly reduced, or preserved ejection fraction). Important limitations of this trial include that the sample size was only half of the initial target, crossover occurred during follow-up, and dosing was left to the clinician's discretion.

BOTTOM LINE: For patients discharged after heart failure hospitalization, torsemide in comparison with furosemide did not result in a significant difference in all-cause mortality over 12 months.

CITATION: Mentz RJ, et al. Effect of torsemide vs furosemide after discharge on all-cause mortality in patients hospitalized with heart failure: The TRANSFORM-HF randomized clinical trial. *JAMA*. 2023;329(3):214-23.

Dr. Barot is the medical director of the virtual hospital at Atrium Health Wake Forest Baptist, and an assistant professor of hospital medicine at Wake Forest School of Medicine, both in Winston-Salem, N.C.

By Tony Dang, MD

3 VTEs and their effects on patients with AE-COPD

CLINICAL QUESTION: How common are venous thromboembolisms (VTEs) in patients presenting with acute exacerbation of chronic obstructive pulmonary disease (AE-COPD) and what is the effect on prognosis, hospital length of stay (LOS), and one-year mortality?


Dr. Dang

BACKGROUND: Worldwide, COPD is a leading cause of mortality, and many COPD patients will suffer from exacerbations. Many times, infections or environmental triggers are to blame, but the etiology remains elusive in up to one-third of patients. It is known that COPD patients are twice as likely to develop VTE compared to those without, and prior studies have shown variable prevalence of VTE during AE-COPD (2.1 to 29.1%). Missing this diagnosis contributes significantly to long-term morbidity and mortality.

STUDY DESIGN: Multicenter, prospective cohort study

SETTING: Patients admitted to 11 participating hospitals in China from January 2017 to January 2021

SYNOPSIS: 1,580 patients older than 40 years who had a diagnosis of COPD based on GOLD criteria and were admitted for acute exacerbation (worsening cough, dyspnea, or sputum production) were included in the analysis. Wells and revised Geneva Scores were calculated for each patient. All received computed tomography pulmonary angiogram (CTPA), lower extremity duplex ultrasounds, and cardiac ultrasounds within 48 hours of admission. Prevalence of VTE was 24.5% and of these 16.8% had pulmonary embolisms, which is consistent with prior studies. Of those with VTE, Wells and revised Geneva scoring classified 7.4% and 11.6% of patients, respectively, as a low probability. Patients with VTE were older, had COPD for a longer period, had more VTE risk factors, and had more chronic medical comorbidities. Their LOS was longer (13.7 versus 11.4 days, P <0.01) and 1-year mortality was higher (12.9% versus 4.5%, P <0.001). Patients presenting with purulent sputum had lower odds of having VTE (odds ratio [OR], 0.43) while patients with a history of VTE, cor pulmonale, tachypnea, elevated D-dimer, and elevated B-type natriuretic peptide had increased odds of having VTE (ORs, 15.2, 2.0, 1.1, 1.1, and 1.4, respectively). Limitations include patients from a single country, lack of data from outpatients, and interrater variability with risk scores.

BOTTOM LINE: There is an increased prevalence of VTE in patients presenting with AE-COPD which increases LOS and one-year mortality. In patients who present with AE-COPD where there is no apparent infectious or environmental cause, consider screening for VTE, especially if patients do not have purulent sputum or if they have a history of VTE.

CITATION: Liu X, et al. Prevalence, risk factor and clinical characteristics of venous thrombus embolism in patients with acute exacerbation of COPD: A prospective multicenter study. *Int J Chron Obstruct Pulmon Dis*. 2023;18:907-17.

4 Risk and benefit of secondary prevention with aspirin versus P2Y12 inhibitor in CAD patients

CLINICAL QUESTION: In patients with coronary artery disease (CAD), what is the difference in risk and benefit between secondary prevention with aspirin (ASA) versus a P2Y12 inhibitor?

BACKGROUND: Lifelong ASA is the mainstay of care for patients with CAD who require secondary prevention. This is predicated on studies from several decades ago. Subsequent studies examining P2Y12 monotherapy versus ASA have had inconsistent results.

STUDY DESIGN: Systematic review and meta-analysis

SETTING: Seven randomized clinical trials from 1996 to 2021 were found to meet the criteria for analysis.

SYNOPSIS: 24,325 patients were included in the analysis, mostly older men from Europe who had risk factors for CAD. Many also presented with acute myocardial infarction (MI) or had percutaneous coronary intervention. Of these patients, 12,178 received P2Y12 monotherapy (62% clopidogrel, 38% ticagrelor) and 12,147 received ASA monotherapy. The primary outcome was a composite of cardiovascular death, MI, and stroke. Secondary outcomes included major bleeding and net adverse clinical events (NACE) which was a composite of primary outcome plus major bleeding. Primary outcome was assessed at a median time of 493 days with the risk of primary outcome lower in the P2Y12 group compared to ASA monotherapy (hazard ratio [HR], 0.88; 95% CI, 0.79 to 0.97, P=0.012). NACE risk was lower in the P2Y12 arm compared with ASA (HR 0.89; 95% CI, 0.81 to 0.98, P=0.020). Furthermore, P2Y12 monotherapy was associated with a lower risk of myocardial infarction, any gastrointestinal bleeding, stent thrombosis, and hemorrhagic stroke (HRs, 0.77 0.75, 0.42, and 0.43 respectively). Effects were probably underestimated due to limited follow-up time. Limitations include no patients on prasugrel, open-label design in four of the seven included trials, and variable study definitions.

BOTTOM LINE: In patients with established CAD, the use of P2Y12 monotherapy reduced the risk of the primary composite outcome, though this was mainly driven by a reduction in MI. It also was associated with a reduction in gastrointestinal bleeding and hemorrhagic strokes when compared to ASA. In select patients, it is reasonable to consider P2Y12 monotherapy for secondary prevention of CAD.

CITATION: Gragnano F, et al. P2Y12 inhibitor or aspirin monotherapy for secondary prevention of coronary events. *J Am Coll Cardiol*. 2023;82(2):89-105.

Dr. Dang is a hospitalist at Atrium Health in Charlotte, N.C.

By Chi Huang, MD, FACP, SFHM

5 Cefepime versus piperacillin-tazobactam in adults hospitalized with acute infection

CLINICAL QUESTION: Are there increased adverse outcomes with the utilization of cefepime or piperacillin-tazobactam?

BACKGROUND: Hospitalists frequently prescribe cefepime or piperacillin-tazobactam for antipseudomonal coverage. There have been reports stating that there is an increased incidence of change in mental status in the use of cefepime. There have been studies indicating a possible association of acute kidney injury with piperacillin-tazobactam specifically when used concurrently with vancomycin.


Dr. Huang

STUDY DESIGN: 1:1 matched randomization

SETTING: Emergency department, medical inpatient unit, or ICU at one U.S. hospital.

SYNOPSIS: This study analyzed 2,511 patients over the age of 18 prescribed antipseudomonal antibiotics from November 10, 2021, to October 7, 2022, in the emergency department, medical inpatient unit, or ICU at Vanderbilt University Medical Center in Nashville, Tenn. The patient population had a median age of 58 years with 42.7% being female. The primary outcome was acute kidney injury (AKI) or death within 14 days. Secondary outcomes were major adverse kidney events and number of days alive free of delirium or coma within the 14 days. After the patients were randomized to a 1:1 ratio, the patient was provided the antibiotic and the clinician decided on the duration of treatment.

There was no difference noted between the cefepime and piperacillin-tazobactam groups for death or the highest stage of AKI by the 14th day. [OR, 0.95; 95% CI, 0.80 to 1.13), P=.56] The cefepime group experienced fewer days alive and increased days with delirium and coma as compared with the piperacillin-tazobactam group within the first 14 days (11.9 days versus 12.2 days; OR, 0.79; 95% CI, 0.65 to 0.95).

BOTTOM LINE: Piperacillin-tazobactam did not show an increased rate of AKI as compared to cefepime. Cefepime had an increased number of days with delirium, coma, and death within 14 days as compared to piperacillin-tazobactam. Limitations include the patient receiving antibiotics for only a median duration of three days and that the study was comparing between only two antibiotics.

CITATION: Qian ET, et al. Cefepime vs piperacillin-tazobactam in adults hospitalized with acute infection The ACORN randomized clinical trial. *JAMA*. 2023;330(16):1557-67.

6 Time to benefit of SGLT-2 inhibitors among patients with HF

CLINICAL QUESTION: What is the time to benefit for patients with heart failure (HF) and prescribed a sodium-glucose cotransporter-2 (SGLT-2) inhibitor?

BACKGROUND: SGLT-2 inhibitors are an effective medication for patients with heart failure and preserved (HFpEF) or reduced ejection fraction (HRrEF).

STUDY DESIGN: Comparative effectiveness study

SETTING: The authors conducted a systematic review of the literature up to the date of September 5, 2022. 636 articles were identified, and 449 papers were excluded due to meeting the exclusion criteria of a meta-analysis, review, nonhuman research study, correspondence, or editorial. Ultimately, the researchers settled five trials for the analysis: EMPEROR Preserved; EMPEROR-Reduced; DAPA-HF; SOLOIST-WHF; and DELIVER. The data was reconstructed, and the authors analyzed the individualized time-to-event data set.

The study population consisted of 21,947 patients in the five trials with median age greater than 65 years, 35.7% female. The primary outcome was a composite of cardiovascular (CV) death and worsening heart failure, while the secondary outcomes were cardiovascular deaths, all-cause mortality, and hospitalization for heart failure.

SYNOPSIS: The Kaplan-Meier curve of the pool data from the five studies demonstrated a consistently decreased incidence of CV death or worsening of heart failure for those patients receiving an SGLT-2 inhibitor (HR, 0.77; 95% CI, 0.73 to 0.82, *P* <0.01). Moreover, there was a reduction over time with SGTL-2 inhibitors that reached statistical significance by day 26 and sustained significance at day 118. There were several limitations to this comparative effectiveness research study that relied on an administrative database. To begin with, even though the five studies selected had similarities, differences and heterogeneity still exist. The SGLT-2 inhibitors were different medications pitted against a placebo.

BOTTOM LINE: SGLT-2 inhibitors may take effect in patients with HFpEF and HFrEF as early as 26 days and have a sustained benefit at 3.93 months. More studies should be conducted to further define the association.

CITATION: Vaduganathan M, et al. SGLT2 inhibitors in patients with heart failure: a comprehensive meta-analysis of five randomised controlled trials. *Lancet*. 2022;400(10354):756-67.

Dr. Huang is the specialty medical director at Advocate Health, and an associate professor of internal medicine, at Wake Forest School of Medicine, both in Winston-Salem, N.C. Disclosure: Dr. Huang is on the scientific advisory board for Medicus Tek and is a hospital medicine editor for Dynamed/EBSCO.

By Jessica McCutcheon, MD

7 Reliability of admission procalcitonin testing for capturing bacteremia across the sepsis spectrum

CLINICAL QUESTION: Can serum procalcitonin reliably detect bloodstream infections upon hospital admission?


Dr. McCutcheon

BACKGROUND: Hospitalists frequently manage patients with bacteremia, which is often associated with sepsis and an elevated mortality risk. Rapid initiation of treatment is crucial for improving outcomes. It is also imperative that we incorporate diagnostic stewardship into our decisions. The Surviving Sepsis Campaign has not previously supported procalcitonin use for sepsis diagnosis. This study wanted to look at the performance of procalcitonin for detecting bloodstream infections on admission in a real-world setting.

STUDY DESIGN: Retrospective, observational, cohort study

SETTING: Cerner HealthFacts database, electronic health record data from 65 U.S. hospitals

SYNOPSIS: This study looked at 74,958 patients at 65 U.S. hospitals, analyzing real-world data on the utilization of procalcitonin in patients admitted with potential bloodstream infections. They included patients 18 years or older who had blood cultures and procalcitonin ordered within 24 hours of admission. The procalcitonin cutoff used was 0.5 ng/mL for positivity. Procalcitonin levels differed by bloodstream pathogen and between disease severities. For detecting bloodstream infections overall, procalcitonin had a sensitivity of 68.2%, a specificity of 65.6%, a positive predictive value of 23.1%, and a negative predictive value of 93.2%. Although the negative predictive value was high, the authors note this should be interpreted with caution keeping in mind the prevalence of bloodstream infections and the possibility of pretreatment with antibiotics impacting blood culture results. Empiric antibiotic administration was similar despite negative or positive procalcitonin levels, and therefore testing did not influence the treatment decision.

BOTTOM LINE: The use of procalcitonin at a cutoff of 0.5 ng/mL on admission to detect bloodstream infections is not reliable given the risk of missed infection and the fact that procalcitonin results did not seem to alter the treatment decision for antibiotic administration.

CITATION: Lawandi A, et al. Reliability of admission procalcitonin testing for capturing bacteremia across the sepsis spectrum: Real-world utilization and performance characteristics, 65 U.S. hospitals, 2008–2017. *Crit Care Med*. 2023;51(11):1527-37.

8 Pitavastatin to prevent cardiovascular disease in HIV infection

CLINICAL QUESTION: Does pitavastatin decrease major adverse cardiovascular events (MACEs) in patients infected by the human immunodeficiency virus (HIV) who are on antiretroviral therapy (ART) and who are at low to moderate risk of cardiovascular disease?

BACKGROUND: HIV is a common global infection and patients with HIV infection are at significantly increased risk of atherosclerotic cardiovascular disease (ASCVD), such as myocardial infarction and stroke, compared to non-HIV patients. Now that ART is widely available and used, the cause of death for patients infected with HIV is frequently related to cardiovascular disease. ASCVD risk scores traditionally used for initiating statins do not incorporate the increased cardiovascular risk associated with HIV infection. It is postulated that the excess risk remains even when traditional risk factors are addressed and may be related to underlying immune activation and inflammation. This study highlights that pitavastatin use can decrease MACEs in patients with HIV who are on antiretroviral therapy.

STUDY DESIGN: Multicenter, randomized, placebo-controlled trial (REPRIEVE)

SETTING: 7,769 people aged 40 to 75 years with low to moderate CV risk with HIV on ART were recruited from 145 sites in 12 different countries

SYNOPSIS: This trial was a multinational, randomized, placebo-controlled, efficacy study where patients were randomized to receive pitavastatin or placebo. The participants were between the ages of 40 and 75 years and on ART therapy, with a low-to-moderate risk of ASCVD. Patients with known ASCVD were excluded from the trial. The median calculated 10-year ASCVD risk score was 4.5%. Pitavastatin was used because of its low interaction risk with ART. The primary outcome was occurrence of a MACE. Data showed that MACEs were significantly lower in the pitavastatin group, with incidence being 4.81 per 1,000 person-years versus 7.32 per 1,000 person-years in the placebo group (HR, 0.65; *P*=.002). The trial was stopped early due to the efficacy of pitavastatin at lowering the incidence of MACE versus placebo (35% risk reduction) over the median follow-up of 5.1 years. The authors report the five-year NNT is 106.

Although non-fatal adverse events were similar, the pitavastatin group had slightly higher rates of diabetes mellitus and myopathy or myalgia of grade 3 or higher. The use of only pitavastatin for treatment is a limitation of this study, making the results specific to this drug.

BOTTOM LINE: Pitavastatin can reduce the risk of major cardiovascular events in people with HIV infection on ART, especially those in the moderate cardiovascular risk group. It is unclear if using a different statin that does not interact with the patient's ART would provide the same benefit.

CITATION: Grinspoon SK, et al. Pitavastatin to prevent cardiovascular disease in HIV infection. *N Engl J Med*. 2023;389(8):687-99.

Dr. McCutcheon is a hospitalist at Atrium Health in Charlotte, N.C.

By Amrit Singh Pannu, MBBS

9 DAPT versus alteplase for patients with minor non-disabling acute ischemic stroke

CLINICAL QUESTION: Is dual antiplatelet therapy (DAPT) non-inferior to intravenous thrombolysis in patients with minor non-disabling acute ischemic stroke?


Dr. Pannu

BACKGROUND: Intravenous thrombolytics are recommended for patients with acute ischemic stroke within 4.5 hours of symptom onset. Prior clinical trials including PRISMS, POINT, and CHANCE studies had confirmed the efficacy and safety of DAPT.

STUDY DESIGN: Multicenter, randomized, open label, blinded non-inferiority trial.

SETTING: 38 hospitals in China from October 2018 through April 2022

SYNOPSIS: 760 patients with acute minor non-disabling ischemic stroke (NIHSS score less than or equal to 5 with less than or equal to 1 point on single-item scores such as vision, language, neglect, or single-limb weakness) were randomized in a 1:1 ratio to receive DAPT or IV alteplase within 4.5 hours of symptoms. The DAPT group received aspirin and clopidogrel for 12 (+/-2) days followed by guideline-based antiplatelet treatment until 90 days. Patients with pre-stroke disability scores greater than 2, a history of intracerebral hemorrhage, or a definite indication for anticoagulation were excluded. Clinical assessments were performed at baseline, 24 hours, and seven, 12, and 90 days after randomization with excellent functional outcomes defined by modified Rankin scores 0 to 1. A generalized linear model with binomial distribution and link identity function was performed for the primary outcome, -4.5 % was used as a non-inferiority margin in this trial. 93.8% of patients in the DAPT group compared to 91.4 % on alteplase had modified Rankin scores of 0 or 1 at 90 days. One patient in the DAPT group experienced symptomatic intracranial hemorrhage along with six patients with other bleeding events compared to three and 19 patients respectively in the alteplase group.

BOTTOM LINE: DAPT is non-inferior to intravenous alteplase with regards to excellent functional outcome at 90 days among patients

with minor non-disabling acute ischemic stroke treated within 4.5 hours of symptom onset and is associated with less bleeding as well as fewer early neurological deterioration events.

CITATION: Chen HS, et al. Dual antiplatelet therapy vs alteplase for patients with minor nondisabling acute ischemic stroke: The ARAMIS randomized clinical trial. *JAMA*. 2023;329(24):2135-44.

10 Early restrictive or liberal fluid management for sepsis-induced hypotension

CLINICAL QUESTION: What's the effect of restrictive versus liberal fluid resuscitation strategies in sepsis-induced hypotension on 90-day mortality?

BACKGROUND: Intravenous fluid resuscitation is the mainstay therapy for sepsis despite the vasodilatory nature of septic shock, and higher volumes may be associated with higher mortality with pathological edema.

STUDY DESIGN: Multicenter, randomized, unblinded, superiority trial

SETTING: 60 U.S. centers from March 2018 to January 2022

SYNOPSIS: 1,563 patients were enrolled, randomized to restrictive and liberal fluid resuscitation groups in a 1:1 ratio within four hours of sepsis-induced hypotension diagnosis, and followed for 24 hours. Patients were monitored for signs of tissue hypoperfusion with vital signs, lactic acid, and bedside echocardiographic monitoring. Lactated Ringers was the most common type of fluid administered, and norepinephrine was the first-line vasopressor. 90-day mortality point estimates in two treatment groups, compared using the Z test with Greenwood's standard error and 95% Wald confidence interval, were found to be 14% in the restrictive group and 14.9% in the liberal group. The fluid difference between the groups was 2,134 ml with 59% vasopressor use in the restrictive group compared to 37.2% in the liberal group. A similar number of serious adverse events (21 and 19) were reported in both groups, along with three instances of potential vasopressor-related extravasation among 500 patients who received peripherally administered vasopressors.

BOTTOM LINE: In patients with sepsis-induced hypotension no significant difference in 90-day mortality was found among restrictive and liberal fluid resuscitation strategies. Secondary outcomes including the number of days free from ventilator, renal replacement therapy, vasopressor use, days out of intensive care unit and out of hospital were also comparable.

CITATION: National Heart, Lung, and Blood Institute Prevention and Early Treatment of Acute Lung Injury Clinical Trials Network, et al. Early restrictive or liberal fluid management for sepsis-induced hypotension. *N Engl J Med*. 2023;388(6):499-510.

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By Christina Rinaldi, DO

11 Moderate-intensity statin with ezetimibe combination therapy versus high-intensity statin monotherapy in patients at very high risk of ASCVD

CLINICAL QUESTION: Can you use a moderate-intensity statin with ezetimibe combination therapy for very high-risk (VHR) patients with ASCVD?

Dr. Rinaldi

BACKGROUND: The ACC/AHA guidelines recommend the use of high-intensity statin therapy for very high-risk patients with ASCVD. However, drug-related adverse effects are one limiting factor leading to its underuse. The RACING trial demonstrated the noninferiority of a moderate-intensity statin with ezetimibe combination therapy compared with high intensity for the 3-year composite cardiovascular outcomes in patients with ASCVD; however, whether the effect is preserved among VHR patients is not known.

STUDY DESIGN: Post hoc analysis of multicenter, randomized, clinical trial

SETTING: 26 centers in Korea

SYNOPSIS: Of the 3,780 patients, 1,511 adults had very high-risk ASCVD and were randomly assigned to receive either ezetimibe/moderate-intensity statin combination therapy (rosuvastatin, 10 mg plus ezetimibe, 10 mg) or high-intensity statin monotherapy (rosuvastatin, 20 mg). VHR patients were defined as having a history of multiple major ASCVD events or one major ASCVD event in addition to various high-risk conditions by the 2018 AHA/ACC guidelines. The primary endpoint was the occurrence of cardiovascular death, coronary or peripheral revascularization, hospitalization for cardiovascular events, or nonfatal stroke within three years after randomization. This study showed that there was no significant difference in the primary endpoint between the combination therapy and high-intensity statin monotherapy groups for both VHR patients (85 of 757 [11.2%] versus 88 of 754 [11.7%]; HR, 0.96; 95% CI, 0.71 to 1.30) and non-VHR patients (87 of 1,137 [7.7%] versus 98 of 1,132 [8.7%]; HR, 0.88; 95% CI, 0.66 to 1.18) without statistical heterogeneity (*P* for interaction =.67). There was no evidence for heterogeneity of the treatment effect between VHR and non-VHR patients (*P* for interaction =.67), but a lack of statistical power limits drawing definitive conclusions about the absence of differential effects.

BOTTOM LINE: For VHR patients with ASCVD a moderate-intensity statin with ezetimibe combination therapy was comparable to high-intensity statin monotherapy in terms of a three-year primary endpoint and was associated with lower drug intolerance, greater LDL-C level reduction, and achievement of LDL-C level less than 70 mg/dL.

CITATION: Lee SJ, et al. Moderate-intensity statin with ezetimibe combination therapy vs high-intensity statin monotherapy in patients at very high risk of atherosclerotic cardiovascular disease: A post hoc analysis from the RACING randomized clinical trial. *JAMA Cardiol*. 2023;8(9):853-8. Erratum in: *JAMA Cardiol*. 2023;8(9):891.

12 Aspirin or LMWH for thromboprophylaxis after a fracture

CLINICAL QUESTION: Can you use aspirin as a safe alternative to low-molecular-weight heparin (LMWH) for thromboprophylaxis in patients with an extremity fracture?

BACKGROUND: Many guidelines recommend thromboprophylaxis therapy to reduce the risk of venous thromboembolism and its complications after traumatic orthopedic injuries. Even though there is a preference amongst patients for aspirin, given the lower cost and oral administration, there are limited studies comparing aspirin and LMWH among patients who have been treated operatively.

STUDY DESIGN: Pragmatic, multicenter, randomized, noninferiority trial

SETTING: 21 trauma centers in the U.S. and Canada

SYNOPSIS: This study included 12,211 patients 18 years of age or older who had an extremity fracture that was treated operatively or a fracture of the pelvis or acetabulum that was treated operatively or nonoperatively. Patients were randomly assigned to receive LMWH at a dose of 30 mg twice daily or aspirin at a dose of 81 mg twice daily while they were in the hospital. After hospital discharge, the patients continued to receive thromboprophylaxis according to the clinical protocols of each hospital. During the 90-day follow-up period, aspirin was non-inferior to LMWH (P <0.001) but not superior (P=0.63) in preventing death from any cause. Deep-vein thrombosis occurred in 2.51% of patients in the aspirin group and 1.71% in the LMWH group (difference, 0.80 percentage points; 95% CI, 0.28 to 1.31). The incidence of pulmonary embolism (1.49% in each group), bleeding complications, and other serious adverse events were similar in the two groups. One of the limitations of this study was the differences in the duration of thromboprophylaxis therapy after hospital discharge, which may have influenced outcomes.

BOTTOM LINE: Thromboprophylaxis with aspirin was non-inferior to LMWH for the prevention of fatal events in patients with orthopedic trauma and was associated with low frequencies of deep-vein thrombosis, pulmonary embolism, and death from any cause at 90 days.

CITATION: Major Extremity Trauma Research Consortium (METRC), et al. Aspirin or low-molecular-weight heparin for thromboprophylaxis after a fracture. *N Engl J Med*. 2023;388(3):203-13.

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By Kinchit Shah, MD

13 Comparison of standard dose, high dose, and therapeutic anticoagulation in hypoxemic COVID-19 patients

CLINICAL QUESTION: Does standard-dose prophylactic anticoagulation (SD-PA), high-dose prophylactic anticoagulation (HD-PA), or therapeutic anticoagulation (TA) have a greater benefit in patients with hypoxemic COVID-19 pneumonia?

Dr. Shah

BACKGROUND: Due to the nature of heightened thrombotic risk with COVID-19-related inflammation, platelet activation, and endothelial dysfunction leading to microvascular thrombosis, it is important to determine whether TA or HD-PA decreases mortality and/or disease duration compared to SD-PA.

STUDY DESIGN: Open-label, multicenter, randomized, clinical trial

SETTING: 23 health centers in France from April 14 to December 13, 2021

SYNOPSIS: The ANTICOVID trial included 334 individuals. In randomized patients, CT pulmonary angiography was required to be performed during the 72 hours before or up to 24 hours after inclusion. The use of HD-PA and SD-PA had similar probabilities of favorable outcomes, as did TA compared with SD-PA and TA compared with HD-PA. Net clinical outcome was met in 29.8% of patients receiving SD-PA, 16.4% receiving HD-PA, and 20.0% receiving TA. Moreover, HD-PA and TA use significantly reduced thrombosis compared with SD-PA. At day 90 there were no significant differences in composite secondary efficacy and safety outcomes among the three groups, nor in all-cause death and quality of life.

BOTTOM LINE: The results of the ANTICOVID trial indicate that neither HD-PA nor TA use improved the primary hierarchical outcomes—death and time to clinical improvement—when compared with SD-PA use among patients with hypoxemic COVID-19 pneumonia. However, HD-PA resulted in significantly better net clinical outcomes by decreasing the risk of de novo thrombosis.

CITATION: Labbé V, et al. Effects of standard-dose prophylactic, high-dose prophylactic, and therapeutic anticoagulation in patients with hypoxemic COVID-19 pneumonia: The ANTICOVID randomized clinical trial. *JAMA Intern Med*. 2023;183(6):520-31.

14 Hydrocortisone in severe CAP

CLINICAL QUESTION: Do the anti-inflammatory and immunomodulatory effects of glucocorticoids decrease mortality among patients with severe community-acquired pneumonia (CAP)?

BACKGROUND: CAP remains a major public health issue. Seven randomized controlled trials have shown that glucocorticoids have positive effects in patients with CAP of varying severity. However, except for one trial, none of them have shown a between-group difference regarding mortality. The Community-Acquired Pneumonia: Evaluation of Glucocorticoids (CAPE COD) trial evaluated whether early treatment with hydrocortisone reduced mortality at 28 days among patients admitted to intensive care for severe CAP.

STUDY DESIGN: Double-blind, randomized, controlled, superiority trial

SETTING: 31 French centers by the members of the Clinical Research in Intensive Care and Sepsis-Trial Group for Evaluation and Research in Sepsis Network

SYNOPSIS: A total of 800 patients had undergone randomization when the trial was stopped after the second planned interim analysis. Data from 795 patients showed that by day 28, death had occurred in 25 of 400 patients (6.2%; 95% CI, 3.9 to 8.6) in the hydrocortisone group, and in 47 of 395 patients (11.9%; 95% CI, 8.7 to 15.1) in the placebo group. In the treatment group, patients received 200 mg daily hydrocortisone for either four or seven days as determined by clinical improvement, followed by tapering for a total of eight or 14 days.

Patients were classified as severe CAP if they met at least one of four criteria: the initiation of mechanical ventilation (invasive or non-invasive) with a positive end-expiratory pressure of at least 5 cm of water; the initiation of the administration of oxygen through a high flow nasal cannula with a ratio of the partial pressure of arterial oxygen to the inspired fraction of oxygen (PaO2:FIO2) of less than 300, with a FIO2 of 50% or more; for patients wearing non-breathing mask, an estimated PAO2:FiO2 ratio of less than 300, according to prespecified charts; or a score of more than 130 on the Pulmonary Severity Index. Patients with septic shock were excluded because the pathophysiological processes and role of glucocorticoids may differ.

BOTTOM LINE: Among patients with severe CAP being treated in the intensive care unit, those who received hydrocortisone had a lower risk of death by day 28 than those who received a placebo.

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

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By Gemechis Tollera, MD

15 DOACs versus warfarin across the spectrum of kidney function

CLINICAL QUESTION: How safe are direct oral anticoagulants (DOACs) to use in kidney dysfunction?


Dr. Tollera

BACKGROUND: DOACs are increasingly being used in patients with kidney dysfunction. DOACs are cleared, at least in part, renally. Guidelines suggest dose reduction when additional factors are present. However, patients with kidney dysfunction may also receive reduced doses due to clinicians' concerns for major bleeding. This study assesses the safety of DOACs along the continuum of renal function.

STUDY DESIGN: Patient-level meta-analysis

SETTING: Multiple sites, four major studies reviewed

SYNOPSIS: This meta-analysis used the COMBINE AF database. COMBINE AF (Collaboration Between Multiple Institutions to Better Investigate Non-Vitamin K Antagonist Oral Anticoagulant Use in Atrial Fibrillation) uses data from well-known studies: RE-LY, ROCKET AF, ARISTOTLE, and ENGAGE AF-TIMI 48. In this study of 71,683 patients, the mean CrCl was 75.5 ml/min. As expected, the incidence of stroke or systemic embolism, major bleeding or intracranial hemorrhage (ICH), and death increased with worsening kidney function. The hazard of major bleeding did not change across continuous CrCl values down to 25 ml/min in patients randomized to standard dose DOAC as compared to warfarin (*P* for interaction=.61). Compared to warfarin, standard dose DOAC use resulted in a significantly lower hazard of ICH (6.2% decrease in hazard ratio per 10 ml/min decrease in CrCl). Use of a lower dose rather than standard dose DOAC was not associated with a significant difference in incident bleeding or ICH in patients with reduced kidney function but was associated with a higher incidence of death and stroke or systemic embolism.

BOTTOM LINE: Standard dose DOACs appear safe for most patients up to CrCl of 25. In the absence of contraindication, patients with atrial fibrillation and a CrCl down to 25 mL/min should receive a standard DOAC, with dose adjustment only as specified in trials or guidelines, rather than warfarin or a lower dose DOAC, to reduce the risk for stroke and/or death. A limitation of this study is that patients with CrCl of <30ml/min were only 0.7% percent of the study population. Additionally, of the two commonly used DOACs, apixaban was used more commonly in lower renal function than rivaroxaban in the study population.

CITATION: Harrington J, et al. Direct oral anticoagulants versus warfarin across the spectrum of kidney function: Patient-level network meta-analyses from COMBINE AF. *Circulation*. 2023;147(23):1748-57.

16 Associations of apixaban dose with safety and effectiveness outcomes in patients with atrial fibrillation and severe chronic kidney disease

CLINICAL QUESTION: Is the use of standard-dose apixaban based on creatinine criteria placing patients at higher risk of bleeding?

BACKGROUND: The U.S. Food and Drug Administration recommends apixaban dose reduction if a patient with renal dysfunction also meets at least one of either weight or age criteria. On the other hand, the European Medicines Agency indicates the reduced dose of apixaban for patients with CrCl 15 to 30 mL/min. Based on the creatinine criteria, up to 40% of patients with CrCl below 30ml/min may be prescribed standard dose apixaban. Does this put them at increased risk of bleeding?

STUDY DESIGN: Retrospective cohort

SETTING: 40 health systems in the U.S. participating in Optum Lab Data Warehouse

SYNOPSIS: Among 4,313 apixaban new users, 1,705 (40%) received 5 mg and 2,608 (60%) received 2.5 mg. Patients treated with 5 mg apixaban were younger (mean age, 72 versus 80 years), with greater weight (95 versus 80 kg) and higher serum creatinine (2.7 versus 2.5 mg/dL). The mean estimated glomerular filtration rate was not different between the groups (24 versus 24 mL/min/1.73 m2). The study authors report that, in patients with CKD 4 or 5, there was a 1.6 times increased risk of bleeding [95% CI, 1.04 to 2.54] with 5 mg apixaban versus 2.5 mg, without difference in stroke, systemic embolism, or death.

BOTTOM LINE: In advanced kidney disease (stage 4 or 5) not on hemodialysis, apixaban dose reduction appears reasonable due to the increased risk of bleeding without additional stroke or systemic embolism prevention benefits. This study supports recommendations by the European Medicines Agency.

CITATION: Xu Y, et al. Associations of apixaban dose with safety and effectiveness outcomes in patients with atrial fibrillation and severe chronic kidney disease. *Circulation*. 2023;148(19):1445-54.

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Working with Patient and Family Advisory Councils

Hospitalists can serve important roles in these groups

By Karen Appold

To achieve patient-centered care, a component of high-quality medical care, patients and their caregivers should be engaged in their health care decision-making processes, said Nikhil Sood, MD, a hospitalist at Banner Gateway Medical Center, a 286-bed urban adult community hospital in Gilbert, Ariz. One way for patients to get their voices heard is by serving on patient and family advisory councils (PFACs).

Dr. Sood

PFACs are comprised of former patients and their caregivers in addition to physicians, nurses, and ancillary staff. These formal groups focus on addressing challenges that patients and their families face, and also ensure that health care organizations remain committed to affordable and timely patient-centered care, Dr. Sood said.

"Patients and their families often have insights that hospitalists or other staff members don't have, making them great resources for sharing the overall care experience," said Amit Singh, MD, FAAP, a pediatric hospitalist attending in the department of pediatric hospital medicine at Cook Children's Medical Center, a 464-bed urban children's hospital in Fort Worth, Texas. "Whether it's helping to craft educational materials for discharge or working on how to better involve patients and families in their own care during hospitalization, there should be almost no project or initiative that doesn't include patient and family voices."

Dr. Singh

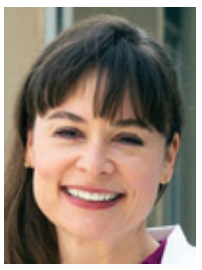
PFACs can be resources for institutions to learn how the care they provide affects patients and families. In addition to collecting data, PFACs can be sources of quality-improvement and patient-safety initiatives, Dr. Singh said. They can partner with clinicians in research opportunities and can serve as voices for patients and families who are new to the hospital or health system or those who don't feel empowered enough to speak for themselves.

Evidence is growing that meaningful patient and family engagement can help achieve the triple aim of better quality, better outcomes, and lower health care costs, and can also substantially reduce preventable harm.[1]

Studies show that when health care professionals partner with patients and families, it helps patients make more informed choices about their care, use medications more safely, practice more effective self-management, contribute to infection-control initiatives, and help reduce medical errors—all translating into measurable improvements in the quality and safety of care. Engaged patients better manage chronic conditions and have overall improved functioning.[1]

What PFACs do

Amanda Green, MD, FACP, HMDC, CPPS, SFHM, chief medical officer at Paris Regional Health, a 150-bed community hospital in Paris, Texas, believes that the most important function of patients and their caregivers serving on PFACs is to give hospitals feedback on their health care delivery. Patients' feedback about the clarity of discharge paperwork and medication reconciliation practices, for example, has been very valuable to hospitalists.



Dr. Green

Dr. Sood's PFAC is involved with multiple quality-improvement projects including patient safety, timely administration of pain medications, and fall prevention. Hospitalists serving on PFACs can play dual roles in these settings. They can address issues with nurse managers, therapy teams, and other ancillary service personnel involved in patient care during multidisciplinary rounds. Hospitalists can also provide recommendations to councils on how to address patient concerns and initiate change in organizational systems, processes, and workflows to enhance patients' experiences and outcomes.

Interacting with PFACs

As the physician director of experience at Cook Children's Medical Center, Dr. Singh partners with PFACs by making his colleagues aware of the council's work as well as looking for opportunities for new quality-improvement projects that a parent or PFAC team member can be involved in. For example, his institution is currently trying to determine how it can improve family-centered rounding processes so bedside nurses and attending physicians can round together with patients and families. "PFAC team members are uniquely poised to provide the patient and family perspective because they know the hospital systems and processes well given their experiences," he said.

Dr. Green leads her PFAC's quarterly meetings, which include dinner. She uses PowerPoint slides to highlight discussion topics. The hospital's chief executive officer, chief nursing officer, director of human resources, marketing director, and a board member attend; doctors are sometimes invited to listen to the feedback. Hospital leaders provide short presentations of interest from their area of expertise, either for educational purposes or to elicit input from community members. PFAC community members are invited to share their perspectives by also serving on other hospital committees such as those related to chest pain or strokes, or the patient safety and clinical quality committee.

Creating a PFAC team

When looking to create a PFAC, recruit hospital staff members to serve in the lead, logistics-coordinator, and recruitment-coordinator roles, Dr. Sood advised. "Hospitalists have become frontline in managing patients, and can have significant roles in PFACs," he said. Assign responsibilities according to each staff member's experience and training.

"Include staff members from multiple levels within a hospital system who are passionate about making positive changes," said Natalie Dorsey, MBA, BS, a parents as partners coordinator in the family engagement department at Cook Children's Medical Center.

Ms. Dorsey

"Identify patient and family advisors who are willing to speak up and provide constructive criticism," Dr. Sood said.

Added Ms. Dorsey, "Cast a wide net and include patients who have experienced a wide variety of diagnoses."

Sometimes Dr. Green has to ask certain members directly for their thoughts on a topic because they tend to be soft-spoken. "These introspective individuals usually have great insights," she said.

According to the Institute for Patient and Family-Centered Care, at least 50% of a PFAC's members should be patient and family advisors (PFAs) that reflect a community's diversity. A PFA should serve as a chair or co-chair.[2]

Try different outreach methods simultaneously to find the best possible candidates, Dr. Sood said. Post notices in the cafeteria and family lounges, send announcements through email and regular mail to patients and their guardians, and use social media. Ask current hospital volunteers to help with recruitment efforts.

Dr. Green asked the hospital's marketing director and risk director to recruit patients and caregivers who reported both positive and negative experiences. She called potential candidates to explain what a PFAC was and asked if they would be interested in serving. They strove

to have a diverse group in regard to gender, age, race, and religion.

When Dr. Green encounters patients who are very involved in their health care and offer improvement suggestions, she will invite them to participate. "Be upfront about what the commitment involves, such as attending a one-hour meeting quarterly," she said.

Next steps

In addition to recruiting members for your new council, you will need to define and establish a PFAC's mission, vision, and short and long-term goals. Have a clear vision for three-, six-, and 12-month goals, Dr. Sood said. Patient and family caregivers should participate in shaping a PFAC's structure and agendas.

Determine logistics, including meeting dates, times, and locations. Consider giving gift cards or providing free child and elder care or meals to encourage community members to participate, Dr. Sood said.

At the first PFAC meeting, give a welcome packet to each member. Everyone should briefly introduce themselves, Dr. Sood continued. Explain how patient and family advisors' feedback and ideas will be collected, used, and implemented. At the end of the meeting, discuss potential topics and agenda items for the next three to five meetings.

To sustain a PFAC, allocate adequate time and resources to meaningful topics, and cultivate personal relationships with advisors, Dr. Sood continued. Share how patient and family advisors' feedback has been helpful and how and when changes are made. Always treat patients and families as equal and valued team members.

As the PFAC chair, Dr. Green keeps minutes and presentation slides in a binder to review and provide accountability. She recommends letting PFAC members know how their feedback was implemented. For example, some members gave suggestions on how to improve comment cards. "We showed the group our changes based on their feedback," she said.

Each PFAC at Cook Children's Medical Center created a set of governing guidelines. "They help to set expectations for all parties involved," Dr. Singh said.

Families serving on PFACs are trained volunteers. During the training, attendees learn how to effectively share stories that are focused and concise, Ms. Dorsey said. For example, they learn how to choose language that will not alienate any department. Training also covers the principles of family-centered care, the Health Insurance Portability and Accountability Act, confidentiality, the value of having a PFAC for staff and parents, and the hospital's general volunteer rules.

Ms. Dorsey would advise hospitalists to attend meetings with an open mind, to be willing to hear the feedback families provide, and to take action based on their suggestions.

As a PFAC member, a hospitalist can communicate patient concerns to the council and provide recommendations to bring about changes in organizational systems, processes, and workflows to enhance the overall patient experience and outcomes, Dr. Sood said.

"By serving on PFACs, patients and their families help us understand their perspective of the health care environment, which then allows us to improve how we care for them," Dr. Green concluded. ■

Karen Appold is an award-winning journalist based in Lehigh Valley, Pa. She has more than 25 years of editorial experience, including as a newspaper reporter and a newspaper and magazine editor.

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Quality

Top 10 Challenges to QIPs

How to identify and overcome them

By Bryant Faria, MD, FACP, SFHM, Rupesh Prasad, MD, MPH, FACP, CHCQM-PHYADV, SFHM, Harvir Singh Gambhir, MD, FHM, Sarah Baron, MD, MS, SFHM, and Trushar Dungarani, DO, SFHM


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Hospitalists are uniquely positioned to drive quality-improvement (QI) initiatives across the health care continuum. Our daily interactions span diverse health care teams and specialties. Our care plans exert considerable influence on clinical outcomes, institutional performance metrics, financial outcomes, and patient-safety ratings. Though our role should facilitate engagement, patient care responsibilities can often overburden us, deterring involvement in quality improvement projects.

In this article, we highlight common challenges preventing hospitalists from pursuing quality improvement projects, or QIPs. More importantly, we provide practical strategies to overcome these barriers. Through these shared insights, we aim to empower hospitalists to use their expertise in shaping health care quality.

1 Imposter syndrome is real! Start by knowing that this feeling is common and many experts you know and respect have felt this at all stages of their career. Don't bury this thought: talk about it, journal it, and avoid the silence. No one is an expert in quality improvement or patient safety when they start. Setting small and realistic expectations early on will help get you over the hump to realizing what you have already learned. Focus on the process rather than the outcome. Failure doesn't equal imposter. If you have an educational gap, find out what the QI/PS language is at your institution and find small training opportunities and ways to get a little expertise. There may be free courses at your institution you can take advantage of or resources through SHM (Converge pre-course, webinars, special interest groups, committees).

2 Values: What is your reason for doing QI? And for this project in particular? Adverse events, publication, promotion, or being "voluntold" are all reasons for doing QI that we've experienced. Just as we all came to medicine for our own reasons, we all come to QI based on our own personal values. But knowing why you are taking the time and putting in your effort to learn QI and work on the particular project helps create a story not only for yourself, but for those around you. Understanding the "why" of your teammates gives you insight into the best way to demonstrate change and convince your team of success. Being able to state your values driving this work and the values of those around you motivates you and your team to this goal and beyond.

3 Alignment: Try to align your project goals with the long-term goals and objectives of the organization, such as hospital ratings and quality-based reimbursement programs. This will help with getting buy-in

from the C-suite and administrative leadership and in obtaining the resources and/or personnel for the project. Aligning goals with the language and priorities of frontline caregivers, not only in hospital medicine but also in pharmacy, therapy, nursing, or social work, will create a sense of urgency to engage with your project as well. In the words of John Kotter, "Establishing a sense of urgency is crucial in gaining needed cooperation."[1] One way to achieve this is by using eye-catching visual aids like videos or graphics. This will ultimately also aid the process of change management needed to implement the project.

4 **Size:** Start with one project, and one project only. Make it small, even smaller, smallest! New QI enthusiasts want to save the world, and so do we, but QI experts recommend biting off chunks that you can chew. Smaller projects mean proving the possibility of success on a smaller scale, and it also means less time (see #7), fewer data to manage (see #5), fewer personalities to manage, and similar opportunities to scale up if your projects work. If you can't make a project work on a small scale, it is not going to work on a large scale, so save yourself the effort and start small—one unit, one provider, or even one patient is an appropriate scale to start making changes.

5 **Data.** Data are essential in any QI project to help understand the current state and monitor changes for the future state. Ask about data availability before you commit yourself to a project. Without data, QI is going to be hard! But there are also no perfect data. Where there is a paucity of readily available data, manual collection pre- and post-intervention can help demonstrate proof-of-concept, or POC. This proof-of-concept and outcomes data may then be leveraged to market the project idea to the C-suite and the frontline. Data can help to prioritize goals and allocate resources. It is also important to set measurable targets and goals, based on the health system's strategic goals. IT and operations support could be used to develop real-time dashboards to get actionable insights throughout the project. These are also useful while sharing and presenting to a wider audience.

6 **Team.** Recognizing that projects extend beyond a single hospitalist, building a team will ensure your project's sustainability and lead you one step closer to success. Central to team building is the identification of interested parties—individuals who have a vested interest in your project's outcomes. They come from various backgrounds and can include frontline staff, administrators, and even community members. And don't forget to make friends wherever you go in the hospital—everyone wants to help their friends out!

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Identifying other participants can be challenging. While clinical staff may be most obvious, reaching out to those in influential roles such as medical directors and division chiefs may also yield helpful insight. Process mapping can shed light on key players affected by your project that may not be top of mind. Building a diverse team that is invested in your project will provide you with the perspectives, buy-in, and resources needed for an effective and sustainable project.

7 **Time and Effort:** Expect to put in some time up front when you're learning a new skill. Keep a time log of how much effort you put in so that you can quantify effort when the time comes to ask. Smaller projects mean less time and also fewer data. Finishing a project with a completed storyline is more important than the number of projects or committees you're on. This strategy can increase your chances of getting protected time (research time, administrative time) in the future. Make it count more than once: present it locally and at national conferences, and based on your responsibilities, you can make your project a win in multiple contexts (in your role as unit director, administrator, or quality expert).

8 **Effective Communication:** Effective communication will foster collaboration throughout the lifecycle of your project. It is essential to initiate communication at the start of your project to seek input and establish an open line of communication with your team—this will provide you with continuous feedback and will also establish rapport between team members to ensure their sustained investment.

Tailoring communication to each individual and the role they play in your project is crucial. You must understand what motivates each interested party and address their concerns in a way that aligns with their interests and values. Consider examples such as presenting efficiencies in workflows to your C-suite, throughput metrics to a medical director, and patient stories to frontline staff. Acknowledging the individual impact of your project's intervention on each person will ensure your team remains engaged.

9 **Failure is normal:** Failure in the world of QI is a large part of the journey to success. Every project has the potential to fail, particularly early in your career. The quicker you fail early when the stakes are lower, the higher the chances of succeeding when the project is in front of a larger audience. In fact, the more you fail, especially early on in the project, the more you and your team learn. The faster you recognize your failure, the less time and fewer resources you have wasted. As per the Institute for Healthcare Improvement, the expectation is that 15% of projects fail; fewer failures are an indication that your team isn't taking enough leaps.[2] Failure is an opportunity to identify gaps, develop new processes, search for mentors, and expand your network to increase the chances of success for the next project or change cycle. Let failures be on your path to success rather than letting failures stop you from success. And celebrate the small wins because you won't always have wins.

10 **Future goals and opportunities:** There is a wide scope of opportunities in QI at different levels from beginner to expert, educator, champion, and leader. As in research, opportunities abound, from running projects, to teaching and mentoring others through projects, to setting system-wide QI priorities. There are as many job titles as there are QI professionals, e.g., chief quality officer or CQO, departmental (or divisional) quality chair or director, medical quality director for a residency program, and chair for a quality committee. We have held many of these roles, some even when we were just starting. And, of course, so many hospitalists practice QI daily without a specific title, because this has become a part of our job! Leveraging your QI expertise to a new title might even be available to you today.

Conclusion

As hospitalists, we possess distinct advantages in driving QI initiatives in healthcare. Our influence extends beyond individual patient care and can shape the broader landscape of healthcare quality. To face the challenges of engaging in QI, this article has aimed to equip readers with practical strategies to overcome common barriers in QI work. From navigating imposter syndrome to harnessing the power of data and effective communication, we hope each insight has paved the way for you to achieve transformative change at your own institutions. ■

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Pediatric Hospitalists as Physician Advisors Managing Utilization and Denials for Health Systems

A Children's Health System of Texas and Division of PHM collaborative

By Katherine Johnson, MD, Bianca Barraza, MHA, BSN, RN, Jodi Landon, BSN, RN, and Vineeta Mittal, MD, MBA

The physician advisor role has been evolving in adult medicine for many years. Hospitalists are well suited for this role given their broad knowledge base regarding health care systems and their innate ability to collaborate with multiple disciplines in a complex medical system. Despite this, investment in this role in pediatric hospital systems is far less common and represents missed opportunities for improving hospital reimbursement, limiting capacity restraints, and ensuring regulatory compliance, all while maintaining high-value care delivery.

Children's Health System of Texas operates 562 pediatric beds in two acute-care hospitals in north Texas with approximately 17,199 discharges in 2022. The primary location is a quaternary care, free-standing, 490-bed children's hospital in Dallas and the secondary location is a 72-bed children's hospital in Plano, Texas. The system is affiliated with the University of Texas Southwestern Medical Center (UT Southwestern). Hospital bed types include medical/surgical, neonatal, cardiac, pediatric intensive care, and psychiatric beds.

Before 2020, the hospital system had limited physician leadership within the utilization management (UM) department. The hospital system, like many other health systems, contracted with a third-party vendor to determine the medical necessity of care, patient status (observation or inpatient), and denials management through peer-to-peer calls with insurance companies for hospitalized patients. Although this allowed primary attending physicians the ability to focus on direct patient care, third-party vendors have certain limitations. These limitations include only partial access to a health system's electronic health records, no access to the primary medical team, lack of understanding of the intricacies of the health system, inability to identify payer or hospital denial trends and thus initiate change, and a significant gap in pediatric-specific expertise in supporting UMat a large health system.

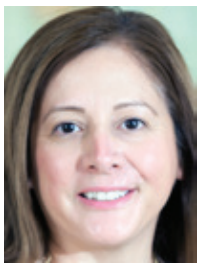
In early 2020, the health system's administration partnered with UT Southwestern's division of pediatric hospital medicine (PHM) and department of pediatrics to start a novel pediatric hospitalist-led physician advisor program with the following goals:

- Review medical necessity of care for the health system
- Improve denials management through a robust peer-to-peer and appeals program
- Develop a fellowship elective to train PHM fellows about UM

Within 15 months, the hospitalist-physician advisor peer-to-peer role had an approval rate of 70% compared to 35% for the contracted third-party vendor. This success led to the program's expansion with three additional pediatric-hospitalist faculty with dedicated time. All four physician advisors continued their clinical practice as pediatric hospitalists, which was crucial to the program's collaborative success. Given their deep knowledge of health systems and peer-to-peer processes and their ability to collaborate with multiple specialties, pediatric hospitalists were well-positioned to excel in this role. With a broad scope of pediatric-specific knowledge and expertise in caring for children with medical complexity, and as natural problem solvers and change advocates, pediatric hospitalists in these crucial roles gave a significant advantage to the program.

In the last two years, the program has grown significantly in peer-to-peer, appeals, prior authorization management, and scholarly activity with fellowship-curriculum development.


Dr. Johnson


Ms. Barraza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Dr. Johnson is a pediatric hospitalist in the division of pediatric hospital medicine at the University of Texas Southwestern Medical Center, and medical director of utilization management for the Children's Health System of Texas, both in Dallas. Ms. Barraza is vice president of centralized medication authorization and utilization management at Children's Health System of Texas in Dallas. Ms. Landon is the senior vice president of managed care for the Children's Health System of Texas and executive advisor for the new pediatric campus in Dallas. Dr. Mittal (@VMittalMDMBA) is a professor and division chief of pediatrics and program director of the PHM fellowship program at the University of Texas Southwestern Medical Center and Children's Health System of Texas in Dallas.

Peer-to-peer

The program excelled in peer-to-peer communication and denials management. Following admission to a hospital bed, UM nurses, from both the hospital system and the payer, review documentation to support the medical necessity of care ordered by the treating physician. Following this review, the cases may be evaluated by the payer's medical director and, if there is disagreement on the medical necessity of care, a peer-to-peer is often offered.

The peer-to-peer opportunity is arguably the least time-consuming yet highest-value step of the denials and appeals process with payers. However, the administrative time for scheduling and completing these discussions by the treating physician is tremendously burdensome. For this reason, many health systems contract with a third-party vendor to complete these discussions., This is financially restrictive as third-party vendors often require a monthly case limit or charge a per-diem rate per case. An internal program, supported by dedicated physician time, allowed all peer-to-peer opportunities to be explored.

With an internal program, the physician advisor communicates with the primary medical team for clarification of the clinical course, accesses the entirety of the medical record, and provides additional explanations to the medical directors of the insurance plan. The physician advisors are experts in pediatric hospital-based care and trained in the application of evidence-based guidelines (e.g., MCG and InterQual) used by payers. These skill sets allowed for a comprehensive discussion of the clinical case that's often lost in the written appeal.

Full-time coverage for peer-to-peer support allowed the hospital system to take advantage of every opportunity to overturn a decision before moving forward with the administratively burdensome written appeal process. The physician advisor program achieved a denial overturn rate of 75% of peer-to-peers, leading to significant cost savings for the hospital system (see Chart 1). The percentage of denied bed days over total bed days significantly decreased (see Chart 2). Our internal program not only doubled the overturn rate compared to that of the vendor, but it also increased the volume of completed peer-to-peers from approximately 250 annually to nearly 700 in the program's first year.

Physician advisors act as liaisons between the hospital system, its physicians, and the payers. They attend division meetings of multiple specialties to educate both medical and surgical specialties regarding denial trends, opportunities for documentation improvement, addressing barriers to discharge, and opportunities to improve patient flow. While the administrative burden of completing the peer-to-peer is directed to the physician advisor, detailed feedback can be easily provided to the primary team and health-system leaders if needed. Additionally, the physician advisor is able to identify denial trends of specific payers and develop relationships with the payer's medical directors to address these outside of the peer-to-peer process. This mechanism of bi-directional feedback illustrates the value of an internal program.

Appeals management

If a peer-to-peer is unsuccessful, a written appeal may be submitted on the patient's behalf. Due to the physician advisors' increased approval rate in peer-to-peers, the volume of required written appeals significantly decreased, further minimizing the administrative burden of the appeals process. On the occasion of an unsuccessful peer-to-peer, the physician advisor, being intimately familiar with the case and the specific criteria applied by the payer, completed the written appeal in collaboration with the hospital's denial-prevention department. Hospital collaboration with the physician advisor program in each step of the review and appeals process nearly eliminated the hospital system's write-offs for medical necessity and status conflict by 2022.

Furthermore, certain high-cost medications such as inhaled nitric

Chart 1: Peer-to-Peer outcomes from physician advisor program year-over-year

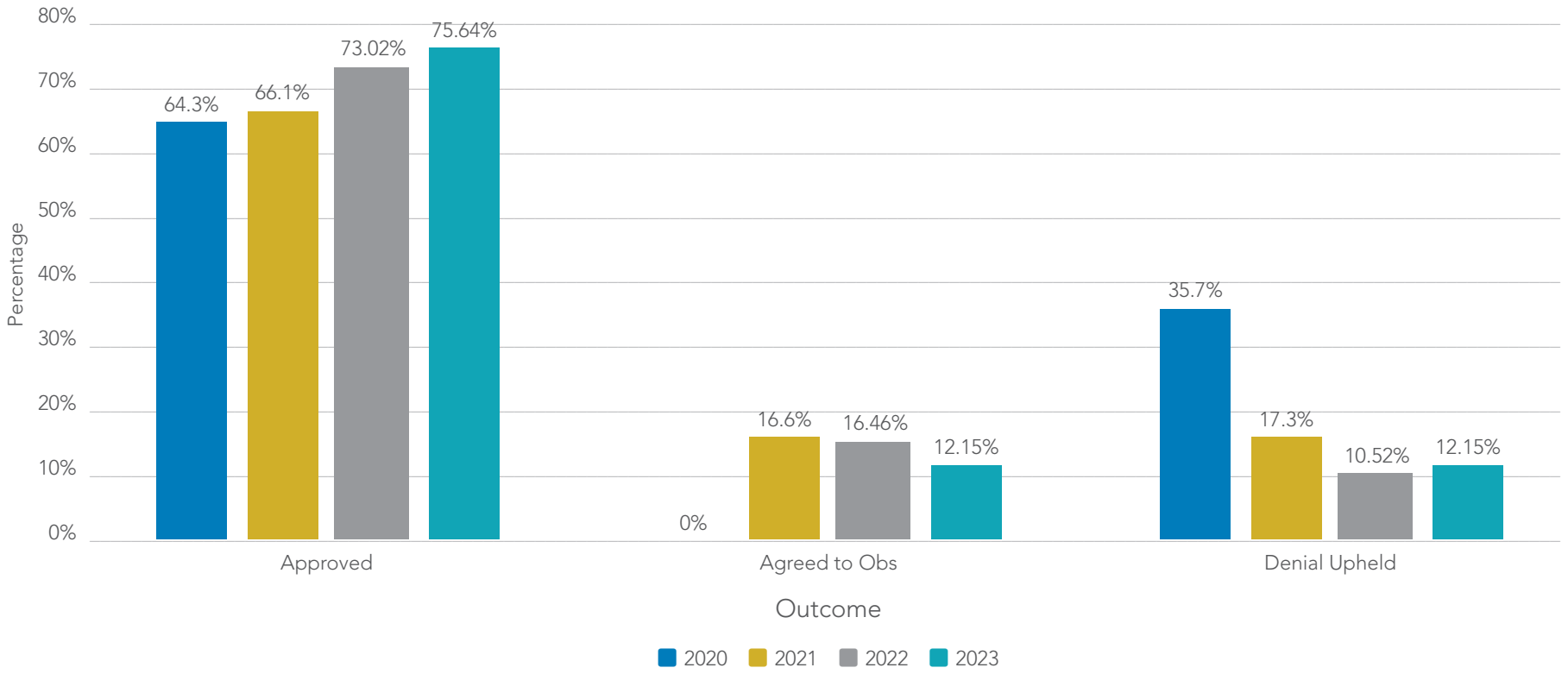

Chart 2: Denied bed days as a percentage of total bed days year-over-year

oxide are often denied by payers if administered outside of specific criteria set forth by payer policies. The physician advisor program created an appeal process for inhaled nitric oxide used in postoperative pediatric cardiac patients and has overturned denials for more than 650 days of nitric oxide usage in the last two and half years.

Prior authorization management

As the program grew in scope, it identified opportunities to improve prior-authorization processes with peer-to-peer support of planned admissions and surgeries. Health plans require prior authorizations for certain procedures, medications, or other services. If the prior-authorization request is denied, the payer offers a peer-to-peer. Again, the physican advisors' expertise on medical necessity criteria used by payers ensures the appropriate prior-authorization request is made and can be further discussed peer-to-peer before the patient's admission or procedure. Physician advisor involvement in this area ensures adherence to compliance regulations while maintaining appropriate reimbursement for the health system.

Scholarship

As part of UT Southwestern's academic mission, the physician advisors developed a scholarship structure with an educational curriculum to teach trainees in the PHM division about UM basics including clinical documentation, managing peer-to-peer conversations using evidenced-based medical necessity guidelines, and hospital billing and reimbursement models. Currently, PHM fellows rotate through this elective, but the program anticipates growth into other subspecialties in the future.

A dedicated physician advisor program allows physicians to gain a robust understanding of payer and hospital trends, regulatory compliance, and medical necessity as defined by payers. Within a rapidly changing health care landscape, this knowledge can further drive performance improvement within the system. An internal program educates physicians and physicians-in-training to become better financial stewards of resource utilization within the health care system, which can directly impact the quality of patient care. Developing relationships with medical directors within the insurance plans and internal physician advisors allows a partnership in navigating the complexities of the health care system in an increasingly complex pediatric-patient population. The program's ongoing growth and success highlight the importance of hospital and physician alignment in the need for improving patient care.

Physician participation is essential in improving the value of care at a system level and pediatric hospitalists can lead the change. ■

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Code Status Discussions

Difficult, but necessary conversations

By Mark Menet, MD, MPH

I thought it was just where I practiced, but it turns out that, in the medical field, we're really bad about having code discussions, which is a significant issue. When some of my patients revealed that no one had ever asked them about their code status before, I decided to conduct some research on this topic. It turns out that, at most, 41% of patients recall discussions about their code status, however, the 10.3% as documented by another study seems much more accurate.[1,2]

I will admit I'm far from perfect, but my experience caring for intubated patients during the COVID-19 pandemic compels me to broach the subject as frequently as possible. Though I am taking care of less-seriously ill patients than before, those heartbreaking experiences shape how I view these non-beneficial interventions. However, I can't describe the meaningless gesture that many codes become to my patients. Despite our inaccuracies in predicting mortality, or whether a person will survive a code, patients deserve the use of this knowledge, and squeamishness about having the conversation should not prevent this.[3,4] As I put forth more effort towards having these conversations I find I am better able to convey the ethical challenge a code presents to us as physicians.

This is a unique topic, as it involves discussing difficult subjects. It seems that we're more prepared to talk about just about anything else than practice of performing non-beneficial chest compressions on someone with no chance of surviving. Physicians have a different approach to end-of-life care compared to the general public. We tend to avoid aggressive life-saving treatment and prefer to die at home.[5,6] As health care professionals, it's our responsibility to share our knowledge and experiences to help our patients. If we fail to share our honest opinions about end-of-life issues, it becomes a problem.

As a hospitalist, discussing death with patients can be uncomfortable, especially when trying to establish a therapeutic relationship with them. However, it's important to ensure that patients understand the scope of care they may receive, regardless of how ill they may be. Even though some may avoid or briefly touch on the topic due to limited time, it is still part of our duty to have an honest conversation with the patient. This may affect how patients perceive their hospitalization in the short term, but studies show that a month later, it won't affect their review of the hospitalization.[7] Ultimately, providing clarity on what interventions the patient is willing to undergo is essential.

Occasionally I run into patients who have had an honest discussion with their family about their end-of-life care, and they've documented their wishes in a health care power of attorney document. Most of these patients live at an assisted living or skilled nursing facility, and while this is a powerful predictor for having prior discussions regarding end-of-life care, it doesn't guarantee this has occurred.[8] Often the patient states they have a health care power of attorney document and are a bit frustrated that I want to discuss this again. Assuming the patient is still able to make decisions for themselves, I explain that it's great that they have this document, but that it doesn't tell me what to do in an acute emergency, and since they're here right now and able to discuss these topics, we should do so.

The conversation about code status should of course involve a discussion regarding the patient's wishes surrounding intubation, cardioversion, pressor support or inotropes, and the associated central line. Asking about these details first allows me to understand the patient's goals and prepare them for further questions about intubation and cardioversion or chest compressions. I stress that choosing a partial-code status essentially guarantees failure.[9] If the patient still wants intubation but no chest compressions, I take this as a lack of knowledge and wade back into the conversation and reiterate the importance of understanding their decisions. If the patient expresses a wish to be full-code, I ask them to consider the appropriate duration of a time-limited trial of ICU care should they end up intubated, sedated, and stabilized. Regardless of what they choose, I stress the importance of sharing this information with their family, particularly the person responsible for their health care power of attorney.

Dr. Menet

Dr. Menet is the chief hospitalist officer at Beam Healthcare in Madison, Wis.

As stated above, attempts at resuscitation where chest compression or cardioversion are not used have no chance of meaningful survival, whereas codes where the patient does not need intubation are predictive of an improved outcome.[9] If a person codes outside the hospital they have roughly a 7% chance of surviving to discharge from the hospital.[10] The rate of survival to discharge for patients who have a code in the hospital setting appears to be around 15%, and has been surprisingly stable over the past 60 years; though the "Get With the Guidelines" data is much more optimistic, reporting a 25% survival to discharge rate.[11,12,13] I feel it's important to stress that this is an intervention with poor results and the process is traumatic at best for the person receiving cardiopulmonary resuscitation. Multiple risk-stratification scores can be used to guide these conversations, the GOFAR score being the preferred one currently.[4] While these are helpful, they are not perfect, and no score can predict with certainty that someone will not survive a code situation.

How we approach this conversation about end-of-life care is the subject of a great deal of research. The clear recommendation is to make this a shared decision between you and the patient, but the method of doing so remains up for debate.[14] After going down this rabbit hole, I found much of it was splitting hairs about how much our biases influence the discussion of end-of-life care, and whether this is appropriate. I worry this may be a case of the perfect getting in the way of the good and that these debates are more likely to disincentivize discussions rather than make them more effective. There will never be a perfect method to introduce the idea of possibly dying to a patient who is already upset and scared because they just found out they are sick enough to require admission to the hospital. In every discussion, I try to emphasize that I will do everything possible to prevent the illness from progressing to this point, regardless of the decision made. Although a negative outcome is likely, I will give every ounce of myself to honor their wishes.

The script I've used since residency is terrible and frames coding as if it occurs in a vacuum, without any connection to the patient's illness. Lately, I've been trying to change that by showing how coding fits into the bigger picture of a disease process. For example, I explain how a patient's heart stopping or their lungs failing to provide adequate oxygenation represents a significant threshold in the continuum of a disease process.

An example conversation might be: "I don't expect that your heart failure exacerbation will worsen now that we're starting therapy, but heart failure is a serious disease. As it progresses, the likelihood of serious complications increases. This may progress to the point that your heart is not able to function without intravenous chemicals to support it. Is that something you would be willing to tolerate, with the goal of weaning off these medications eventually? As heart failure progresses, the likelihood of an arrhythmia occurring increases as well, If your heart enters into one of these rhythms it no longer pumps blood effectively, and your brain starts dying without adequate oxygen. We can try to return it to a normal rhythm by performing chest compressions and shocking the electrical system, but the likelihood of success is very low. Is this something you would want to be done if your heart becomes this ill? As your heart failure progresses, it may lead to fluid collecting around your lungs, making it harder to breathe. If this happens we can use a mask to help while attempting to remove this fluid, but this is not always successful. Would you be willing to have a tube inserted into your throat to allow us to assist your lungs, with the goal of removing the tube later, understanding that this may not be possible?"

Discussing the nature, progression, and severity of a patient's disease can help them better understand their situation. These conversations often force patients to consider the real-life implications of their decisions, which can be scary. However, this honesty can lead to meaningful discussion and decision-making, even if a decision isn't reached right away. Simply having the conversation can help patients consider their options and make future discussions more productive.

Some special programs and facilities provide professional patients for medical practitioners to practice and improve their communication skills. Although these programs are effective, the easiest way to get better at communicating with patients is to prepare beforehand and then engage in conversation. I sometimes find myself in awkward situations during patient interactions, despite my best efforts. However, I have noticed an improvement since I started focusing on this aspect of my care. With enough practice, these conversations will become easier and eventually become a routine part of our daily work.

I admit, I still don't know how to introduce my pessimistic view about the process without feeling like I overwhelmed or browbeat the patient into agreeing with me. This raises internal concerns about paternalism, so I usually stick to hiding behind the statistics I listed above. I recognize this is going to be an ongoing process of self-improvement and I think the most important thing is to start having these conversations regardless of our concerns about not being good at it. There will be awkwardness, regardless of how good you are at the conversation, and besides, as Adventure Time's Jake the Dog says, "Dude, sucking at something is the first step to being sorta good at something." ■

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Interruptions Are Bad for Hospitalists and Their Patients

Communication, leadership support, and tech can help

By Larry Beresford

More than 10 years ago this magazine published an article by Winthrop Whitcomb, MD, MHM, a pioneer of hospital medicine and co-founder of the Society of Hospital Medicine, warning of the hazards of workflow interruptions for hospitalists, which he labeled a career satisfaction issue for clinicians but a safety and quality risk for their patients.[1]

A decade later, the problem has surely gotten worse as hospital financial pressures and staff shortfalls push caseloads higher and job stresses drive burnout and premature retirement for doctors who have been pulled in too many directions in their work. Competing interruptions can come from nurses, the admitting department, the emergency department, labs and radiology, billing, patients and their families, and specialists—while hovering over the rest is the electronic health record and its myriad of pop-ups and alerts.

Meanwhile, communications technology continues to advance, with smartphones, texting, and pagers making it even easier to interrupt the doctor. Then add non-clinical responsibilities—documentation, departmental meetings, quality improvement, research, education, and even the Information Technology committee.

Some might say these interruptions and competing demands on the working hospitalist's attention are just part of the job in today's complex, fast-paced hospital environment. Multiple other parties throughout the hospital need the hospitalist's attention in order to conduct their own jobs. But this kind of stress comes at a cost, with negative implications for both critical decision-making about patient care and the decision-maker's personal well-being.[2] Interruptions also impact efficiency, with fiscal consequences for what hospitalists are able to accomplish in their workday.

Connections to burnout

Gwendolyn Williams, MD, a hospitalist and immediate past president of the Medical Executive Committee at Sentara Careplex Hospital in Hampton, Va., president of the Hampton Roads Chapter of SHM, and a national spokesperson on professional well-being, burnout, and moral injury in the workplace, says that professionals are afraid to bring up what they are experiencing on the job. Their psychological needs in the workplace are not being met because they don't want to be viewed as being unable to handle it.

Dr. Williams

"When a patient pulls me in different directions, I have (mentally) compartmentalized what I need to do for that patient. I understand why I'm doing it," Dr. Williams said. "But when you're asked to do what we could call multitasking or task switching, it causes stress and anxiety. It can also decrease empathy in our care because we're being asked not to focus on the patient in front of us."

If we keep adding more and more things to do, hospitalists are not just going to continue to bend, she said. "We're going to break. People are leaving in droves from health care, not just nurses but also doctors."

Telling hospitalists to just deal with all these pulls on their attention seems insufficient in a time of high burnout rates for hospitalists. Sonia George, DO, FACP, FHM, (@DrSoniaGeorgeDO) a hospitalist, the medicine clerkship director at Long Island Jewish Medical Center in New Hyde Park, N.Y., and a member of the executive council of SHM's Hospitalist Well-Being Special Interest Group, has studied burnout among physicians and given regional and national talks on physician wellness since before the COVID-19 pandemic. "But when the pandemic hit, talk of burnout really came alive. The challenges that we as hospitalists face have changed dramatically over the last several years."

Dr. George

There could be a lot of reasons for that, Dr. George said. "I feel like we've been pulled in so many different directions. Our responsibilities are ever-growing, with hospital metrics and throughput as key drivers of our day-to-day tasks. Our patients are also a lot sicker, and there are many elements of their social determinants of health that we are not quite equipped to handle."

Dr. George was asked how the competing demands affected her personally. "That's a great question. For me, I work half-time for the medical school as the medicine clerkship director, so I have administrative responsibilities on top of my patient care responsibilities." But she gets protected time for her academic work, while other doctors often do not.

"If I didn't have the protected time, I don't think I could do my job as effectively. I would definitely be more stressed than I am now," she said. "I'm sure it would not only impact work productivity, but it would affect me in my personal life and at home, especially if it required me to bring work home." But when she's on a clinical shift, caring for patients, the non-clinical demands on her attention are also great, which often leads to a longer workday. "Things need to get done, and I'm the only person that can get them done. Or else I have to figure out a way to delegate."

It's important for a hospital's leadership to know how its hospitalists are being pulled in all these different directions, with all the interruptions, and to strategize ways this could be mitigated, Dr. George said. Changes need to come at

an organizational level because the individual hospitalist can't fix it all. "That's why it's really important to have supportive leadership."

Dr. George's hospital formed focus groups to talk about how to tackle some of these challenges, for instance, with an advanced care practitioner (ACP) who can support the hospitalist's caseload and share responsibilities. If something comes up that is non-urgent for the patient, a nurse can reach out to the ACP to try to resolve the issue before escalating it to the attending.

Long Island Jewish Medical Center uses the Microsoft Teams Chat, which allows for real-time updates and other ways to assist hospitalists with some of their tasks, Dr. George said. "There are other ways we could definitely look into mitigating interruptions, but it has to start at the top. Communication and transparency are paramount. It's also important for hospitalists to know they are not alone in their day-to-day struggles and that it's not all on them to build up their resiliency."

Managing all the demands

Gagandeep Dhillon (@MDrounds1), MD, MBA, assistant medical director at the University of Maryland Baltimore Washington Medical Center in Glen Burnie, Md., has been a hospitalist there for almost seven years. Before that, he worked in North Carolina on a seven-day on–seven-day off schedule of 12-hour shifts, where his workday started at 7 a.m. Sometimes he'd show up early to get a start on his patient lists, which ranged in number anywhere from 16 to the mid-20s.


Dr. Dhillon

"Let's say I'm seeing a patient in a room and I'm in there for seven to 10 minutes. There's a chance I might get five messages. So in my mind, even though I'm talking to the patient in front of me, I know that someone else is looking for me." Dr. Dhillon believes that he is able to manage the multiple demands on his own time. "I'm not someone who gets really stressed about stuff. I'm good at multitasking. So I can do one thing here, a second thing there, a third thing there, and get all the jobs done. But I feel for certain practitioners, one more thing is a bridge too far."

His current medical center uses a phone app that has helped to reduce the number of pages the doctor gets. "If I get 60, 70, 80 messages in the app that we use, I'm comfortable answering them. It doesn't faze me," he said. "On the other hand, the responsibility is on me to get to those messages ASAP."

Along with the interruptions, the hospital expects certain other things from its hospitalists, such as the quality metrics they have to meet. "We should always be judged by certain numbers, certain metrics—but that also plays out in your mind in the sense that you're thinking about how you need to hit the numbers," Dr. Dhillon said. The University of Maryland Hospital recently instituted a 10-hour workday for its hospitalists, instead of 12 hours. Dr. Dhillon believes that has made a difference, with a less exhausting workday.

Different communication media

Naznin Jamal, MD, FACP, FHM, medical director of the hospitalist program at Jefferson Regional Medical Center in Pine Bluff, Ark., said hospitalists getting pulled in all directions is pretty standard in her experience. "Usually, it's harder for our physician colleagues coming out of residency and going straight into hospitalist practice. For the first time, they are managing an entire caseload by themselves, usually unaided. Whereas for a lot of mid-career physicians, we've found ways of efficiency, which we try to impart to them," she said.


Dr. Jamal

One of the tricks she learned as a hospitalist is to show up at work as early as she can. "The shift starts at 7 a.m., but early rounding happens to be more efficient than rounding later on. At 7 a.m., most of your patients are still in their beds, but by 9 o'clock they have gone for procedures or dialysis," she said. "Another thing we have found is managing and preparing for discharge as much as possible the day before."

Jefferson Regional Medical Center has also started using an electronic, HIPAA-compliant secure health messaging app. "We had a rule that anything that's an emergency and life-threatening needed to be paged, but the secure messaging app can be used for the 80 to 90% of interruptions that are non-emergent. The downside to that is we're now getting texted more often," Dr. Jamal said.

The physicians thus have three different communication mediums—phone, page, and text. "Our hospital operators screen calls, and they know our preferences. We also have a rapid response team staffed by nurses with critical care experience, and they're able to respond to some urgent requests."

What else can hospitals and hospitalist groups do to mitigate the negative impacts of too many demands and interruptions? Could schedules be coordinated to allow certain times in the day when the doctors are not to be interrupted except for a true emergency, so they can focus on multidisciplinary team discussions, patient visits, medication reconciliation, or other complex decision-making? Can they simply turn off their phone at high-stakes moments? Could certain areas of the hospital be designated as "no-interrupt zones," where they can work in peace, perhaps donning a bright yellow "do not disturb" vest to signal that status?

Of course, this requires clarity on what is truly urgent versus non-urgent. Might the technology itself be mobilized to help clarify these distinctions? A decade ago, Dr. Whitfield suggested that a 50-minute hour might enable hospitalists to do their clinical work uninterrupted by routine calls and pages, and then at 50 minutes after the hour turn their attention to backlogged pages and calls.

Leslie Flores, MHA, SFHM, in a blog post for SHM's The Hospitalist Leader, suggested convening a process improvement initiative alongside nurses on the floor, working together to try to mitigate interruptions, acknowledging them as a problem everyone in the hospital owns a piece of.[3]

The doctor could also try to preempt interruptions by anticipating and addressing the needs of nurses and others in the hospital before they step forward with their questions. But it may be necessary to accept that interruptions are unavoidable, she wrote, concluding, "Strategies for reducing or more effectively dealing with interruptions are hard to come by." ■

Larry Beresford is an Oakland, Calif.-based freelance medical journalist, specialist in hospice and palliative care, and long-time contributor to The Hospitalist.

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Key Clinical Question

Which Non-opioid Medications are Best for Symptom Management in OWS?

By Erika Clark, MD, MPH, Alexander Wood, MD, MPH, Charles Pizanis, MD, FHM, and Jacob Imber, MD

Case

A 30-year-old woman with a history of opioid use disorder (OUD) presents to the hospital with a fever and is found to have *Staphylococcus aureus* bacteremia. Soon after admission, she develops significant opioid withdrawal syndrome (OWS) for which she receives 5 mg of oxycodone every six hours. She feels this is inadequate management of the withdrawal and leaves against medical advice (AMA).


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OWS is a common sequela of hospitalization for patients with OUD, quickly causing severe discomfort and distress within hours of last use. It is associated with an increased risk of AMA discharge which can increase the risk for mortality from the illness prompting hospitalization in the first place. A 2010 review of almost 2 million discharges at the Veteran's Administration for AMA discharges found an increased risk at 30 days of re-admission (17.7% versus 11.0%, P <0.001) and death (0.75% versus 0.61%, P = 0.001).[1] The exact prevalence of substance use disorder (SUD) among AMA discharges is unclear but likely large, with estimates ranging from 20% to more than 50% of AMA discharges being complicated by SUD.[2] This risk increases with daily injection of heroin and decreases with in-hospital use of methadone and social support.[3,4] While the need for superior SUD treatment has spurred a call for more addiction-medicine consultants, the pervasiveness of OUD and the acute onset of OWS make management an essential skill for any hospitalist.[5]

Medications for opioid use disorder (MOUD) such as buprenorphine and methadone constitute the mainstay of treatment for OWS and OUD. The withdrawal period is the preferred time for initiation of buprenorphine, and the efficacy of these medications on OUD outcomes is well documented.[6] Non-opioid therapies are also available as additional medications to address the distressing symptoms of OWS and can be used in conjunction with MOUD initiation, titration, and maintenance. Some scenarios may also exist in which a non-opioid strategy may be relied on to treat OWS. Hospitalists can be more effective in managing OWS with the knowledge of these medications and their efficacy.

Quiz:

A 33-year-old woman is admitted after a car accident resulting in multiple traumatic fractures. After the repair of her fractures, and despite the provision of opioid analgesics, the patient complains of persistent severe pain and opioid withdrawal symptoms, including anxiety, on hospital day three. What should the next step for the hospitalist be?

a. Reassure the patient that opioid withdrawal is not life-threatening
b. Increase opioids for pain and withdrawal and add clonidine for anxiety
c. Add hydroxyzine to her current pain regimen
d. Initiate alprazolam for anxiety in addition to her current pain regimen

Correct option: B. The patient has a high tolerance for opioids and the experience of withdrawal while on opioid medication implies that she is not receiving nearly as much as she is used to using outside of the hospital. Given that she has a clear cause of acute pain, treatment of her pain and withdrawal symptoms should be prioritized and transition to safer MOUD should be pursued once her initial symptoms are improved.

Incorrect options:

A. Reassurance alone is not sufficient to manage the patient's symptoms and may lead to AMA discharge.
C. While hydroxyzine has a role in managing anxiety related to OWS, it alone will not be sufficient to manage the patient's pain.
D. Benzodiazepines can improve anxiety related to OWS, though the risk of co-dependence should caution against their use as first-line agents. Additionally, short-acting benzodiazepines such as alprazolam should be specifically avoided as they have an increased risk of addiction.

Overview of the data

OWS is characterized by multiple, frequently distressing symptoms. These symptoms can involve multiple organ systems including neuropsychiatric, musculoskeletal, and gastrointestinal, each with its unique management options.

Neuropsychiatric: Neuropsychiatric symptoms in OWS include anxiety, agitation or irritability, and insomnia.

Alpha-2 adrenergic receptor agonists, such as clonidine and lofexidine, are the cornerstone of non-opioid management of the neuropsychiatric symptoms of OWS. Studies have shown changes in norepinephrine levels during opioid dependence, as well as an increase in the chemical during opioid withdrawal.[7] The sensitivity of alpha-2 adrenergic receptors changes with opioid use, and alpha-2 adrenergic agonists appear to alleviate some of the symptoms of withdrawal by centrally decreasing non-adrenergic hyperactivity.[7,8]

Clonidine is the most widely used alpha-2 adrenergic agonist with the most research to date. However, common side effects include sedation, dry mouth, and most notably, hypotension.[8] Hypotension must be carefully monitored especially in the setting of other common symptoms of opioid withdrawal, such as vomiting and diarrhea.

Lofexidine is a newer alternative alpha-2 adrenergic agent and is now the only non-opioid, U.S. Food and Drug Administration-approved medication for the treatment of OWS in adults. It has a similar side effect profile to clonidine though with fewer hypotensive episodes.[8] Lofexidine has been shown to significantly improve OWS symptoms with a generally acceptable safety profile.[9] Few studies have compared the two head-to-head, but lofexidine use may be limited by cost. Other medications with alpha-2 adrenergic properties include guaifenesin and tizanidine, both of which are not widely used in OWS.

Benzodiazepines are also available for use in neuropsychiatric symptom management. Generally, benzodiazepines with a slower onset of action are more favorable than those with a faster onset given their lower abuse potential. For this reason, clonazepam and oxazepam are preferred, and it is recommended that diazepam and alprazolam be avoided.[10] It is important to keep in mind that opioid and benzodiazepine co-dependence exists. One study found that of those entering opioid detoxification programs, 25% had

concurrent benzodiazepine dependence, with the primary indication being treatment of anxiety.[11] Because of this risk, the authors do not recommend initiation of benzodiazepines for neuropsychiatric symptom management without careful monitoring and mindfulness of the risk of co-dependence.

Other options for anxiety management include antihistamines, such as diphenhydramine and hydroxyzine.[10] There is limited evidence, with concern for study bias, that hydroxyzine is as effective as benzodiazepines with similar tolerability if used to treat generalized anxiety disorder, although it can lead to greater drowsiness.[12]

For the treatment of insomnia, trazodone, doxepin, zolpidem, and quetiapine can all be considered.[10] Dopamine, serotonin, cannabinoid, orexin (hypocretin), and glutamate systems contribute to OWS as evidenced by both animal and human studies.[13] Quetiapine works on the dopaminergic and serotonergic systems and has been shown to improve multiple withdrawal symptoms, including insomnia, craving, and pain.[13] Given the above concerns regarding benzodiazepines, amitriptyline is just as effective as lorazepam at insomnia management in opioid withdrawal.[14]

Musculoskeletal: Pain is a common feature of OWS, but it is crucial to distinguish the diffuse myalgias and bone pains of OWS from any focal pain that may be related to a patient's presenting illness and to treat acute pain appropriately. For patients with pain directly related to OWS, several medication classes are available for the hospitalist to use.

Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and ketorolac, are often looked to as non-opioid options to manage pain in the setting of withdrawal. Limited data exist in human populations to describe their efficacy in doing so; however, several animal models have demonstrated NSAID administration ameliorates pain and other withdrawal symptoms in rats who underwent induced withdrawal.[15,16] While difficult to extrapolate to humans, NSAIDs are a valuable class of medications available to clinicians to address pain in the absence of contraindications. Ideal agent and dose are not well defined.

Gabapentin can be effective in ameliorating pain and other withdrawal symptoms in patients undergoing both opioid-replacement therapy and withdrawal. The medication appears to have a dose-dependent response. In one study investigating varying doses of gabapentin in a population undergoing supervised methadone withdrawal, 1,600 mg per day was associated with decreased pain and withdrawal symptoms compared to 900 mg per day and to placebo; the lower dose, 900 mg per day, was no better than placebo.[17] In this study, the gabapentin dose was started at 800 mg per day and titrated to 1,600 mg per day over three days, then continued for three weeks. Gabapentin appears to be effective when started and up-titrated quickly.

Table 1: Non-opioid therapies

MEDICATION *(CLASS IF REPRESENTATIVE OF LARGER CLASS)*	SYMPTOM TARGETED	PRESUMED MECHANISM	EVIDENCE STRENGTH	RECOMMENDED DOSING
Clonidine (alpha-2 agonist)	Agitation/Anxiety	Decrease noradrenergic hyperactivity	Strong	0.1-0.2 mg/dose†
Clonazepam (Benzodiazepine)	Agitation/Anxiety	CNS depressant	Strong*	0.5-1 mg/dose
Hydroxyzine (antihistamine)	Agitation/Anxiety	Antihistamine	Weak	25-50 mg/dose
Trazodone	Insomnia	5-HT2A antagonist	Weak	50-100 mg/dose
Quetiapine	Insomnia	Unclear	Weak	12.5-25 mg/dose
Amitriptyline	Insomnia	Increases serotonin & norepinephrine levels	Moderate	50-100 mg/dose
Ibuprofen (NSAIDs)	Pain	COX inhibitor	Weak	400-800 mg/dose
Gabapentin	Pain	CNS depressant	Strong	1,600 mg/day‡
Tylenol	Pain	Unclear	Weak	325-650 mg/dose
Baclofen	Pain	CNS depressant	Moderate	5-10 mg/dose
Loperamide	Diarrhea	Gut opioid-receptor agonist	Weak	2 mg/dose
Ondansetron	Vomiting	5-HT3 receptor antagonist	Weak	4-8 mg/dose

** Caution recommended † max 1.2 mg/day ‡ or more, divided in 3 doses*

Baclofen, another GABAergic medication, has been successfully used in several non-opioid drug-withdrawal studies.[18,19] It appears to have favorable impacts on general withdrawal symptoms as well as depressive symptoms.[18] Data on its use specifically for pain treatment in the setting of withdrawal is limited, however. Given spasms and other muscle-related pains are frequently reported in withdrawal, its targeted use for muscular pain makes intuitive sense.

While acetaminophen is commonly included in opioid withdrawal protocols, data are limited on its use for pain experienced from OWS.

Gastrointestinal: Gastrointestinal symptoms are commonly experienced in OWS. These can include abdominal pain, diarrhea, nausea, and vomiting.

Loperamide is frequently used for diarrhea related to OWS and works by inhibiting intestinal motility and reducing fluid and electrolyte losses.[20] Loperamide binds to opioid receptors in the intestinal wall, a property that has led researchers to investigate the medication as a primary method of opioid detoxification in combination with proton pump inhibitors.[21]

Ondansetron, a 5-HT3 receptor antagonist, can be beneficial in the treatment of nausea, given serotonin's role in OWS. 5-HT3 receptor antagonists have been shown to improve a myriad of withdrawal symptoms including pain and hot flashes, which can be relieved further with co-administration of hydroxyzine.[22,23]

Recent data has shown that mirtazapine, both an antihistamine and a 5-HT3 receptor antagonist, can be used to manage symptoms from nausea and diarrhea to anxiety and insomnia.[24]

Caution must be taken with loperamide and most antinausea medications, including ondansetron and promethazine, as they can cause QTc prolongation or exacerbate

the QTc prolongation from other medications used for OWS.[25]

Application of the data to the original case

The patient returns to the hospital three days later because of worsening fevers and new swelling in her lower extremities. She is admitted and immediately started on methadone, clonidine, loperamide, hydroxyzine, and ondansetron for symptom management in addition to appropriate antibiotics. Her non-opioid medications for OWS provide a bridge for symptom management during the up-titration of her methadone and she remains in the hospital for treatment of her life-threatening infection.

Bottom line

OWS is a common complication of hospitalization for patients with OUD and frequently contributes to AMA discharges and concomitant morbidity and mortality. While MOUDs are the mainstay of long-term treatment, familiarity with and understanding of appropriate use for the many non-opioid medications for the management of OWS is an essential skill for hospitalists to improve symptoms and outcomes. ■

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