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THE Hospitalist

Hospitalists as Disruptors in Healthcare

By Flora Kisuule, MD, MPH, SFHM

We are living in disruptive times. We are amidst national and global conflict, we survived a pandemic that changed many aspects of our lives permanently, and many of our health systems are working through financial challenges with unprecedented operating and net losses. These disruptive forces require equal and opposite forces ... remember high school physics and Newton's third law? How do we reclaim this word "disruptive" as a force for good? According to the Oxford Dictionary, disruptive is, "causing radical change in an existing industry or market through being innovative." Healthcare disruptors are hospitalists who are shifting the healthcare industry by making big changes that significantly define the way care is delivered. That means integrating new technologies, streamlining processes, and simply refusing to do things the way they've always been done!

Hospitalists are in the thick of things, shaking things up. SHM's mission and vision call for us to be disruptive and advocate for change—inside and outside the hospital walls—and our members are actively helping us do both.

Vision: To be the professional home of hospitalists dedicated to exceptional and equitable care for acutely ill patients.

Mission: As the home for hospitalists, SHM activates and engages our community to:

- Advocate for our specialty, our members, and the diverse patients we serve
- Promote high-value care and optimal outcomes for acutely ill patients
- Meet the evolving educational needs of a dynamic specialty
- Cultivate an inclusive community for hospitalists and support career growth and well-being
- Advance the research and innovation of healthcare delivery, quality, safety, and experience across the care continuum

Here are some examples of how hospitalists are "disrupting" healthcare and making meaningful changes:

1. Hospitalists are developing new models of care. From unique partnerships with payors to "street medicine on the floors," hospitalists at Boston Medical Center and Allegheny Health Network in Western Pennsylvania are developing innovative



Dr. Kisuule

Dr. Kisuule is director of the division of hospital medicine at Johns Hopkins Bayview Medical Center in Baltimore and president of SHM.

models for providing care to complex patients with extensive healthcare needs. They are creatively working to provide person-centered care to those patients who are more medically and socially complex than the average population.

2. Hospitalists are "shaking things up" in Washington, D.C., lifting our voices and advocating for our field and diverse constituents. For example, we can now provide comprehensive care to our patients suffering from addiction because of the hard work of members of our public policy committee. Are you worried about school safety? Well, Dr. Ilan Alhadeff, who received SHM's Award of Excellence for Humanitarian Services in 2023, is honoring his daughter's memory, advocating all the way to the White House for laws that can make our schools safer.
3. Hospitalists have made it their life's work to address structural racism and eliminate unnecessary barriers to access to healthcare. A notable example is Dr. Lilia Cervantes, who is recognized for spearheading the change in the Medicaid payment rule so undocumented patients with kidney failure can access life-saving maintenance dialysis. Dr. Cervantes was the recipient of SHM's Award of Excellence for Diversity, Equity, and Inclusion in 2021. She says, "I have learned that every problem can be an opportunity. The fight is not always won by the loudest voice. It is won by those who do not give up." The Society of Hospital Medicine is working with industry partners to invest monetarily in a diverse and equitable culture

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Hospitalists are charged with treating individuals at their most vulnerable moments, when being respected as a whole person is crucial to advancing patients' healing and wellness. Within our workforce, diversity is a strength in all its forms, which helps us learn about the human experience, grow as leaders, and ultimately create a respectful environment for all regardless of age, race, religion, national origin, gender identity, sexual orientation, socioeconomic status, appearance, or ability. To this end, the Society of Hospital Medicine will work to eliminate health disparities for our patients and foster inclusive and equitable cultures across our care teams and institutions with the goal of moving medicine and humanity forward.

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through pipeline development through the Hospital Medicine Diversity, Equity, and Inclusion Scholarship Fund.

4. Hospitalists are at the forefront of leveraging technology, such as generative artificial intelligence (AI), to improve the provision of care. Generative AI is about two important simultaneous breakthroughs: a human-language interface and a reasoning engine beyond a database that recognizes complex patterns to produce accurate insights and predictions. If you love ChatGPT, you will love what hospitalists like Dr. Subha Airan-Javia are doing, working to build the technological infrastructure to facilitate interactions between hospital clinicians and their smart technology. Hospitalists were using telemedicine before COVID-19 made it mainstream, and hospitalists like Dr. Nilam Soni, are leading the way in point-of-care ultrasound training, equipping us to weave this technology into the fabric of our daily practice.
5. Hospitalists are leading the way in promoting humanism and “personomics” in medicine. Sir William Osler said, “The good physician treats the disease; the great physician treats the patient who has the disease.” Personomics, a term coined by Dr. Roy Ziegelstein at Johns Hopkins in Baltimore, is defined as the influence of the unique circumstances of the person—the “personome”—on disease susceptibility, how that disease will reveal itself phenotypically, and the way that the person with the disease will respond to treatment.¹ We are practicing

medicine in an era of precision medicine where biologic variability is being used to identify treatments that are uniquely tailored to the individual. However, individuals are not only distinguished by their biologic variability, but they also differ in terms of how disease affects their lives. People have different personalities, resilience, and resources that influence how they adapt to disease. Hospitalists like Dr. Janet Record, at Johns Hopkins, are re-writing the medical training curriculum at her institution so that there is an emphasis on teaching residents to know their patients as individuals. Other hospitalists like Dr. Kimberly Manning, at Emory in Atlanta, are using the power of storytelling and social media to explore the human side of medicine.

6. Hospitalists are “disruptive” leaders. Tom Ziglar, in his book, “10 Leadership Virtues for Disruptive Times,” writes, “Those who embrace change are the ones who will create the future, serve their people, and solve problems in the best ways.”² Disruptive leaders are those who see the future, opportunities disguised as problems, the potential in every person, and are those with the ability to understand who we need to become to create the future we want.² Disruptive leadership is a team sport that involves engaging all stakeholders and recognizing the power of diversity. Key virtues of disruptive leadership are: willingness to challenge the status quo; thinking outside the box; having a positive mindset; embracing

failure; and thinking and dreaming big. Dr. Nasim Afsar, past SHM president, is an example of disruptive leadership. She is leading in new spaces, as Cerner’s (in Kansas City) first chief health officer, promoting “techquity” (using technology and data insights to deliver more equitable patient care).

7. Hospitalists are reaching beyond borders to ensure access to care and are spreading the ethos of hospital medicine. From Dr. Lisa Kaufmann, practicing in the Blue Ridge Mountains of North Carolina, to Dr. Khaalisha Ajala, traveling to Thailand to ensure access to care, hospitalists are practicing global health. Furthermore, hospitalists are also reaching across borders to share best practices for inpatient care with partners in countries such as Spain, Japan, Argentina, and Brazil. As we build bridges through global health and extend a hand to like-minded international colleagues, we expand our community and strengthen the big tent. These connections build our collective cultural intelligence, bridging different values, norms, and preferences, allowing us to focus on the commonality of our love for hospital medicine and turn our differences into complementary strengths.

On a more personal note, positive disruption has been a part of my life even before my time as a hospitalist. It has been 33 years since I arrived in the U.S., a long tortuous journey that got me from a small Eastern African country to a riveting meeting (Converge) with a few thousand of my favorite

people. Along the way I have encountered remarkable disruptors who have helped me break down barriers, opened doors, and got me to today: my mother, the original disruptor, who believed, way before her time, that an African woman, a black woman, a woman, could be anything she dreamt of being, and raised me to dream big; incredible philanthropists who made scholarships available to a foreign student and made medical school feasible; and my peer and senior mentors as well as sponsors who, as disruptive leaders, saw my potential and believed in me even before I believed in myself. I channel this energy, and that of our collective community, when I consider what being a healthcare disruptor means in 2024.

I am so honored to serve you all, our discipline, and our society as president this year. I look forward to meeting many of you and brainstorming with you on how to push the boundaries in care delivery both within and beyond our borders. Disruptive times require disruptive forces. Hospitalists are shaking things up and expanding their scope of practice. Innovation in hospital medicine, and the expanded roles of hospitalists, are increasing value in healthcare and benefiting humans, especially the acutely ill, across the globe.

Are you a healthcare disruptor?



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2. Ziglar, Tom. *10 Leadership Virtues For Disruptive Times.* Nashville: Nelson Books; 2021.

Coding Corner

Dazed and Confused

By Jeremy Gentile, DO,
FACP, FHM

An 84-year-old woman with a history of dementia was admitted for worsening confusion over the last two days. Her initial workup in the emergency department is unremarkable including a normal urinalysis, basic metabolic panel, complete blood count, and CT of the head. On day two, she is increasingly combative and requires restraints. After a discussion with her family about the risks and benefits, quetiapine is added nightly. You order an electrocardiogram to check the patient’s QT interval, magnesium level, and another basic metabolic panel. On day three, she continues to require intermittent restraints along with the addition of haloperidol as needed.



What level of billing does this qualify for?

This would qualify for level 3 (99233). This patient’s ongoing encephalopathy can be documented as an acute threat to life due to her inability to maintain her activities of daily living and personal safety. Alternatively, it could be documented as a severe exacerbation of a chronic disease (dementia) requiring ongoing inpatient care. If her level of confusion is significant enough to justify restraints, then it should be documented that

she remains a threat to herself or others. Restraints are treatments with a high risk of morbidity due to the risk of increased delirium, self-injury, loss of patient autonomy, electrolyte disturbances, and rhabdomyolysis, which is why they are generally used as a last resort. The use of chemical restraints, such as quetiapine or haloperidol, would also be considered a treatment requiring monitoring for medication toxicity, especially if paired with other QT-prolonging medications. These would usually necessitate some short-term electrolyte and electrocardiogram evaluation, especially while the patient was in restraints. Thus, this patient meets two of the three categories for high-level medical decision making.

Tip

A patient with encephalopathy re-

quiring the use of restraints (physical or chemical) will usually meet the criteria for high-level medical decision making. Follow-up visits that continue to require restraints or medication adjustments can usually be billed as a level 3 (99233) with supporting documentation of the patient’s severity of illness and need for medication toxicity monitoring or the use of a high morbidity treatment. ■

Dr. Gentile is an internal medicine hospitalist, section chief for acute care medicine and associate program director for internal medicine at Corewell Health Western Michigan, and assistant professor, department of medicine, Michigan State University College of Human Medicine in Grand Rapids, Mich. Disclosure: Dr. Gentile is on Gilead’s speakers bureau and consults on the hospital management of COVID-19.

4 Things Hospitalists Can Do to Reduce Nursing Turnover

By Weijen Chang, MD, FAAP, SFHM

Hospitalists and hospital administrators know the greatest challenge to providing safe, high-quality healthcare day in and day out in the U.S. is adequate nurse staff. Already a problem before the pandemic, the nursing shortage continues to worsen. By 2025, less than a year from now, the U.S. will have a shortage of 200,000 to 450,000 nurses available for direct patient care, equivalent to a gap of 10% to 20%.¹ There is some dispute about the existence of an overall shortage of nurses, but what is clear is that nurses are leaving direct patient care, especially medical-surgical nurses, in droves.^{2,3}

As hospitalists, we might shrug our shoulders and say, “What can I do about this?” It’s hard for an individual hospitalist to impact macro trends in the healthcare workforce. However, even within an individual unit or hospital, some steps can be taken by any hospitalist to reduce nursing turnover and thereby improve staffing.

1. Respect and protect staff on your unit. This sounds basic, but if you receive safety reports regularly, you’ll realize that patients, visitors, and practitioners regularly abuse and disrespect nurses and other staff. While workplace violence is a constant risk for healthcare workers, it’s critical to avoid normalizing it and to take a zero-tolerance policy towards these behaviors.⁴ But even before the violence occurs, hospitalists can engage in training, prevention, and rapid-response plans.⁵ Hospitalists can also ensure that their group espouses practices that promote psychological safety, which are available from both the Institute for Healthcare Improvement and the Agency for Healthcare Research and Quality.^{6,7}

2. De-escalate monitoring and avoid ordering unnecessary interventions. As hospitalists, we often focus on the direct costs of unnecessary interventions, but the indirect cost of administering unnecessary interventions, while hard to directly measure, is often even more significant.⁸ And it doesn’t take rocket scientists to figure out that unnecessary vital signs and monitoring increase the staffing needs for a unit.^{9,10}

3. Improve clinician-nursing teamwork and communication. Working in a high-stress environment without the support of a team is a recipe for burnout and transferring to a different position. Not only is patient care improved when hospitalists and nurses work together as a team, but it also improves job satisfaction.^{11,12}



Dr. Chang

Dr. Chang, the physician editor of *The Hospitalist*, is a pediatric and adult hospitalist at Baystate Medical Center and Baystate Children’s Hospital in Springfield, Mass., where he is an associate professor of pediatrics at the University of Massachusetts Medical School Baystate, chief of pediatric hospital medicine, and vice-chair for clinical affairs at Baystate Children’s Hospital.

Improving teamwork can be an elusive goal, but there are concrete steps that can be taken, such as clinicians contributing to huddles, bedside rounding, and positively reinforcing “good catches” through recognitions during huddles or in a hospital-based recognition system.^{13,14,15}

4. Listen to your nurses. As an intern, I was told this was the first rule of surviving the year, and this continues to ring true to me as a “seasoned” hospitalist. This applies not only to specific patient concerns but also to unit-level concerns. As hospitalists, we often give a collective eye roll when being told about the importance of discharge by noon (DBN). The data, I’ll admit, is quite mixed.¹⁶ But while DBN may not actually reduce length-of-stay as has been sometimes touted, it reduces the overlapping burden for nurses trying to discharge and admit at peak admission times.¹⁷ Minimizing this chaotic overlap can reduce nursing stress and burnout.

As we continue to emerge from the pandemic, as hospitalists, we can take small but clearly helpful measures each day to improve the culture of teamwork and safety on our units that promote nursing and other staff retention. And, as we celebrate National Nurses Week this month (May 6-12), let’s continue to build on our successes with our nursing colleagues to make our units and hospitals not only great places to heal but also great places to work. ■

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Duke University Hospital Medical Research Reviews

By James R. Watson, MD, FACP, Tara Spector, MD, Talía Bernal, MD, Diego Cepeda Mora, MD, Mark W. Chandler, MD, Colby Feeney, MD, FHM, Jesse Rhodes, MD, FAAP, and Suchita Shah Sata, MD, FACP, SFHM

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IN THIS ISSUE

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By James R. Watson, MD, FACP

1 Apixaban reduces risk of stroke or systemic embolism in subclinical AF

CLINICAL QUESTION: Does oral anti-coagulation reduce stroke or systemic embolism risk in subclinical atrial fibrillation (AF)?



Dr. Watson

BACKGROUND: Studies have shown an increased risk of stroke and systemic embolism in subclinical AF (short, asymptomatic episodes detected by permanent pacemakers and implantable cardiac defibrillators). While oral anti-coagulation has a well-recognized role in the treatment of clinical AF, its role in subclinical AF is uncertain.

STUDY DESIGN: Randomized controlled trial

SETTING: 247 clinical sites in 16 European and North American countries

SYNOPSIS: The study included 4,012 patients with subclinical AF (asymptomatic episodes lasting six minutes to 24 hours detected by permanent devices) with a mean age of 76.8 ± 7.6 years and mean CHA₂DS₂-VASc score of 3.9 ± 1.1. Women represented 36.1% of participants. The mean follow-up was 3.5 ± 1.8 years. Patients were randomized in a double-blind, double-dummy fashion to receive apixaban 5 mg twice daily (or 2.5 mg twice daily when indicated) or aspirin 81 mg daily. The study showed a reduced risk of stroke or systemic embolism with apixaban compared to aspirin in the intention-to-treat population (0.78% versus 1.27% per patient-year; hazard ratio [HR], 0.63; confidence interval [CI], 0.45 to 0.88; *P*=0.007). In the on-treatment population, apixaban was associated with a higher risk of major bleeding compared to aspirin (1.71% versus 0.94% per patient-year; HR, 1.80; CI, 1.26 to 2.57; *P*=0.001). Most bleeding episodes reportedly responded quickly to supportive care. Providers should consider apixaban in elderly patients

with subclinical AF weighing the reduced risk of stroke or systemic embolism against the increased risk of major bleeding.

BOTTOM LINE: Apixaban lowered the risk of stroke or systemic embolism compared to aspirin in patients with subclinical AF, but it was associated with a higher risk of major bleeding.

CITATION: Healey JS, Lopes RD, et al. Apixaban for stroke prevention in subclinical atrial fibrillation. *N Engl J Med.* 2024;390(2):107-17.

2 High frequency of AF recurrence in hospitalized patients with new-onset AF

CLINICAL QUESTION: What is the frequency of atrial fibrillation (AF) recurrence in patients with new-onset AF, detected while hospitalized for a noncardiac medical illness or surgery, that returns to sinus rhythm prior to discharge?

BACKGROUND: AF is frequently detected for the first time in patients hospitalized for a noncardiac medical illness or surgery and may be considered a provoked and transient phenomenon (rather than a paroxysmal one) in these instances. The frequency of AF recurrence and appropriate medical management in this population is unclear.

STUDY DESIGN: Matched cohort study

SETTING: Three academic hospitals in Hamilton, Ontario, Canada

SYNOPSIS: The study screened for hospitalized patients with a first episode of AF detected during a hospitalization for a noncardiac medical illness or surgery who returned to sinus rhythm (either spontaneously or via cardioversion) prior to discharge. Each patient was matched with a control patient of the same sex and within 10 years of their age on their ward. The study results evaluated 278 patients (139 matched pairs) with a mean age of 71 years (standard deviation, 10) and a mean CHA₂DS₂-

VASc score of 3.0 (standard deviation, 1.5). Women represented 41% of participants. Patients were followed for one year with three telephone assessments at one, six, and 12 months, and with 14-day continuous ECG patch monitoring at the one- and six-month assessments. The risk of AF was approximately seven times higher in the new-onset AF group at 33.1% (95% CI, 25.3% to 40.9%) compared to 5.0% (CI, 1.4% to 8.7%) in the control group. While a small observational study, the results suggest that these patients may warrant follow-up and monitoring after discharge to detect paroxysmal AF and treat it appropriately.

BOTTOM LINE: In this small observational study of patients who had transient AF detected for the first time during a hospitalization for a noncardiac medical illness or surgery and left the hospital in sinus rhythm, approximately one in three developed recurrent AF within one year.

CITATION: McIntyre WF, Vadakken ME, et al. Atrial fibrillation recurrence in patients with transient new-onset atrial fibrillation detected during hospitalization for noncardiac surgery or medical illness: a matched cohort study. *Ann Intern Med.* 2023;176(10):1299-1307.

Dr. Watson is a hospitalist at Duke University Hospital and a medical instructor in the department of medicine at Duke University School of Medicine in Durham, N.C.

By Talía Bernal, MD

3 SGLT-2 inhibitors may decrease recurrent gout flares in patients with type 2 diabetes

CLINICAL QUESTION: Do SGLT-2 inhibitors decrease gout flares in patients with type 2 diabetes and a known history of gout?

BACKGROUND: Sodium-glucose cotransporter-2 inhibitors (SGLT-2 inhibitors) are known to decrease serum urate levels and the risk of incident gout. However, their role in secondary prevention of gout flares is unknown.

STUDY DESIGN: Propensity score-matched, new-user cohort study

SETTING: British Columbia, Canada

SYNOPSIS: Using a group of population-based, linked, administrative databases, the population of British Columbia was studied. 15,067 patients with gout and type 2 diabetes had first-time dispensing of SGLT-2 inhibitors or dipeptidyl peptidase 4 inhibitors (DPP-4 inhibitors) between January 2014 and June 2022. After propensity



Dr. Bernal

matching, the study population included 8,150 patients. The primary outcome was gout flare counts as defined by emergency department (ED) visits, hospitalization, or outpatient visits for gout with appropriate medication dispensed within one week. SGLT-2 inhibitor use was associated with a 34% lower rate of recurrent gout compared with initiation of DPP-4 inhibitors. The rate of flares requiring an ED visit or hospitalization decreased by 48%. While SGLT-2 inhibitors were associated with higher rates of urinary tract infections, patients using SGLT-2 inhibitors also had a significantly lower rate of myocardial infarction. This was an observational study, which has an inherent potential for having an unmeasured confounder. As it was a population-based study, it is likely generalizable.

BOTTOM LINE: In patients with gout and type 2 diabetes, SGLT-2 inhibitors may decrease gout flares and offer cardioprotective effects compared to DPP-4 inhibitors.

CITATION: McCormick N, Yokose C, et al. Comparative effectiveness of sodium-glucose cotransporter-2 inhibitors for recurrent gout flares and gout-primary emergency department visits and hospitalizations: a general population cohort study. *Ann Intern Med.* 2023;176(8):1067-80.

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By Diego Cepeda Mora, MD

4 Semaglutide in patients with HFpEF and obesity

CLINICAL QUESTION: Is semaglutide an effective heart failure treatment in patients with heart failure with preserved ejection fraction (HFpEF) and obesity?



Dr. Cepeda Mora

BACKGROUND: HFpEF is becoming more prevalent and commonly found in patients with obesity (BMI ≥ 30 kg/m²). Evidence suggests that obesity and adipose tissue may be a contributor to the development and progression of HFpEF. GLP-1 receptor agonists (GLP1RA) are effective weight loss medications, though it is unknown what clinical impact including symptom improvement they have on patients with HFpEF.

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

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

SYNOPSIS: This study enrolled adult patients with obesity (BMI ≥ 30 kg/m²), HFpEF (left ventricular ejection fraction $\geq 45\%$; and New York Heart Association functional class II, III, or IV), a Kansas City Cardiomyopathy Questionnaire clinical summary score (KCCQ-CSS) of less than 90 points, a six-minute walk distance of at least 100 m; and clinical or laboratory evidence of volume-overloaded HF. About 500 participants, median age of 69, were randomized to receive semaglutide 2.4 mg subcutaneously weekly, versus placebo for 52 weeks. In patients randomized to receive semaglutide, there was an improvement in self-reported HF symptoms, with a mean change in KCCQ-CSS of 16.6 (versus 8.7 points in placebo) (95% CI, 4.8 to 10.9, $P < 0.001$). There was also a significant difference in mean percent reduction in body weight with semaglutide (-13.3%) versus placebo (-2.6%) (95% CI, -11.9 to

By Tara Spector, MD

Overnight ED stay leads to worse outcomes

This multicenter prospective cohort study found that, among elderly patients, spending the night in the emergency department awaiting an inpatient bed leads to higher rates of mortality, more complications, and longer length of stay.

CITATION: Roussel M, Teissandier D, Yordanov Y, et al. Overnight stay in the emergency department and mortality in older patients. *JAMA Intern Med.* 2023;183(12):1378-85.

Cognition, functional status, and social support impact admission rate

A cohort study analyzing more than 40,000 emergency department visits by Medicare patients found that geriatric patients are more likely to be admitted to the hospital if they have dementia, reduced ability to complete activities of daily living, or low levels of social support, regardless of their co-morbidities or medical indication for admission.

sociation of functional status, cognition, social support, and geriatric syndrome with admission from the emergency department. *JAMA Intern Med.* 2023;183(8):784-92.

Dr. Spector is the associate medical director of clinical operations for Duke University Hospital Medicine and an assistant professor in the department of medicine at Duke University School of Medicine in Durham, N.C.

CITATION: Smulowitz PB, Weinreb G, et al. As-

-9.4; $P < 0.001$). Semaglutide participants also significantly improved in six-minute walk distance, 21.5 m versus 1.2 m (95% CI, 8.6 to 32.1, $P < 0.001$). Limitations include that most participants were white, the study did not compare semaglutide with other interventions for weight loss, did not assess patients with diabetes or HFREF, and long-term effects have not been studied.

BOTTOM LINE: Semaglutide therapy not only results in significant weight loss but also improves patient-related outcomes in heart failure-related symptoms and physical limitations in patients with HFpEF and obesity.

CITATION: Kosiborod MN, Abildstrøm SZ, et al. Semaglutide in patients with heart failure with preserved ejection fraction and obesity. *N Engl J Med.* 2023;389(12):1069-84.

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By Mark W. Chandler, MD

5 Frailty assessment and perioperative adverse cardiovascular events after noncardiac surgery

CLINICAL QUESTION: Can a frailty assessment tool be used to identify patients at higher risk for major adverse cardiac events (MACE) prior to noncardiac surgery?



Dr. Chandler

BACKGROUND: Studies have outlined the risk of increasing frailty on overall health outcomes and hospitalizations and as a possible risk factor for complications after noncardiac surgery. The association between frailty scores and perioperative MACE is limited.

STUDY DESIGN: Retrospective cohort study

SETTING: Administrative data of patients aged ≥ 45 hospitalized for noncardiac surgeries between 2004 and 2014 in the U.S.

SYNOPSIS: Using the National Inpatient Sample database, 55,349,978 hospitalizations for noncardiac surgeries were identified. Patients were stratified into frailty categories using the validated Hospital Frailty Risk Score (HFRS). Perioperative

MACE occurred in 2.5% of all hospitalizations. However, in those with high and medium HFRS scores, there was a significantly higher risk of MACE (9.1% and 6.9%, respectively) compared to the low frailty cohort (1.3%, $P < 0.001$). High HFRS also carried a significantly increased risk for discharge to skilled nursing facilities compared to medium or low frailty scores (63.5%, 44.5%, and 17.6%, $P < 0.001$). This retrospective review had multiple limitations including lack of comparison to validated cardiac risk calculators; however, the study results mirror prior research that patients with lower metabolic equivalents and more comorbid conditions are at higher risk for MACE following noncardiac surgery.

BOTTOM LINE: The HFRS could be used with other cardiac risk calculators to help stratify patients at higher risk for MACE, inform risk and benefit conversations around surgery, and help plan the expected discharge destination.

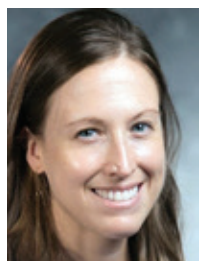
CITATION: Siddiqui E, Banco D, et al. Frailty assessment and perioperative major adverse cardiovascular events after noncardiac surgery. *Am J Med.* 2023;136(4):372-9.

Dr. Chandler is a med-peds hospitalist at Duke University Hospital and assistant professor in the departments of medicine and pediatrics at Duke University School of Medicine in Durham, N.C.

By Colby Feeney, MD, FHM

6 Black patients more likely to experience security emergency responses

CLINICAL QUESTION: Do race and ethnicity predict the use of security emergency responses (SER) in a non-psychiatric inpatient setting?



Dr. Feeney

BACKGROUND: Studies have demonstrated increased restraint use in certain racial groups in the emergency department (ED) and inpatient psychiatry settings. While there is also literature to suggest increased use of security for nonwhite patients, there is little known about the association between race and ethnicity identification and the use of SERs and restraints in the non-psychiatric inpatient setting.

STUDY DESIGN: Retrospective cohort study

SETTING: Single tertiary academic hospital in the Northeastern U.S.

SYNOPSIS: Analyzing non-psychiatric hospitalization data from 24,212 patients, researchers found that patients self-identifying as Black had increased odds of having an SER compared to white patients (2.8% versus 1.6%, odds ratio [OR], 1.82 [CI, 1.39 to 2.39], $P < 0.01$). The effect was diminished but still present even after controlling for previously described predictors of SERs (adjusted OR, 1.36 [CI, 1.02 to 1.81], $P = 0.037$). Hispanic patients did not have a significant difference in odds of having a SER compared to non-Hispanic patients, and there was not a significant difference between groups for the incidence of using restraints during the SERs. Important limitations of the study are its generalizability as it included data from only a single center and the patient population was predominantly white and non-Hispanic. The researchers speculate that the study was not powered to detect a difference in the use of restraints given the low frequency of SERs. Although the methods of this study do not reveal the cause, the study team predicts that implicit bias and racism may contribute to the differential use of SERs.

BOTTOM LINE: Black patients had higher odds of SERs during non-psychiatric inpatient hospitalization compared to white patients, and Hispanic ethnicity was not associated with increased odds of SERs.

CITATION: Valtis YK, Stevenson KE, et al. Race and ethnicity and the utilization of security responses in a hospital setting. *J Gen Intern Med.* 2023;38(1):30-5.

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By Jesse Rhodes, MD, FAAP

7 Piperacillin-tazobactam does not increase the risk of AKI compared to cefepime

CLINICAL QUESTION: Do piperacillin-tazobactam and cefepime have similar risks of acute kidney injury (AKI)?

BACK-GROUND: Observational studies have shown an association between piperacillin-tazobactam and AKI, especially when co-



Dr. Rhodes

ministered with vancomycin. Thus, cefepime has been widely thought to have a lower nephrotoxicity risk compared to piperacillin-tazobactam. However, no randomized controlled trials have been performed to compare the two drugs.

STUDY DESIGN: Randomized clinical trial

SETTING: Single academic medical center in the Southeastern U.S.

SYNOPSIS: This study randomized 2,511 patients who were ordered an antipseudomonal antibiotic in the emergency department (ED) or intensive care unit (ICU) to receive cefepime or piperacillin-tazobactam. The primary outcome was stage 3 AKI (using the Kidney Disease: Improving Global Outcomes [KDIGO] definition) or death by day 14, and there was no significant difference in this outcome between the two groups (OR, 0.95, 95% CI, 0.8 to 1.13). Coadministration rates of vancomycin were practically equivalent between both groups. The study also prespecified a secondary outcome of neurological dysfunction; patients receiving cefepime had fewer delirium- and coma-free days than the piperacillin-tazobactam group (OR, 0.79, 95% CI, 0.65 to 0.95). This study does have several significant limitations as it was only performed at a single institution. Also, neither patients nor clinicians were blinded to group assignment. However, this study does show that the widespread belief of the nephrotoxicity of piperacillin-tazobactam may not be true. It may, in some situations, be more favorable due to a lower risk of neurotoxicity compared with cefepime.

BOTTOM LINE: Piperacillin-tazobactam and cefepime have similar risks of AKI even when co-administered with vancomycin. Cefepime has a slightly higher risk of neurotoxicity.

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

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By Suchita Shah Sata, MD, FACP, SFHM

8 Back off the baclofen: increased risk of encephalopathy

CLINICAL QUESTION: Compared to other muscle relaxants, does baclofen increase the risk of encephalopathy?

BACKGROUND: Baclofen is a GABAergic muscle relaxant that is useful for patients with neuro-

muscular disorders including spasticity. It is also prescribed for low back pain, similar to cyclobenzaprine and tizanidine. It is known that, as baclofen is primarily renally excreted, it should not be used in patients with chronic kidney disease (CKD) due to the risk of encephalopathy. However, it is not known if this risk is shared by all these medications or in patients without CKD.



Dr. Sata

STUDY DESIGN: Retrospective cohort study

SETTING: Tertiary health system administrative data over 13 years

SYNOPSIS: Over the study period there were two active-comparator cohorts created of adult patients: Cohort 1, 16,192 new baclofen users versus 9,782 new tizanidine users, and Cohort 2, 9,330 new baclofen users versus 50,076 new cyclobenzaprine users. To address potential confounding, the authors applied a logistic regression model using demographics, comorbidities, and medication interactions to achieve inverse probability treatment weighting (IPTW). The 30-day risk

of encephalopathy was higher in patients treated with baclofen compared with tizanidine (IPTW incidence rate per 1,000 person-years, 64.7 versus 28.3, subdistribution HR, 2.29; 95% CI, 1.43 to 3.67) and compared with those treated with cyclobenzaprine (52.6 versus 22.3, subdistribution HR, 2.35; 95% CI, 1.59 to 3.48). The increased risk of encephalopathy with the new use of baclofen over cyclobenzaprine and tizanidine persisted over the first year of treatment. A limitation of the study was the reliance on coding data to quantify rates of encephalopathy and the use of prescription fill data as a surrogate for medication use and adherence.

BOTTOM LINE: Baclofen initiation is associated with a higher risk of encephalopathy compared to other common muscle relaxants, and caution should be used when selecting this medication over tizanidine or cyclobenzaprine.

CITATION: Hwang YJ, Chang AR, et al. Baclofen and the risk of encephalopathy: a real-world, active-comparator cohort study. *Mayo Clin Proc.* 2023;98(5):676-688.

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Is 7 Really the Magic Number for RBC Transfusion?

Clinical update

By Dennis Chang, MD, FHM, Carol Faulk, MD, Kieran Patel, MD, and Anthony Dao, MD

Over the past decade, there has been widespread adoption of restrictive red blood cell (RBC) transfusion guidelines.^{1,2} As a result, RBC transfusions have significantly decreased per hospitalization.³ In Table 1, we summarize the RBC transfusion thresholds supported by current clinical evidence and the most recent Association for the Advancement of Blood and Biotherapies (AABB) guidelines, published in 2023. However, there are important nuances to the evidence supporting these guidelines, especially as it relates to RBC transfusions in the setting of acute myocardial infarction.

Due to these nuances, adherence to guidelines should not replace our clinical judgment. Take the following case: A 72-year-old with hypertension, diabetes mellitus type 2, and chronic obstructive pulmonary disease (COPD) presents with an acute on chronic diabetic foot ulcer that began draining three days ago, requiring initiation of antibiotics. On day one of admission, hemoglobin is found to be 7.2 g/dL which is near the patient's baseline. A workup reveals this is likely anemia of chronic disease. On day two of admission, morning labs reveal a hemoglobin of 6.8 g/dL, and the overnight team transfuses one unit of packed red blood cells, resulting in a repeat hemoglobin of 7.7 g/dL.

At first glance, this is a routine transfusion that follows guidelines, but we must answer the following clinical question: Did this RBC transfusion benefit the patient? We would argue that it did not.

In examining the RBC transfusion trials summarized in Table 1, it is important not to equate non-inferiority with benefit. The Table 1 RBC transfusion trials all showed a significant decrease in total RBC transfusions. All but one showed non-inferiority in clinical outcomes between a restrictive transfusion strategy (transfusing only for hemoglobin <7 to 8 g/dL) versus a liberal transfusion strategy (transfusing for hemoglobin <10 g/dL). The only high-quality study showing clinical outcome benefit was in patients presenting with acute upper gastrointestinal bleeding.⁹

Further, it has not been studied in rigorous clinical trials, but it is possible that patients could tolerate a lower RBC transfusion

threshold. Consider a study done in young healthy patients, where they removed blood in aliquots of 500 to 900 mL and measured indicators of oxygen delivery (arterial and mixed venous oxygen content, oxyhemoglobin saturation, or arterial blood lactate) before and after each blood aliquot removal.¹⁰ At a hemoglobin concentration of 5 g/dL, there were no significant differences in any of the oxygen delivery indicators and only two patients had significant ST changes on the Holter monitor; both resolved spontaneously.

Coming back to the case above, a transfusion was given reflexively in response to a hemoglobin less than 7 g/dL. Instead of using a hemoglobin of 7 g/dL as a strict rule to transfuse, the Association for the Advancement of Blood & Biotherapies (AABB) guidelines and experts emphasize the use of clinical judgment with the following factors to be considered prior to transfusion: patient symptoms, clinical status, comorbidities, and individual wishes of the patient. This was not done in the case above and there is no evidence that the benefit of one RBC unit outweighed the risks of transfusion for this patient.

A common diagnosis that deserves particular emphasis when discussing RBC transfusion thresholds is acute myocardial infarction (AMI).

The largest trial included in the AABB guidelines was the REALITY trial.¹¹ In this trial, 668 patients with AMI with or without ST-segment elevations and with a hemoglobin between 7 and 10 g/dL were randomized to a restrictive transfusion strategy (transfusion for hemoglobin concentration ≤ 8 g/dL) or a liberal transfusion strategy (transfusion for hemoglobin concentration ≤ 10 g/dL). The primary 30-day outcome was a composite of all-cause death, stroke, recurrent myocardial infarction, or emergency revascularization, and it occurred in 11% of the restrictive group and 14% in the liberal group. The difference was not significant. This was true for all subgroups and secondary outcomes. However, in a one-year follow-up study, there were significantly more major adverse cardiovascular events



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Table 1 Summary of transfusion trials

CONDITION	HEMOGLOBIN THRESHOLD FOR TRANSFUSION
ICU (hemodynamically stable)	7 g/dL ⁴
Orthopedic Surgery	8 g/dL ⁵
Cardiac Surgery	7.5 g/dL ^{6,7}
GI Bleeding	7 g/dL ⁸
History of Coronary Artery Disease	7 g/dL ^{4,5}
Acute MI	10 g/dL ⁸

after five months (hazard ratio, 1.71 [95% confidence interval (CI), 1.00 to 2.94]) in the restrictive group versus the liberal group.¹² Because of this trial and other trials showing mixed results, the 2023 AABB guidelines did not make any recommendations for patients with AMI but did mention that a larger randomized trial, called MINT, was nearing completion.

The MINT trial was subsequently published in the December 2023 issue of the *New England Journal of Medicine*.⁹ This was a well-done, rigorous trial that included 3,504 patients with AMI with or without ST-segment elevations and a with hemoglobin less than 10 g/dL. Patients were randomized to a restrictive transfusion strate-

gy (transfusion for hemoglobin concentration ≤ 8 g/dL) or a liberal transfusion strategy (transfusion for hemoglobin concentration ≤ 10 g/dL).

Patients were ineligible if they had uncontrolled bleeding, were receiving palliative treatment, were scheduled for cardiac surgery, or declined blood transfusion. The primary outcome was a composite of 30-day myocardial infarction or death, and occurred in 16.9% of patients in the restrictive-strategy group and 14.5% of patients in the liberal-strategy group, risk ratio of 1.15 (95% CI, 0.99-1.34; $P=0.07$). The secondary outcome results are shown in Table 2. For all secondary outcomes, there were no significant differences but there was a

Table 2 MINT trial outcomes

30 -DAY OUTCOME	RESTRICTIVE GROUP	LIBERAL GROUP	RISK RATIO (95% CI)
Death	9.9%	8.3%	1.19 (0.96-1.47)
MI	8.5%	7.2%	1.19 (0.94-1.49)
Death, MI, coronary revascularization, readmission	19.6%	17.4%	1.13 (0.98-1.29)
Cardiac Death	5.5%	3.2%	1.74 (1.26-2.40)

trend in all outcomes towards possible harm in the restrictive strategy group. Moreover, cardiac death was significantly more common in the restrictive strategy group versus the liberal strategy group (5.5% versus 3.2%; risk ratio 1.74 [95% CI, 1.26 to 2.40]). Given the MINT trial results, the long-term outcomes in the REALITY trial, and the exclusion of patients with AMI in previous RBC transfusion studies, an editorial in the *New England Journal of Medicine* written by a member of the U.S. Food and Drug Administration's blood products advisory committee recommended a liberal RBC transfusion strategy for patients with AMI.¹³

Bottom line—RBC transfusion remains a powerful tool in helping our patients. Targeting a lower hemoglobin transfusion threshold

of 7 g/dL in most patients is supported by the evidence and is an important improvement in reducing unnecessary transfusions and conserving a valuable resource. However, this transfusion threshold should not replace our clinical judgment and we must continue to rely on the clinical context, risks and benefits, and patient preference when deciding to transfuse patients. Lastly, in patients with acute myocardial infarction, we would support the use of a liberal transfusion strategy targeting a hemoglobin concentration of 10 g/dL. ■

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Practice Management

Tricky Transitions

Challenges for skilled nursing facilities create backlogs and questions for many patients managed by hospitalists

By Vanessa Caceres

With skilled nursing facing thin margins and high costs, many hospitalists are also struggling to transfer patients for the care they need from these types of facilities.

This becomes a big challenge when 20% to 30% of patients are transferred from hospitals into skilled nursing.

At Jackson Hospital in Montgomery, Ala., hospitalist Sandeep Virk, MD, program director of Jackson Hospitalist Group, says that about 30% of patients are transferred into skilled nursing. His hospital sees a large number of diabetes, kidney disease, and hypertension patients who require a transition to nursing homes, rehabilitation, and long-term care facilities.

Jorge Santibanez, MD, MBA, CPE, SFHM, a hospitalist with Utah Regional Hospitalists in Salt Lake City and president and CEO of PAC-Partners, a multistate post-acute care practice, says that an average of 20% of patients require some form of transitional care, including skilled nursing,

rehabilitation, and long-term care. "The current inpatient demographic represents an older population with more comorbidities that come with increased life expectancy and higher needs after discharge," he said.

Nationally, approximately 20% of Medicare beneficiaries get discharged from hospital care to a skilled nursing facility, says Robert Burke, MD, associate professor of medicine with the University of Pennsylvania Perelman School of Medicine and a senior fellow with the Leonard Davis Institute of Health Economics at the University of Pennsylvania, both in Philadelphia. Dr. Burke does research related to skilled nursing care.

Struggles within transitional care

Despite an obvious need for transitional care for a portion of patients leaving hospitals, skilled nursing facilities are struggling to keep up for a few reasons:

- It's hard to stay financially afloat. "Many skilled nursing facilities operate on thin margins, heavily reliant on Medicare reimbursements, which often do not cover the full cost of care," Dr. Santibanez said. When the reimbursements don't keep up with rising costs, facilities have trouble remaining financially

viable. Added costs associated with labor since the COVID-19 pandemic also play a large role in these cost challenges, says Mark E. Reagan, an attorney and managing partner with the San Francisco and Boston offices of Hooper Lundy Bookman. Mr. Reagan is also chair of the firm's post-acute and long-term care practice.



Mr. Reagan

- At the same time, skilled nursing facilities may have to meet numerical staffing requirements to adhere to certain state requirements. These numbers may change from time to time. "Skilled nursing facilities need more caregivers to serve patients and meet staffing requirements, and those caregivers need to be paid more than they have ever been," Mr. Reagan said.
- Because of financial and staffing challenges, some areas of the country are seeing a larger number of skilled nursing facilities closing. This is something that Mr. Reagan observes is more common in rural areas as well as in states with low reimbursement and high cost of living. Both financial and regulatory constraints are forcing smaller facilities to go out of business or to consolidate with larger organizations that can leverage economies of scale, Dr. Santibanez says.

Dr. Virk points to what is happening in his own state. "Health-care costs have skyrocketed since COVID-19, with increased labor and nursing costs. Regulations have gone stricter with so many checkboxes, so you need more money and resources to do the same work. Insurance companies are delaying or denying claims on a higher percentage of these patients," he said.

Dr. Burke says that national statistics may not show that more transitional facilities are actually closing, as for many a new owner will take over. Yet he does agree that the skilled nursing facility workforce has been hit hard by the COVID-19 pandemic and that these facilities are having an identity crisis as they get sicker patients from hospitals.

"All facilities in the post-COVID-19 world are grappling with how to deal with this new reality. The conflict between the payment—Medicare versus Medicaid—and the types of care provided—short-term rehab versus long-term care—are different but are co-located in the same facility" Dr. Burke said.

Variable lengths of stay for episodes of care, placed on residents by payors outside of Medicare Part A, can also make it difficult for transitional care facilities to operate efficiently, Mr. Reagan says.

Hospitalists have a critical role in helping bridge these challenges for patients. They work closely with case managers, social workers, and patients' families to coordinate care, Dr. Santibanez says. This includes ensuring that the



Dr. Virk



Dr. Burke



Dr. Santibanez

transfer of care is consistent with treatment plans.

“If the transitions are done well, [hospitalists] help with reducing risks of rehospitalization and increasing patient satisfaction,” Mr. Reagan said.

How hospitals are coping with changes in transitional care

Hospitals and the hospitalists that work for them have had to shift strategies to cope with fewer skilled nursing beds.

At Jackson Hospital, patients who need skilled nursing sometimes will stay at the hospital longer as they wait for an available bed. A long-term hospital that was in the area closed a few years ago. “It’s been difficult to get patients to that level of care since it’s closed... every hospital is fighting for the same beds,” Dr. Virk said.

Dr. Burke and co-researchers have begun to publish a series of articles focused on what appear to be longer lengths of stay for older patients in hospitals.¹ He adds that the same issue happened in Japan, leading to overcrowding, until it reformed its long-term care system in 2000.

The Hospital of the University of Pennsylvania is also seeing more

patients with long lengths of stay. To help cope with transitional care changes, there is now a transitional care unit within the hospital where these patients are clustered, Dr. Burke says. This allows some specialized resources that can get patients the care they need. “We are also piloting a skilled-nursing-facility-at-home program, like a hospital at home, but this is in the very early stages,” he said.

The use of hospital-based transitional care units faces the same challenges as traditional care facilities, Dr. Santibanez says. Because of this, he says it’s hard to predict if they represent a long-term sustainable solution.

There is also more activity with hospitals entering “bed reservation agreements” with trusted skilled nursing partners, to get access when needed, Mr. Reagan says.

Tips for better transitional care, even when it’s a struggle

There may not be an easy way around a smaller number of beds available within transitional care. However, there are still some things that hospitalists can do to help patients get the care they need.

1. Get to know the clinical teams

at your local skilled nursing facilities. Build up this relationship so you can fill them in on your patients and their needs. “A chart or cover sheet can’t possibly come close to doing so,” Mr. Reagan said. This could include gaining a better understanding of skilled nursing’s clinical roles in assisting with transitions as well as helping them understand what hospitals and hospitalists do, according to Dr. Burke’s research.² Dr. Burke gave a presentation, “Post-Acute Care: What to Know and How Hospitalists Can Improve Care,” at SHM Converge 2024 in April.

2. Have a hospital transitional team. At Jackson Hospital, a daily meeting among hospitalists, case managers, a transitional nurse, and a care coordinator gives them time to go through a transitional plan for each patient. “This has improved the process of care and identified any roadblocks ahead,” Dr. Virk said. Solid processes to improve handoffs along with a detailed treatment plan can help a lot, Dr. Santibanez adds.
3. Communicate regularly with patients’ family members so they know of any anticipated longer stays or roadblocks.
4. Emphasize medication rec-

onciliation, the scheduling of follow-up appointments, and patient education prior to discharge. “These play a critical role during care transitions and creating a feedback mechanism to identify potential errors and close the gap at each level of care until the patient gets back to the community,” Dr. Santibanez said.

More patients remaining within the hospital for a longer time may be the reality for now.

“I think many hospitalists, if they are not already forced to face it, will increasingly be forced to face increased census on their patient teams as we face the limitations of our community-based and institutional, long-term, care options,” Dr. Burke said. “Making these more readily available and easier to pay for holds the most promise for solving this problem long term.” ■

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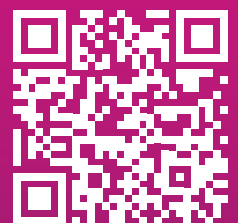
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2024 Masters in Hospital Medicine

The Society of Hospital Medicine inducted three new Masters in Hospital Medicine (MHM) at SHM Converge 2024 in San Diego. This is considered the Society's highest professional honor. The three inductees are Leonard S. Feldman, MD, FAAP, FACP, MHM, Tara Lagu, MD, MPH, MHM, and Jerome C. Siy, MD, MHA, MHM.

The MHM designation was first introduced in 2010 by SHM to recognize hospitalists who have made significant contributions to hospital medicine and healthcare as a whole. Nominees for the honor are SHM members, and the SHM Board of Directors carefully reviews the qualifications of each potential inductee before selecting the final members of each year's MHM class.

Leonard S. Feldman, MD, FAAP, FACP, MHM



Dr. Feldman

Dr. Feldman has been elected a Master in Hospital Medicine in honor of his remarkable educational leadership, impressive academic portfolio, and dedication to our specialty and society.

Following medicine-pediatrics training at the University of North Carolina in Chapel Hill, N.C., and a year as internal medicine chief resident as a PGY5, he joined the team at Johns Hopkins in Baltimore in 2004, where Dr. Daniel Brotman mentored him. He advanced to associate professor of medicine and pediatrics while continuing as a practicing internal medicine and pediatric hospitalist. Dr. Feldman also serves as the program director for the med-peds training program and the Urban Health Internal Medicine Primary Care Track.

Dr. Feldman has been a leader in high-value care. In 2015, he partnered with his mentee, Dr. Amit Pahwa, to start the Department of Medicine High-Value Care Committee, the success of which led to an expansion of the entire Johns Hopkins health system and the creation of the High-Value Practice Alliance.

Additionally, Dr. Feldman has led in building successful, externally funded clinical training programs at Johns Hopkins that target the underserved, while serving as PI on the associated training program grants. Grants have totaled more than \$10 million.

Dr. Feldman has been instrumental in supporting SHM's mission through many volunteer leadership positions, including as president of SHM's Maryland chapter, co-creator of the Med-Peds special interest group, a longtime member of SHM's Education Committee, and an extraordinary contributor to SHM's annual conference as an Annual Conference Committee member, co-chair, and course director in 2017. He has been a regular presenter, including directing the perioperative advanced learning course.

Dr. Feldman created a web-based education-

al platform in consultative and perioperative medicine that is now known as "Consultative and Perioperative Essentials for Hospitalists," SHM's flagship perioperative medicine curriculum on the SHM Learning Portal. He continues to co-edit the curriculum with Dr. Kurt Pfeifer.

Dr. Feldman founded the Things We Do For No Reason Converge presentations and the popular *Journal of Hospital Medicine* series by the same name. He continues as a deputy editor for the column along with Drs. Tony Breu and Elise Lu. He has also received SHM's Excellence in Education and Teamwork in Quality Improvement Awards.

The innovations he has created and partnered with others to develop, within SHM and the field of hospital medicine, will have lasting impacts.

Tara Lagu, MD, MPH, MHM



Dr. Lagu

Dr. Lagu has been elected a Master in Hospital Medicine in recognition of her leadership, service, and innovations to advance the field of hospital medicine.

Dr. Lagu earned her medical degree and master's in public health from Yale University School of Medicine in New Haven, Conn., in 2002 and completed residency training in general internal medicine at Warren Alpert Brown Medical School in Providence, R.I. Following residency, she completed the Robert Wood Johnson Clinical Scholars Program at the University of Pennsylvania in Philadelphia and became an academic hospitalist and researcher at Baystate Medical Center in Springfield, Mass.

Dr. Lagu is now a full professor in the department of medicine at Northwestern University Feinberg School of Medicine in Chicago, where she serves as director of the Northwestern University Center for Health Services and Outcomes Research.

She recently published a qualitative study showing that physicians often feel overwhelmed by the demands of practicing medicine and struggle to accommodate patients with disabilities. This study was published in *Health Affairs* and featured in *The New York Times*, *The Atlantic*, National Public Radio's Science Friday, and several podcasts.

Dr. Lagu is among hospital medicine's most impactful hospitalist researchers and has published more than 150 peer-reviewed papers in high-impact journals. She is also an exceptional teacher, providing mentorship to numerous students, residents, and fellows throughout her career, earning numerous awards and accolades from trainees and colleagues alike.

Dr. Lagu has a legacy of service to SHM. Notably, she was a senior deputy editor for the *Journal of Hospital Medicine* for five years, during which time she played an important role in helping to edit numerous personal

essays from frontline hospitalists about their experiences during the pandemic. These essays had the power to help us learn, empathize, and survive the pandemic in its earliest and darkest days.

Dr. Lagu has also presented at SHM's Academic Leadership Summit at SHM Converge and earned the Excellence in Research Award from the Society in 2019. Her inspirational leadership, willingness to push boundaries, and trailblazing research make Dr. Lagu a model for academic hospitalist leaders.

Jerome C. Siy, MD, MHA, MHM



Dr. Siy

Dr. Siy has been elected a Master in Hospital Medicine in honor of his consistent, long-standing service to patients, colleagues, SHM, and the field of hospital medicine.

Dr. Siy earned his medical degree from Mayo Clinic College of Medicine and Science in Rochester, Minn., and completed his internal medicine residency at the University of Minnesota in Minneapolis, where he also earned his Master of Healthcare Administration degree. He then joined HealthPartners in Bloomington, Minn., where he has remained since.

Dr. Siy is now the associate senior medical director of Value-Based Care, where he oversees the home and community services division, population health, payor relations, and more. He is also an adjunct assistant professor of medicine at the University of Minnesota Medical School.

He has served in numerous impactful leadership roles at HealthPartners, including on the Boards of Directors for HealthPartners, Regions Hospital, and Hudson Hospital.

Dr. Siy has also served as hospital medicine and hospital medicine specialty services division director and department chair of hospital medicine.

Dr. Siy has been a longtime leader at SHM, beginning with co-founding the Minnesota chapter in 2012. He served as chapter president until 2015. Dr. Siy has held leadership roles in numerous SHM committees, including Practice Management, Awards, and Education.

Perhaps Dr. Siy's most significant contribution to SHM was his leadership on the Board of Directors, including as president from 2021-2022—during the COVID-19 pandemic. This was a pivotal time for the world and SHM. He helped guide the organization and navigate uncharted territory as SHM leadership and staff worked with our members to ensure our response and resources accurately reflected their evolving needs, including SHM's first virtual annual conference.

Dr. Siy's leadership has benefited SHM, our profession, and patient care. We are honored to induct him as a Master in Hospital Medicine.

Congratulations to SHM's new Masters in Hospital Medicine. ■



Humanity at the Crossroads

Ethical implications of AI technologies in medicine

By **Gagandeep Dhillon, MD, MBA, Harpreet Grewal, MD, Venkata Buddhavarapu, MD, Ankit Virmani, Salim Surani, MD, and Rahul Kashyap, MD, MBA**

With the breakthrough of artificial intelligence (AI) systems in modern life, there has been increasing pressure to incorporate this technology into medicine and healthcare.¹ Fields such as radiology, emergency medicine, and telehealth have made significant strides toward implementing AI into diagnostic modalities and treatment algorithms, but often at the cost of medical ethics.² An automated self-intelligent system cannot understand important concepts such as patient consent, data privacy, and implicit bias associated with the healthcare field. In this article, we explore these sensitive issues that will become more prevalent as the healthcare industry continues to adopt AI-based modalities.

Unraveling the bias in algorithms

AI has been employed in multiple studies in medicine to uncover hidden disease patterns within highly diverse clinical datasets. AI models can be used to identify, characterize,

and predict diseases, which could potentially alter the path of severe illnesses.³ All AI systems rely heavily on the historical data fed into the initial algorithm to generate new protocols and methodologies.⁴ As a result, inherent biases in this data can become more pronounced, leading to flawed results.

For example, historical data suggests that in the healthcare system, patients from the LGBTQIA+ community, as well as patients from certain ethnic and racial communities, experience a high rate of disparity.^{5,6} Implicit issues such as racial profiling, gender disparities, etc., have often permeated the healthcare community. Incorporating this data may lead to the AI system exaggerating these biases and worsening medical outcomes. If these biases are considered during the initial implementation, AI can improve outcomes much quicker than traditional methods. Disparities in healthcare have garnered increasing attention in the last few years, and the use of AI can have broad implications for the overall quality of care.

AI algorithm biases are not reported well in peer-reviewed literature. A study published by du Toit et al. has noted that out of 63 articles reviewed on hypertension and evaluated against the Harmonious Understanding of Machine Learning Analytics Network (HUMANE) checklist, none of them addressed the algorithm's bias, and a mere 10% mentioned it as a risk.⁷ The

current AI and machine-learning literature has also not addressed this gap in other specialties. Therefore, healthcare and AI professionals must develop strict measures to recognize and rectify such algorithm biases. Ensuring that AI provides non-discriminatory and fair results across a diverse set of patients requires continued monitoring and validation. As the number of practicing physicians older than age 65 has grown in the last few decades, it is vital to ensure transparency and simplicity in algorithm decision-making to ensure improved uptake among this demographic.⁸ Also, implementing checklists like HUMANE fosters a culture of critical thinking and proactively mitigates bias. This increases the quality of academic papers and ensures the responsible development of AI that benefits everyone.

Empowering patients through informed consent

Patient autonomy is the cornerstone of medical ethics, and has become even more critical in the age of AI.⁹ Older patients with multiple chronic health conditions face unique challenges.¹⁰ Many of these patients are skeptical of computer and AI-based modalities and reject them outright.¹¹ An ethical system ensures that these patients are educated about the benefits of implementing AI tools before initiation. There



Dr. Dhillon



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should also be an option to opt out of these modalities if patients choose. Such a transparent process increases trust as patients have options when deciding on their healthcare needs. Many patients are concerned about the security and privacy of their healthcare information, and any educational material must address this vital issue to assuage potential concerns.

Responsible deployment of AI technologies

Regulatory bodies like the U.S. Food and Drug Administration (FDA) are crucial in the regulatory framework for AI applications.¹² The regulatory landscape for AI is dynamic, and it is essential to implement safeguards, establish guidelines for ethical AI development, and prevent misuse. A comprehensive framework must be used to evaluate the overall impact on healthcare systems and our society. As patient welfare is always a priority, clear guidelines are necessary to ensure that AI applications meet strict ethical criteria. Various organizations use different data-gathering systems, which might also create roadblocks in operational activity and standardization.¹³ Additionally, frequent assessments and audits of AI systems can help maintain transparency and accountability.

Liability concerns

Liability concerns, particularly in adverse outcomes, present a complex challenge. While the primary responsibility for due diligence in the selection and application of AI technologies falls upon physicians and healthcare practitioners, the manufacturers and developers of these AI systems must also acknowledge and embrace their role in ensuring the safety and efficacy of their products. The emergence of AI-specific liability insurance offers a novel solution to manage malpractice claims that may arise from integrating AI in healthcare, reflecting the evolving landscape of medical legalities and responsibilities in the era of advanced technology.¹⁴

Hallucinations

Additionally, the implementation of AI in healthcare must address the issue of AI hallucination or AI misinformation, which can further complicate effective deployment. AI misinformation refers to AI-generated content that is not based on real data but is produced by extrapolating existing training data by the algorithm.¹⁵ Healthcare providers need to be mindful of this problem and exercise caution while acknowledging that AI cannot replace

the individualized and personalized care that healthcare practitioners deliver.

Lastly, clinicians must be equipped with the skill sets required to navigate the ethical challenges that may arise with AI use. Training programs in medical schools, residency programs, and CME sessions should emphasize the responsible use of AI and ethical decision making while developing a culture of ethical awareness in the healthcare community.

Emotions and the ethical use of AI in healthcare

The use of AI in healthcare is not merely a technological shift but one that deeply intertwines with the realm of human emotions. Ethical AI implementation is crucial to mitigate potential harm and uphold patient trust. One significant area of concern is the impact AI may have on patient anxiety or fear. The introduction of AI-powered diagnostic tools, for instance, could lead to increased patient distress if not communicated with sensitivity and empathy.¹⁶ The design of these systems must account for emotional nuances, providing explanations that patients can comprehend and addressing anxieties in a supportive manner.¹⁷

Moreover, ensuring equity and fairness in AI algorithms is an ethical imperative that directly influences emotional well-being. If these systems perpetuate biases along racial, gender, or socioeconomic lines, the consequences can be profound. Marginalized patients may experience heightened stress, mistrust, and a sense of dehumanization if they perceive the healthcare system as biased against them.¹⁶ Rigorous testing for bias and continuous monitoring of AI performance is crucial, along with fostering practitioner awareness of potential algorithm shortcomings.¹⁷

Preserving the empathetic human connection in an AI-driven healthcare landscape is paramount. It is essential to maintain a clear distinction between the capabilities of AI and the irreplaceable role of human healthcare practitioners in addressing emotional needs.¹⁸ AI can be leveraged to streamline tasks, allowing providers to establish deeper therapeutic relationships with their patients.¹⁶ By fostering collaboration between human empathy and AI efficiency, healthcare can not only become more efficient but also more emotionally resonant—creating a system that attends to the whole person rather than just their medical data.

As AI continues to transform the healthcare landscape, it is vital to navigate this phase with a keen focus on ethics. Addressing biases in algorithms, obtaining informed consent from

patients, and deploying AI technologies responsibly are crucial steps toward ensuring that the benefits of AI in healthcare are realized without compromising fundamental ethical principles. The healthcare industry can use the full potential of AI to improve patient outcomes while protecting the values of medicine by actively engaging in ethical considerations. ■

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Demystifying Performance Measures for Hospitalists: HCAHPS

By Thomas Miller, MD, FHM, Patricia Dharapak, MD, Kevin Smith, MD, and Anunta Virapongse, MD, MPH

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was first implemented by the Centers for Medicare and Medicaid Services (CMS) to assess and compare performance on patient experience across hospitals, including metrics on communication with doctors and an overall hospital rating. This overall rating accounts for 30% of each hospital's value-based purchasing score, potentially affecting millions of dollars per year.

As originally envisioned, the HCAHPS survey was intended to improve transparency through public reporting and fair comparisons of hospitals, however questions persist around survey response rates, attribution, relation to quality outcomes, and more. Despite these questions, 48.7% of adult-only hospitalist groups include patient experience in their performance-incentive measures-compensation plans.¹ The authors acknowledge that certain vendors may offer additional data analysis to improve upon some of these factors, but HCAHPS as the key driver of patient experience metrics, and specifically its application as a performance metric for hospitalist programs, will be our

focus for this measure review.

Attribution is problematic. For each patient, one score incorporates all physician interactions during a hospitalization, largely negating its value as a reliable metric for individual hospitalists and groups, since multiple hospitalists and non-hospitalists affect responses. Novel approaches such as “provider day weighted” scores which share attribution based on billing data, may improve this.² Two recent *Journal of Hospital Medicine* studies found no correlation between attendings’ assessed communication skills and the patient experience scores attributed to them.^{3,4} CMS officials have also cautioned that HCAHPS is “not suitable for evaluating or incentivizing individuals or groups” and that doing so is “contrary to the survey’s design and policy aim.”⁵ We agree that HCAHPS scores cannot reliably be used to gauge individual or group performance.

With collection and reporting of HCAHPS scores already mandated by CMS, it does not require additional resources to measure. However, beyond the attribution issues outlined above, the measures’ value is also affected by significant lag time in receiving response data, in addition to many hospital-related and demographic factors beyond hospitalists’ control. The American Hospital Association raised concerns



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around falling response rates (from 33% in 2008 to 26% in 2017) and inadequate capture of patients with lower health-literacy levels, suggesting that factoring in social determinants may help control for these confounders when comparing hospitals.⁶ “HCAHPS 2.0” will be implemented January 2025 with the intent of addressing some of these survey concerns. Despite the convenience of established data collection, these factors markedly limit the reliability and actionability of HCAHPS scores for hospitalists.

“Does it lead to better patient safety or outcomes?” is a pivotal question for any hospital medicine metric. Studies to date have shown mixed results as to whether there are even associations between patient experience and other traditional markers of quality of care; however, none provide evidence to support causation between improved HCAHPS scores and better clinical outcomes.⁷⁻¹⁰ Overall, the authors agree with the assessment as stated in one of these studies: “Patient satisfaction is not a surrogate of patient safety and

effectiveness” and “does not reflect the safety of care delivered by a hospital.”⁷

Even without affecting other outcomes, improved patient experience itself is still a worthy goal. Communication training is a common consideration, however, studies of interventions such as didactic sessions, individualized feedback, and incentives show only mixed results in improving physician communication domains, though not in the critical overall “rate the hospital” score.¹¹⁻¹⁴ While hospitalists can affect their patients’ experience, whether they can significantly impact HCAHPS scores is a different question. Our review of the available literature does not substantiate the existence of readily actionable plans demonstrated to improve scores that would support the use of HCAHPS as a hospitalist performance metric. Furthermore, in any initiative of a hospitalist team to improve communication, the success (or failure) in affecting HCAHPS scores would still be confounded by the inclusion of non-hospitalists in the scoring, potentially falsely elevating or lowering scores.

The potential unintended consequences of striving to improve HCAHPS must be considered, because it could diminish resources available for targets more clearly tied to quality and safety outcomes. The authors have significant concern that initiatives aimed at raising patient-experience scores could lead to increased expenditures, increased length of stay, and even patient harm through testing, treatments, or firing of hospitalists in acquiescence to unreasonable demands, or through diverting hospitalists’ time and attention from other critical issues. This concern is highlighted in an outpatient study where respondents in the highest patient experience quartile went on to have higher total expenditures and most notably higher mortality rates.¹⁵ Those authors cite the potential role of physicians complying with patients’ requests for discretionary services that are of little or no medical benefit, noting this association may be compounded when physician compensation is strongly linked to patient experience. A recent *Journal of Hospital Medicine* study found that “patients in higher resource intensity groups were more likely to assign a top decile raw satisfaction rating,” with the potential outcome that “hospitals with high resource utilization could appear more attractive to healthcare consumers.”¹⁶ This finding further supports our concerns that incentivizing HCAHPS could lead to higher resource usage without adding clinical value, and potentially induce harm.

Physician burnout is another

pressing concern. A 2021 survey found that 3.5% of physicians were planning to leave medicine altogether, a strong predictor of actual departure, up from 0.6% in 2011 and 1.3% in 2014.¹⁷ Among the “7 Drivers of Burnout” published by *Journal of Hospital Medicine* is “Being Held Accountable for Measures Beyond Their Control,” with patient experience specifically cited among those.¹⁸ There is evidence that physician burnout correlates with diminished patient experience and that higher physician satisfaction correlates with improved patient experience and higher quality outcomes.^{19,20} Programs aimed at improving hospitalists’ HCAHPS scores may be not only unsuccessful but also counterproductive given the risk of contributing to physician burnout. It is worth considering that improved physician job satisfaction may be one of the keys to successfully improving patient experience.

Conclusion

Emphasis on patient experience has grown as healthcare has become a consumer-driven business. A metric that truly reflected the quality of communication would be valuable in patient safety, adherence to treatment, and as a means for patients to select higher-quality healthcare based on the experiences of others. However, as shared in this review, translating theory to the real world is plagued with pitfalls. While HCAHPS may have value in evaluating a hospital, its applicability to evaluating hospitalists at the group, and more so at the individual, level is severely limited and possibly counterproductive. Based on our review of the literature we strongly recommend against using HCAHPS as a performance measure for hospitalist programs.

This does not mean principles that may contribute to higher hospital HCAHPS scores should be wholly disregarded. At the heart of patient-experience assessment are the worthwhile goals that the patient feels included in health-related decisions, heard with compassion and courtesy by their healthcare team, and that their medical team is working well together. Communication skills can still be enhanced for physicians with good self-awareness and a desire to improve, though effective interventions to accomplish these goals have not yet been clearly demonstrated. Therefore, if selecting a patient-experience metric is still desired, we recommend process measures aimed at improving coordination and communication among team members, improving conflict resolution, potentially improving nurse and physician staffing ratios, and reducing physician burnout. ■

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New ACGME Peds Program Requirements Present Challenges and Opportunities

What does this mean for your hospital?

By Ruth Jessen Hickman, MD

Although updates to the Accreditation Council for Graduate Medical Education (ACGME) program requirements for pediatric graduate medical education will present financial challenges to some hospitals and planning challenges for some resident programs, the changes may provide a more balanced and tailored education. It may also impact long-term training needs for residents planning to become pediatric hospitalists.

ACGME requirement changes

The ACGME is a private non-profit institution responsible for accrediting all graduate medical training programs for U.S. physicians. The goal is to provide national standards for residency programs so that all graduates from accredited ACGME programs achieve similar levels of basic competencies by completion.

The ACGME periodically revises its program requirements. When they first released proposed updated requirements for residents beginning programs in 2024, they received much initial pushback and concern from hospitalists, hospital administrators, and pediatricians, partly concerning potential financial impacts.

Christine Hrach, MD, pediatric hospitalist and associate pediatric residency program director at St. Louis Children's Hospital, shared that when the program-requirement revisions were first released, many worried about the changes and how they might be put into place.

The ACGME opened a second comment period on the proposed requirement revisions and eventually pushed back the timeline, to give programs more time to plan. In February 2024, the slightly modified revisions were formally approved, and they are slated to go into effect for residents entering July 1, 2025.

One area of concern was the potential impact on the number of weeks that residents would spend on inpatient care. Earlier requirements were worded in terms of "educational units," (usually equivalent to four weeks or one month). Previously, residents had



to achieve a minimum of 10 educational units (i.e., 10 months) before leaving the program, but the updated minimums are for 40 weeks, (with a minimum of 16 weeks of general pediatrics or pediatric hospital medicine service).

Thus, minimum inpatient requirements are quite similar for the 2025 revision. However, the revised requirements do make some changes in terms of specialty services, which limit the number of weeks residents can spend here. For example, residents may spend no more than four weeks on a given subspecialty service (in contrast to no more than five education units or five months previously).

Similarly, former requirements specified two educational units (two months) each of both pediatric and neonatal intensive care units. The new requirements mandate 12 weeks total in intensive care units (with a minimum of four weeks in both PICU and NICU), a change which some criticized as insufficient time.

Heather L. Toth, MD, SFHM, a hospitalist and director of the internal medicine-pediatrics residency program at the Medical College of Wisconsin in Milwaukee, pointed out that programs have leeway in how they structure their specific requirements, as long as they follow overarching require-

ments from the ACGME. For example, specific programs can set additional requirements above ACGME minimums.

However, Dr. Toth also explained that some programs, including their pediatric residency program, had previously been using residents for more than their required number of weeks on inpatient pediatric services. But because of other changes in other areas, they need to reduce residents' number of scheduled weeks covering inpatient services to block time for them to meet the new ACGME program requirements.

For example, in the revised requirements, primary ambulatory-care requirements increased to a minimum of 40 weeks (from a minimum of five units or five months). As a component of this, residents must receive four weeks each of developmental-behavioral pediatrics and mental health services, not previously mandated.

"I think it's great that they've made the formal mental health rotation," said Dr. Hrach. "No matter what specialty you go into these days, mental health is such a huge component."

Additionally, residents must achieve 40 weeks of an individualized curriculum distributed across their training, designed to meet their individual needs. Residency programs can help provide guidance on electives that will complement and supplement their career aims. Thus, while some residents might choose to pursue additional inpatient hospital experiences

as part of these individualized requirements, others may not.

Balancing needs for inpatient training, outpatient training, and individualization

The impetus for this increased emphasis on ambulatory care and individualized curriculum comes at least partly from feedback from residents.

Rachel J. Peterson, (@MPAcad-Hosp), MD, a medicine-pediatric hospitalist at Cincinnati Children's Hospital and one of the leaders of SHM's med-peds special interest group, noted, "From their training, many residents felt very prepared from an inpatient standpoint, but not as well prepared to be general outpatient pediatricians."

As residents can be paid considerably less than other medical professionals, they are a financially attractive way for hospitals to help cover inpatient services, even if extra inpatient time doesn't ideally match residents' educational needs and goals.

Richard Wardrop III, (@Mud_Fud), MD, PhD,



Dr. Hrach



Dr. Toth



Dr. Peterson



Dr. Wardrop

FAAP, FACP, SFHM, is a med-peds-trained hospitalist and the current program director of the internal medicine residency program at the Cleveland Clinic. He shared that these requirement changes are in line with general trends in other areas of medicine that have been reprioritizing residents' educational experiences over potential service needs, such as decreases in required ICU coverage for internal-medicine residents.

Dr. Hrach said, "During residency, we should train good general pediatricians who can go out and practice primary care. Over the years, residency may have gotten a little inpatient-heavy, so I think it's important to have more focus on outpatient medicine."

But it's a balance. Dr. Toth added that it's also extremely important for trainees planning to be primary care physicians to get enough inpatient experience, e.g., to be able to recognize very sick children and how to triage them. However, she thinks that residents should be able to obtain adequate hours of pediatric inpatient training under the new requirements with the option of additional inpatient pediatric time as part of the individualized curriculum.

Dr. Peterson pointed out that the requirements will place more onus on individuals to recognize where they need additional learning; some should plan to get additional experience on inpatient services. She pointed out, for example, that individuals who want to go into more rural pediatric hospital programs may benefit from scheduling additional NICU training time.

The same applies to procedural requirements, which were eliminated in the recent update. Programs may still make individual choices to teach or evaluate residents on certain procedures, but individual residents may need to take the lead in making sure they are proficient in the skills that most apply to their future careers.

Financial impacts and scheduling changes

Some pediatric hospital divisions will need to increase the hiring of advanced practice practitioners and hospitalists for 2025 due to decreased numbers of residents on wards and subspecialty teams. However, this will vary by institution, partly depending on their previous residency and staffing arrangements. Dr. Peterson pointed out that academic pediatric hospitals in particular often rely significantly on their resident workforce.

Pediatric hospitals have faced staffing shortages and higher labor costs, partly driven by the greater need for contract labor, and they also face challenges from comparatively decreased reimbursement of pediatrics compared to adult medicine (i.e., Medicaid reimbursement

levels versus Medicare). Navigating the changes may be more challenging for institutions already operating at very thin financial margins.

As an additional potential financial impact, the revised requirements mandate that programs supply core faculty members with 0.1 FTE (full-time equivalent) for their time supporting the program that does not involve direct patient care. This provides faculty with some protected time in which to do more educational work with residents, especially helpful as the amount of individualization in the pediatrics requirements has been so clearly defined.

Dr. Wardrop added, "Having well-run and well-supported GME programs is aligned with better patient outcomes. But some places may see the FTE requirements as an unfunded mandate."

Dr. Toth explained that at her institution, they have already been planning for and making changes to account for the 2025 requirements. For example, they are eliminating a previously resident-led, inpatient, winter, hospital team in favor of teams buffered with additional hospitalist physicians and advanced practice practitioners. They are also eliminating an admitting-resident role to allow residents to choose from other residency experiences.

Dr. Toth noted that, partially because of these changes, her program is moving to an X + Y + Z scheduling program on the pediatric side. Such a schedule allows distinct blocks of outpatient versus inpatient versus clinic time, as opposed to a program design in which inpatient and outpatient exposure is more mixed (e.g., with hospital coverage in the morning and clinic in the afternoon).

Dr. Peterson pointed out that the requirement changes may affect how residency programs handle some nocturnal coverage, as resident teams are not permitted to cover teams at night that they have not covered during the day. "Some hospitals just have not prepared for that," she added.

Dr. Wardrop also explained that institutions may reorganize patient-care services to deal with limits on residents' availability to provide specialty team coverage. For example, patients might be reorganized from a subspecialty team to a general-medicine team, which would allow for greater flexibility in residents reaching their subspecialty limits.

Approaching fellowship and specialization

The requirement changes will enlarge existing differences between training for future pediatric versus adult hospitalists, as adult internal-medicine training currently puts greater emphasis on inpatient

medicine. In contrast, pediatric hospitalist medicine is becoming viewed more as a specialty within pediatrics. Because the outpatient management of many conditions has improved, the inpatient care of children who truly need to be hospitalized has become more complex.

The introduction of pediatric hospitalist fellowships has been a controversial area, as a similar equivalent doesn't exist for adult medicine. The shift to more of an outpatient emphasis for general pediatric training may be in line with this approach, as some graduates leaving pediatric residency may not need all the same training as someone planning to be a pediatric hospitalist.

Dr. Peterson noted that the change in requirements might increase the usefulness and appeal of the pediatric-hospitalist fellowship, as it provides additional inpatient clinical exposure. However, some physicians will still choose to enter pediatric hospital medicine right out of residency. Some may opt for individualized curriculum choices during residency to help them prepare well for such a setting, but others may not.

"Will these changes decrease individuals' comfort in being a pediatric hospitalist straight out of

residency?" said Dr. Peterson. "I'm not sure. We will have to watch to see if these changes in training impact the competence of recently graduated pediatric residents."

Every approach to training requirements has inherent limits, but the more individualized approach is designed to ensure residents are more prepared for their chosen path after residency, whether for work as a primary-care physician, a pediatric specialist, or a pediatric hospitalist.

Dr. Wardrop does not believe the new approach is too focused on outpatient medicine. He added, "With 40 weeks of inpatient medicine, 40 weeks of outpatient medicine, and 40 weeks of individualized curriculum, you're creating a very sophisticated, well-rounded trainee."

Dr. Hrach reported much of the initial concern about the requirement changes seems to have dissipated, at least at many institutions, as it became clearer what exactly the changes entailed and how they might be practically implemented. "Overall, I now think the changes are good for pediatric programs," she said. ■

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Chapter Spotlight: Kansas

There's power in numbers

By Richard Quinn

All SHM chapters talk about getting early-career hospitalists more involved.

The Kansas chapter puts its money where its mouth is.

Its president, Ali Rafiq, MD, FACP, first got involved in the second half of 2020, just a year out of residency and just a year or so after the chapter itself launched. His medical director, Dr. Chady Sarraf, gauged his interest in becoming a chapter leader and, well, he didn't say no.

"I didn't really know what I was getting into," said Dr. Rafiq, now a hospitalist with Sound Physicians at Ascension Via Christi St. Francis in Wichita, Kan. "The first year was kind of slow. I started off as secretary and director of academia. And COVID-19 was going on, as well, so we were all busy taking care of patients, which took up a lot of our time. But then the following year I took the position of president-elect and then president, and things started moving smoothly. Our immediate past president Dr. Alyssa Stephany ensured we kept the ball moving forward by setting



Dr. Rafiq

up monthly virtual meetings."

Smoothly is an understatement. Dr. Rafiq won the Most Engaged Chapter Leader Award for 2023—and the overall chapter won a Platinum Excellence award for 2023.

"I do hope that we are creating some kind of value for our members and the hospitalist community, in general," Dr. Rafiq said. "It's a rapidly evolving healthcare landscape, and hospitalists are really at the center of it. What we hope, from a chapter standpoint, is to provide that professional home that SHM aspires to be for hospitalists. To be the voice on the national stage that brings up issues from Kansas. And then, hopefully, work for the betterment of our patients, because that's what it all comes down to.

"The recognition on a national stage is just the icing on the cake."

Running a new chapter could be daunting, as processes have not yet been established, but Dr. Rafiq sees only opportunity.

"When you have a blank canvas, you can paint any way you want," he said.

Dr. Rafiq says he pays a lot of attention to trying to serve Kansas hospitalists in all settings, be it rural institutions or academic centers in the state's largest cities.

"We're around just over 160 members here in the Kansas chapter," he said. "Most of our members

are based around the Kansas City metro center, understandably, because that's the big urban center. The second largest member nest is around the Wichita area. And then we have a few members scattered around in the rural settings, as well. We have one member who is all the way out in western Kansas, in Garden City, Dr. Julie King, shout out to her!"

Dr. Rafiq says the chapter started an outreach program last year, which held three presentations, in Wichita and Hays.

"We'll probably do that again this year, as well," he said. "We'll reach out to the members and see if we can physically come over there and talk to them—and talk to all the other hospitalists who are not members and show them the value of membership. We like to be the voice of all the hospitalists in the state, and hopefully, the hospitalists who are not members will see value in joining SHM just because of the education, networking opportunities, and professional development. I sound like a broken record, but there is power in numbers."

That may never have been as apparent as during the most recent advocacy day for SHM, when he represented Kansas, along with other chapter leaders and members of SHM's public policy committee, to lobby for hospitalists on Capitol Hill.

"When you go together as a group when you have representation from all over the nation, there is power in numbers," Dr. Rafiq said. "Our voices are louder. That was a big plus of advocacy day. We did see the fruits come by, to a certain extent. We hope to continue doing that on a larger scale.

"Perhaps we need to organize a little bit more at the local level, with the local legislature. Like I said, the chapter is pretty young, so that is something we can aim toward moving forward, to have a more prominent voice in the local legislature, as well."

Dr. Rafiq preaches the value of chapter membership for all hospitalists, whether they get involved early like him, or even if they're getting ready to retire.

"When we started, we basically had just four leadership positions," he said. "Now we have an advisory board for some of our more seasoned hospitalists. We have an advanced practice practitioner director, Kira Bruce, and an opening for a resident champion position (any resident going into hospital medicine can apply). The good thing about SHM is that it's an umbrella for all kinds of people involved in hospital medicine. It really does serve as a professional home for hospitalists involved in the care of acutely ill patients." ■

Richard Quinn is a freelance writer in New Jersey.



SIG Spotlight: Hospital Medicine Fellowships

Laying the groundwork for the future

By Richard Quinn

Being a new kid on the block can be daunting, even in the world of SHM's Special Interest Groups (SIGs).

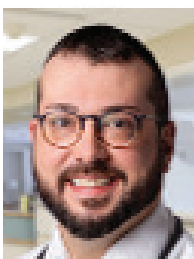
Longer-standing SIGs have board protocols, event schedules, and a history to rely on when trying to do best by their members.

Newer groups have none of that.

That said, veteran SIG leaders can grow weary of entrenched issues, less engagement than they might like, or the struggle to recruit new members.

Newer groups have none of that.

And that yin-and-yang is how Joel Phelps, DO, FAAFP, views the Hospital Medicine Fellowships SIG he vice-chairs. The group started in 2021 and Dr. Phelps feels like he's laying the groundwork for the future.



Dr. Phelps

"We keep asking ourselves, 'What's the five-year plan? What's the 10-year plan?'" said Dr. Phelps, a hospitalist with Deaconess Health System in Evansville, Ind. "From the discussions I've had with people, I'd like to see us lay a foundation for a hospital fellowship curriculum. I would like to see the SHM hospitalist fellowship website program up to date and easily connectable in that way.

"I hope the SIG continues to grow in membership. And I hope we continue to have more collaboration among people with a variety of backgrounds, including internal medicine, family medicine (and advanced practice practitioners.)"

Dr. Phelps sees the SIG as being able to push the value of fellowship programs.

"On a basic, collective level, it's bringing together interested parties, trying to raise awareness for hospitalist fellowships as they're growing and developing," he said. "And connecting with like-minded people across the nation. Really just trying to grow this platform so we can have more of a collective effort as hospitalist fellowships move forward. There are some things many of the programs have in common, but there's also a lot of variety among programs still."

For example, despite the differences between given fellowship programs, the discussion of future accreditation for hospitals focused on adult patients is a big topic.

"Looking farther down the road, there are many interested people already discussing what accreditation might look like, at least for adult hospitalist fellowship programs," Dr. Phelps said. "They're not yet accredited like our pediatric colleagues are. So, part of that is creating a platform that we can have in common as we grow towards that goal. But also allowing programs to maintain their individuality."

Dr. Phelps is cognizant of tailor-

ing the SIG's efforts to its members. Not all program directors—or fellows—want accreditation, so the SIG tries to hear all sides of the discussion.

"I think there are pros and cons," Dr. Phelps said. "Accreditation offers unification that can be understood, as far as what a hospitalist fellowship means across the nation. And that comes with getting everybody on the same page, agreeing on what that would look like.

"On the other hand, one of the advantages of our focusing on those individual program needs, they may be able to have a half-clinical, half-research quality improvement, while another program is all clinical. I think some people would believe, of course, that having accreditation could add some legitimacy as we move forward. But, currently, with those freedoms, I think people can develop the way they see fit at the moment."

Among the biggest challenges for folks looking to start a fellowship program is the lack of a nationalized curriculum.

"There's not necessarily a definitive curriculum or educational platform that you can jumpstart from," Dr. Phelps said. "I think when people think of hospital medicine, there are a lot of core competencies for anyone who has practiced. But not having that uniform curriculum in writing is going to be a big barrier.

"And then also, how do you justi-

fy it? That's a question for everything in medicine: financially, how do we make this work? And how are we covering the cost of fellows when they have, more times than not, at least a somewhat protected patient census while focusing on these academic activities?"

Dr. Phelps, who works alongside SIG chair Dr. Pedro Ramos, says that working with the SIG's members to chart the path of fellowships is key.

"Like anything in medicine, the best outcomes are going to come from collaboration with people," he said. "So, asking others who are currently doing it, 'What does your curriculum look like? What are ways you are giving and receiving feedback with fellows? What kind of core competencies are you focusing on?' A lot of programs, rightfully so, are relying on this collaboration with existing programs while they develop."

And while all SIGs rely on SHM's Converge as a touchstone during the year, when you're the newest SIG on the block, that in-person introduction is even more important.

"We really rely on the opportunity with SHM Converge," Dr. Phelps said. It allows us "to have an open discussion. We rely more and more on Zoom meetings, which are fine, but it will be really nice to have some face-to-face time on such a big platform with people from all over the place." ■

Richard Quinn is a freelance writer in New Jersey.

Can Pentoxifylline Improve Healing of Lower Extremity Ulcers?

By Kyle Lehenbauer, MD, FACP

Case

The patient, Mr. D, has been experiencing swelling in his legs for several years, and seven months prior, he noticed that his skin had started to develop ulcers. He has class 3 obesity, type 2 diabetes mellitus, and smokes a pack of cigarettes daily. Despite receiving home healthcare and outpatient wound-care clinic treatments, the venous stasis wounds continued to worsen and began to leak fluid. Recently, the wound dressings had become painful, and he was hospitalized due to his inability to care for the wounds himself.

Two common types of lower-leg wounds that hospitalists frequently encounter are venous insufficiency ulcers and diabetic foot wounds. For venous ulcers, doctors typically recommend reducing the venous pressure in the legs, which can be achieved through compression, elevation, and in rare cases, procedural intervention. For diabetic foot ulcers, doctors often recommend reducing pressure by avoiding weight-bearing, and may sometimes recommend revascularization, debridement, and clearing of any infection in the ulcer. Additionally, the use of pentoxifylline has been shown to improve healing in venous stasis ulcers.

Pentoxifylline is approved for intermittent claudication. It improves tissue oxygenation by lowering blood viscosity, increasing erythrocyte flexibility, increasing leukocyte deformability, and decreasing neutrophil adhesion and activation.¹ It has also been found to decrease histologic evidence of wound inflammation, reduce wound metalloproteinases, and increase TIMP-1 expression in rats with streptozotocin-induced, diabetic, foot wounds.² These effects could improve wound healing, especially in areas where oxygenated blood flow is reduced.

Cochrane Reviews has been updating reviews on pentoxifylline in venous leg ulcers, with the latest update completed in 2012. They found that pentoxifylline improved the healing of venous leg ulcers by 21% (95% confidence interval [CI], 8% to 34%). It was even more effective in patients who didn't tolerate compression (Relative Risk [RR], 2.25; 95% CI, 1.49 to 3.39).³

A more recent meta-analysis found 13 randomized controlled trials meeting inclusion criteria,

with 481 in the intervention group and 440 in the control group. All trials compared 400 mg of pentoxifylline three times a day versus placebo. One trial also had an arm of 800 mg three times a day. Pentoxifylline was found to increase ulcer healing rates (RR, 1.59; 95% CI, 1.22 to 2.07; $P < .001$) and decrease the amount of time to improvement (RR, 2.36; 95% CI, 1.31 to 4.24).⁴

In the Cochrane Review, adverse effects of pentoxifylline were higher than placebo (RR, 1.56; 95% CI, 1.10 to 2.22) and 72% of the side effects were gastrointestinal including nausea, vomiting, and abdominal pain. Pentoxifylline was generally well tolerated with low numbers of patients stopping the therapy and only 30% citing side effects as a reason they stopped the trial. Lexicomp cites gastrointestinal adverse effects to be between 1% and 10% with nausea being 2% and vomiting 1%. Other side effects were less than 1%.¹

The same mechanism by which pentoxifylline helps with venous-stasis ulcer healing could lead to better healing for diabetic foot ulcers.

Approximately 15% of individuals with diabetes will experience a foot wound at some point in their lifetime. These wounds can greatly impact their quality of life as they may need to avoid bearing weight

on the affected foot, and they often require multiple visits to medical professionals over an extended period to properly heal.

Two-thirds of nontraumatic lower limb amputations are due to diabetic foot ulcers.⁵ Infected or ischemic diabetic foot ulcers are the cause of 25% of hospital stays for patients with diabetes. Mortality rates vary depending on the level of amputation, but for trans-tibial amputations, rates were 22% at 30 days, 44% at one year, and 77% at five years. Median survival was 20.3 months.⁶

To help heal wounds patients are asked to avoid putting pressure on the wound, which usually impairs weight bearing and ambulation. Besides pressure, other factors that can impair healing include infection, poor blood flow, and rarely, cancer in the wound.

In one study with 12 diabetic foot wounds and no comparator group, nine patients continued taking pentoxifylline for three months and eight had healing of the ulcers with one additional person having improvement in the ulcer.⁷

A study in India enrolled 30 patients in standard care plus pentoxifylline and another 32 patients to standard care without pentoxifylline. At 30 days of follow-up, they found out that 26 (86.66%) of the patients on pentoxifylline showed signs of ulcer recovery while 20 (62.5%) in the control group showed signs of recovery.⁸

Another study in India enrolled 40 patients admitted to the hospital for diabetic foot wounds; half were placed on pentoxifylline and half were a control group. 10 of 20 (50%) of the control group healed, while 16 of 20 (80%) of the pentoxifylline group healed. There were more toe amputations in the pentoxifylline group (10 versus 8) but fewer below-the-knee amputations (3 versus 0), and one above-the-knee amputation in the



Dr. Lehenbauer

Dr. Lehenbauer is a staff physician in the division of hospital medicine at the Minneapolis Veterans Affairs Medical Center and an assistant professor, department of medicine, at the University of Minnesota in Minneapolis.

control group with none in the pentoxifylline group. There were three deaths in the control group and none in the pentoxifylline group. These are small numbers, but the overall risk of amputation was about 20% lower in pentoxifylline versus control.⁹

In a study presented as a poster, K Landry, et al. compared 70 consecutive patients referred to an advanced wound healing center, where 16 were prescribed pentoxifylline and 54 patients got standard of care without pentoxifylline. The patients chosen for pentoxifylline were based on patient and prescriber discussions. They were given 400 mg three times a day.

Using the Society for Vascular Surgery Lower Extremity Threatened Limb Classification System, or WIfI, to grade the severity of ulcers, patients on pentoxifylline had faster wound healing (mean of 64 days +/- 37 days versus 117 days +/- 84 days) and a higher probability of complete healing.¹⁰

There is also some evidence that pentoxifylline improves insulin resistance, diabetic neuropathy, diabetic nephropathy, and diabetic retinopathy, and improves liver steatosis while lowering elevated AST and ALT values, so there may be other beneficial effects for patients with diabetes treated for their venous stasis ulcers or foot ulcers.¹¹

“High-quality evidence suggests pentoxifylline can improve wound healing in venous stasis ulcers, but there is weak evidence to support the idea that it can also improve the healing of diabetic foot ulcers and reduce the risk of or delay amputations.”

Back to the case

Long-term-care admission was recommended by wound care and occupational therapy to assist Mr. D with wound care. This involved dressing changes three times a day due to the weeping fluid. Mr. D was started on pentoxifylline 400 mg three times a day and was discharged from the hospital. After a month he was discharged back home, as his wounds had healed.

Bottom line

High-quality evidence suggests that pentoxifylline can improve wound healing in venous stasis ulcers. There is weak evidence to support the idea that pentoxifylline can also improve the healing of diabetic foot ulcers and reduce the risk of or delay amputations.

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- APP Night Support

Prisma Health is a not-for-profit health company and the largest healthcare system in South Carolina. With nearly 30,000 team members, 18 acute and specialty hospitals, 2,947 beds and more than 300 outpatient sites with nearly 2,000 physicians, Prisma Health serves more than 1.2 million unique patients annually in its 21-county market area that covers 50% of South Carolina. Prisma Health's goal is to improve the health of all South Carolinians by enhancing clinical quality, the patient experience and access to affordable care, as well as conducting clinical research and training the next generation of medical professionals. For more information, visit PrismaHealth.org.

Columbia, SC is the state capitol with a thriving economy and downtown revitalization. We are home to the University of South Carolina which affords rich cultural and sports entertainment options. Columbia is ideally located approximately 2 hours from the beaches of South Carolina and the Blue Ridge mountains.

****We are a Public Service Loan Forgiveness (PSLF) Program Qualified Employer!****

Please submit a letter of interest and CV to: Natasha Durham, Physician Recruiter
Natasha.Durham@PrismaHealth.org



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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, 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.



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Banner Health is one of the largest non-profit healthcare systems in the nation with 30 hospitals (15 in Arizona), including University of Arizona academic campuses in Phoenix and Tucson, six long term care centers and hundreds of primary care and multi-specialist clinics in six Western States. Banner Health promotes collaborative team-oriented workplaces and clinical settings that focus on providing excellent patient care. We are physician-led, and value the voice of our providers. We take pride in being integrated and innovative, developing ways to make **Health Care Made Easier, Life Made Better.**

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Hospitalist Opportunities

Gorgeous Lakes, Ideal Climate, Award-winning Downtown

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Greenville, South Carolina is a beautiful place to live and work and is located on the I-85 corridor between Atlanta and Charlotte and is one of the fastest growing areas in the country. Ideally situated near beautiful mountain ranges, beaches and lakes, we enjoy a diverse and thriving economy, excellent quality of life and wonderful cultural and educational opportunities. Check out all that Greenville, SC has to offer! **#yeahTHATgreenville**

Ideal candidates:

- BC/BE Internal Medicine Physicians
- IM procedures highly desired, but not required. Simulation center training & bedside training available if needed.
- Comfort managing ICU patients with critical care consultation

Details Include:

- Group comprised of career hospitalists with low turnover
- Relocation allowance available
- EPIC Electronic Medical Record system
- 7 on/7 off schedule with 1 week of time off per year
- Additional shifts paid at a premium

Available Opportunities:

Hospitalist Daytime Rounder, Laurens County Hospital

- \$301K base salary with \$30K incentive bonus and CME stipend
- Academic appointment and student supervision opportunity
- Full subspecialist back up in house or by phone
- Comfortable with IM procedures preferred

Nocturnist, Greenville Memorial Hospital

- \$360K base salary with \$10K incentive bonus and CME allowance
- Academic appointment and resident/student supervision opportunity
- Full subspecialist back up
- Comfortable with IM procedures preferred, but not required

Nocturnist, Oconee Memorial Hospital

- \$360K base salary with \$10K incentive bonus and CME allowance
- eICU coverage at night
- Nurse practitioner covering floor calls

Hospitalist, Baptist Easley Hospital

- \$295K base salary with \$30K incentive bonus and CME stipend
- Academic appointment and resident supervision opportunity
- Full subspecialist back up in house or by phone
- Comfortable with IM procedures preferred

Please submit a letter of interest and CV to: Natasha.Durham@PrismaHealth.org



I work for Envision Physician Services because I have **access to leaders who understand my career goals** and **support me personally and professionally.**



+ Mohamed M. Bakr, MD, MBA, FACP
Regional Medical Director, Hospital Medicine
Envision Physician Services

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Thursday, May 16, 6:30-8:30 p.m. ET



Join us for a Hospital Medicine Virtual Career Fair via Zoom to connect directly with our clinical leaders and recruiters. Learn about our practice sites and exciting opportunities nationwide.

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SITE MEDICAL DIRECTOR

Portsmouth Regional Hospital

Teaching opportunity with academic

appointment to Tufts University

School Of Medicine

Portsmouth, New Hampshire

HOSPITALIST

TriStar Southern Hills

Nashville, Tennessee

HOSPITALIST

HCA Florida St. Lucie Hospital

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