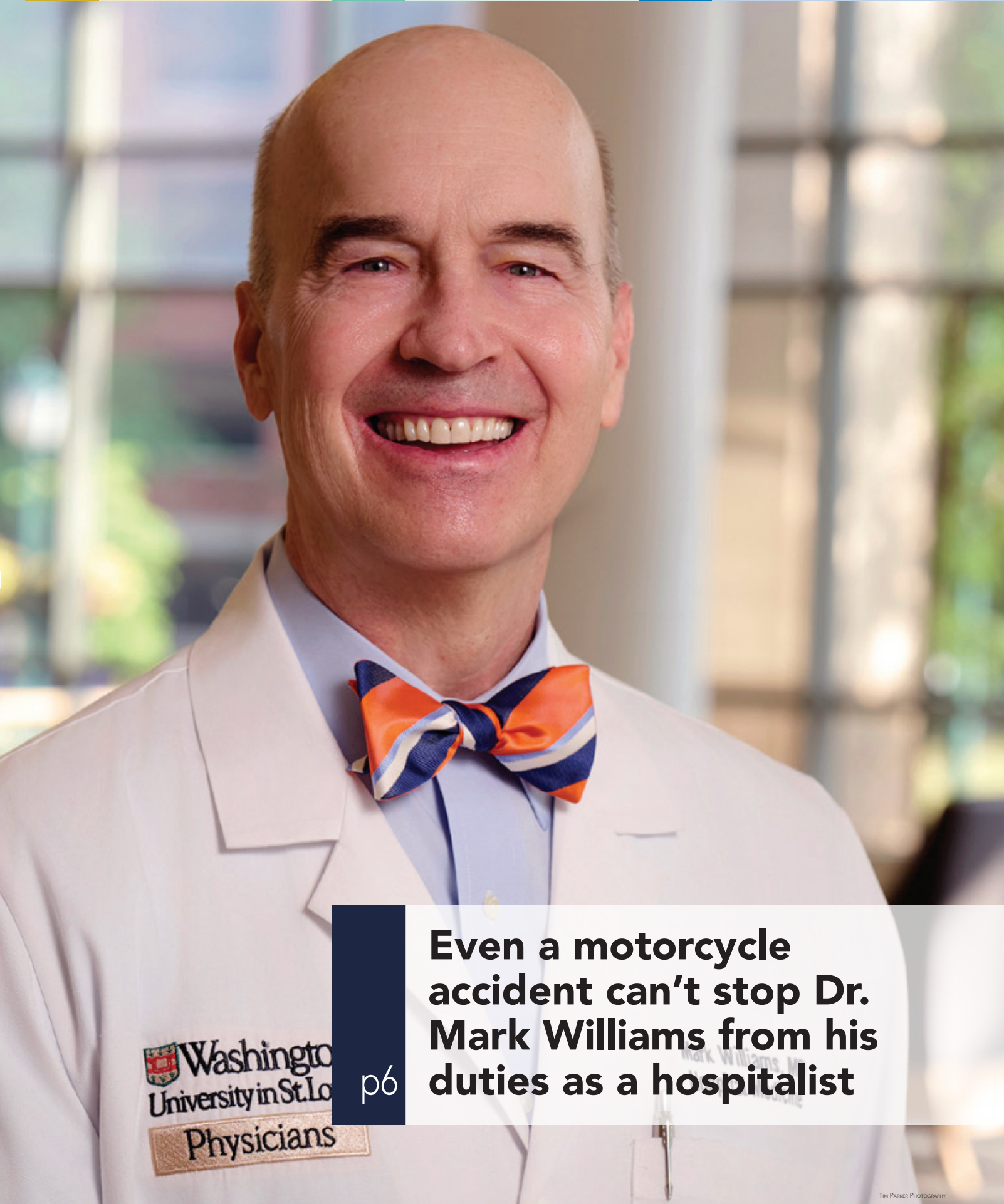


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Even a motorcycle accident can't stop Dr. Mark Williams from his duties as a hospitalist

TIM PARKER PHOTOGRAPHY

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Breathless and Bleeding

By Jeremy Gentile, DO,
FACP, FHM



A 62-year-old man is admitted to the hospital with an exacerbation of chronic obstructive pulmonary disease (COPD) requiring intensification of his inhaler regimen, initiation of IV corticosteroids, and initiation of oxygen support with bilevel positive airway pressure. He does not require oxygen at baseline and has a history of chronic back pain for which he takes twice daily naproxen. By day three he has steadily improved oxygen demands and is successfully weaned to 3 L/min by nasal cannula. However, the nurse calls to report melena. Morning laboratories reveal a drop in hemoglobin from 11 mg/dL to 9 mg/dL. His vital signs remain within normal limits on three liters of oxygen. On examination, there are bilateral wheezes consistent with decompensated COPD. You confirm that his stool is indeed consistent with melena and call gastroenterology. The gastroenterology team asks if you think the patient's respiratory status is stable enough to undergo esophagogastroduodenoscopy (EGD). You tell them that, in your opinion, his respiratory status has significantly improved and his COPD is controlled enough that you think the risks of ongoing hemorrhage outweigh any increased respiratory risk from EGD in the setting of his COPD exacerbation.

What level of billing does this qualify for?

This would qualify for level 3 (99233). This patient has evidence of upper gastrointestinal bleeding, an acute, life-threatening condition. He also has ongoing organ failure (respiratory failure requiring oxygen) associated with a chronic underlying condition (COPD) which is sufficient to justify an ongoing, severe exacerbation of a chronic disease. Either of these would meet the criteria for high-complexity problems. Because you are helping to weigh risks and optimization for a pro-

cedure, you can additionally claim credit under the "high risk of morbidity from additional diagnostic testing or treatment" category. An EGD could potentially carry a high risk of morbidity from respiratory decompensation (worsening COPD, aspiration, etc.) which may require escalation in respiratory support. Documentation of your risk-benefit analysis would help support high-level billing.

Tip

Patients with an acutely decompensated chronic medical condition or acute threat to life will often meet the criteria for level 3 billing (99233) if you are helping to determine the need for, or specifically ordering, additional testing or treatment with a high risk of morbidity. Examples of this could include procedures such as EGD or bronchoscopy (usually in the setting of respiratory failure or increased risk of respiratory failure), heart catheterization, and any urgent or emergent major surgery. Less invasive testing can also be considered to meet this criterion, such as ordering CT imaging with contrast in the setting of acute kidney injury or treatment, or starting anticoagulation in a patient at high risk of bleeding (e.g., in the setting of an acute deep vein thrombosis). Documentation of the increased risk of morbidity associated with the treatment or test and a benefit-risk analysis will help support your billing and medical decision making in these situations. ■

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 in the department of medicine at Michigan State University College of Human Medicine, all in Grand Rapids, Mich.

From JHM

The Editor's Pick for the July issue of the *Journal of Hospital Medicine* is Development and evaluation of a writing retreat program to build community and promote productivity in academic hospital medicine. Scan the QR code for the full article. ■



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Stanford Health Care Medical Research Reviews

By Golda Nohay, DNP, FNP-BC, CNN, Gabriela Oro, AGACNP-BC, Irina Penev, PA-C, and Sarah Conlon, MS, PA-C

Stanford Health Care, Palo Alto, Calif.

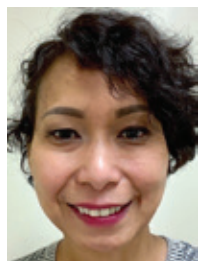
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By Golda Nohay, DNP, FNP-BC, CNN

1 IV Sodium Thiosulphate for Calciphylaxis of CKD: A Systematic Review and Meta-analysis

CLINICAL QUESTION: Does IV sodium thiosulphate improve skin lesions and survival in patients with chronic kidney disease (CKD) experiencing calciphylaxis?



Dr. Nohay

BACKGROUND: Calciphylaxis, also called calcific uremic arteriopathy, is a painful skin condition caused by the calcification of microvessels in the skin. It is associated with risk factors such as end-stage renal disease, abnormal calcium and phosphate homeostasis, vitamin K deficiency, obesity, diabetes, rapid weight loss, and being female. Early detection and prompt treatment are essential for managing this condition's symptoms. Sodium thiosulfate (STS) has been used as an off-label medication to treat calciphylaxis, providing relief from pain and promoting wound healing by reducing calcifications. While there are reports of the benefits of STS in treating calciphylaxis, no clinical trials have been conducted.

STUDY DESIGN: Systematic review and meta-analysis of retrospective cohort studies

SYNOPSIS: The meta-analysis included 19 retrospective cohort studies published before August 31, 2021, which included 422 patients with CKD (estimated glomerular filtration rate <60 mL/min/1.73m² for at least three months) who experienced calciphylaxis. These studies were selected from the 5,601 publications retrieved from targeted databases. The majority of patients were dialysis-dependent (347 patients, 82%), and 23 patients specifically used peritoneal dialysis (PD). More than half of the patients received intravenous STS (233 patients, 55.2%). The Bayes

model was used to quantify skin lesion improvement and survival, while the log risk ratio or log hazard ratio was used to analyze categorical data. The analysis did not show any significant difference in skin lesion improvement and survival benefits between small studies and large studies.

BOTTOM LINE: In the largest meta-analysis of STS studies regarding calciphylaxis management to date, the use of STS treatment does not result in a decrease in skin lesion progression or mortality. Nonetheless, it is essential to recognize the limitations of comparing retrospective studies, and the impact of STS on pain intensity remains uncertain. Consequently, it may still be justifiable to employ STS in the treatment of calciphylaxis, given the severe morbidity and mortality linked to the condition.

CITATION: Wen W, Portales-Castillo I, et al. Intravenous sodium thiosulphate for calciphylaxis of chronic kidney disease: a systematic review and meta-analysis. *JAMA Netw Open.* 2023;6(4):e2310068. doi:10.1001/jamanetworkopen.2023.10068

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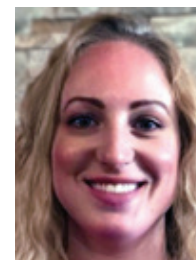
By Gabriela Oro, AGACNP-BC

2 The STRONG-HF Trial: Evaluating the Safety, Tolerability, and Effectiveness of Up-titrating GDMT in Acute Heart Failure

CLINICAL QUESTION: Does rapid up-titration of guideline-directed medical therapies (GDMT) following admission for acute heart failure improve patient outcomes?

BACKGROUND: GDMT provides evidence-based practice guidance to clinicians in the treatment of heart failure. Evidence was scarce regarding proper dosing and stepwise

approach to GDMT intensification following acute heart failure admissions, as well as lack of consensus on the frequency of patient monitoring following medication optimization. This study reviewed the intensification of GDMT and follow-up guidelines over 180 days to determine the impact of these interventions in morbidity and mortality.



Ms. Oro

STUDY DESIGN: The STRONG-HF trial was an open-label, international, randomized controlled trial

SETTING: The trial recruited adults between the ages of 18 and 85 years, admitted within the 72 hours before screening for heart failure. Patients selected were followed in 87 inpatient hospitals spanning 14 countries across four continents between May 2018 and September 2022.

SYNOPSIS: 1,085 adult patients enrolled (mean age, 63; 61% male; 77% Caucasian; average left ventricular ejection fraction, 36%) with 542 patients assigned to the high-intensity care group, and 536 patients assigned to the usual-care cohort. The usual-care group received treatment as per the local overseeing clinician. The high-intensity group received the first dose two days before discharge, and up-titration of GDMT to 100% of recommended therapies within two weeks, monitored through biweekly visits.

By 90 days, the high-intensity group had greater incidence of up-titration to full doses of renin-angiotensin system inhibitors, beta-blockers, and/or mineralocorticoid inhibitors (ranging from 49% to 84%) when compared to the usual group (2% to 46%). The high-intensity group had 4.8 clinic visits, compared to one visit in the usual-care group. Results showed that NT-proBNP, New York Heart Association classification, BP, and pulse had significantly decreased in the high-intensity group. Also, 15% of patients in the high-intensity group were readmitted, compared to 23% of those given usual care.

Limitations of this study included early termination of the usual-care pathway, as it was deemed unethical to withhold high-intensity treatment from this cohort, and omission of sodium-glucose transport protein 2 inhibitors, due to their approval following initiation of the study.

BOTTOM LINE: Rapid up-titration of GDMT following initial admission and close follow-up following discharge was shown to reduce symptoms, heart failure readmissions, and risk of death within 180 days. Patients also reported improved quality of life when compared to usual-care practices.

CITATION: Mebazaa A, Davison B, et al. Safety, tolerability and efficacy of up-titration of guideline-directed medical therapies for acute heart failure (STRONG-HF): a multinational, open-label, randomised, trial. *Lancet.* 2022;400(10367):1938-52.

3 Maximizing Oral Iron Supplementation Absorption in Women

CLINICAL QUESTION: Is oral iron supplementation absorption influenced by the timing and/or nutritional elements concurrently consumed in healthy iron-deficient women?

BACKGROUND: Current guidelines advise consumption of iron supplements in the morning, accompanied by ascorbic acid (AA) to enhance iron uptake, separate from mealtimes. There is, however, scant evidence to support the timing of intake, the influence of alternate dietary options, and how these factors may influence the absorption in otherwise healthy, non-anemic, iron-deficient women. This study measured the impact of timing and dietary intake and its effect on iron absorption levels.

STUDY DESIGN: Randomized, open-label, controlled, crossover trial

SETTING: The trial was conducted within the ETH Zurich system, recruiting women from public research universities in Zurich, Switzerland between June 2021 and December 2022.

SYNOPSIS: This study monitored 34 iron-depleted women aged 18 to 45 years, over 43 days. Participants received 100 mg elemental iron in the form of ferrous fumarate, following six distinct nutritional accompaniments:

- **Morning following overnight fasting:**
 - water
 - 80 mg AA
 - 500 mg AA
 - coffee
 - breakfast
- **Afternoon following four-hour fasting:**
 - water

Primary outcomes measured fractional iron and total iron absorption levels. Results showed both doses of AA similarly increased iron absorption by 30%, drinking coffee decreased absorption by 54%, and eating breakfast decreased absorption by 66%.

When taken in the afternoon, absorption was 37% lower than morning absorption. It was also noted that serum hepcidin levels were higher in the afternoon regardless of fasting. Limitations included: an additional three-hour fasting period following doses and breakfast with untested individual components. These results confirm that every-other-morning doses of iron supplementation with AA as an enhancer contribute to higher absorption rates. The additional three-hour fasting period following the consumption of supplements may pose an impractical hindrance to long-term adherence.

BOTTOM LINE: Recommendation for practical optimized strategies for iron supplementation timing to every other day in the mornings, in conjunction with AA or orange juice, best taken before a meal, to improve iron status in iron-deficient women.

CITATION: von Siebenthal HK, Moretti D, et al. Effect of dietary factors and time of day on iron absorption from oral iron supplements in iron deficient women. *Am J Hematol.* 2023;98(9):1356-63.

Ms. Oro is a nurse practitioner in the department of heart transplant and mechanical circulatory support at Stanford Health Care in Palo Alto, Calif.

By Irina Penev, PA-C

4 Ticagrelor or Prasugrel in Patients with Acute Coronary Syndromes

CLINICAL QUESTION: Is the treatment strategy with ticagrelor superior to prasugrel in acute coronary syndrome (ACS) with planned invasive evaluation at one year?

BACKGROUND: Dual antiplatelet therapy is the standard treatment for ACS (acute ST-elevation myocardial infarction (STEMI), acute non-ST-elevation myocardial infarction (NSTEMI), and unstable angina (UA)). Prasugrel and ticagrelor are third generation thienopyridines with more rapid and consistent platelet inhibition and proven superiority over clopidogrel in ACS in previous trials. In STEMI both drugs require a pretreatment loading dose before angiography. In NSTEMI, the pretreatment dose for prasugrel is not needed. Benefits in pre-PCI platelet inhibition in NSTEMI, and ticagrelor over clopidogrel were seen in the PLATO trial. The lack of superiority of prasugrel over clopidogrel was seen in the TRILOGY ACS trial.

STUDY DESIGN: Investigator-initiated, multicenter, randomized, open-label clinical trial. Ticagrelor (loading immediately after randomization) or prasugrel (loading after randomization in STEMI, but after angiogram and before percutaneous coronary intervention in NSTEMI) were assigned in a 1:1 ratio. Where indicated, conservative therapy of aspirin plus the trial medication was prescribed. All patients were followed at one, six, and 12 months. The primary endpoint was the composite at one year of myocardial infarction, stroke, or death from any cause. The secondary safety endpoint was the incidence of bleeding.

SETTING: 21 centers in Germany and two centers in Italy

SYNOPSIS: 4,018 patients were enrolled (41.1% STEMI, 46.2% NSTEMI, and 12.7% UA). 2,012 were assigned to ticagrelor and 2,006 to prasugrel. 84.1% underwent percutaneous coronary intervention, and 2.1% received coronary artery bypass grafts. About 81% were discharged on trial medication. At one year, 15.2% had stopped ticagrelor, and 12.5% had stopped prasugrel. All but 90 patients (41 ticagrelor, 49 prasugrel) completed follow-up (83% by phone, 10% in clinic, and 7% by letter). A primary endpoint event occurred in 9.3% of the ticagrelor versus 6.9% in the prasugrel group ($P=0.006$): death, 4.5% versus 3.7%; myocardial infarction, 4.8% versus 3%; stroke, 1.1% versus 1.0%. Definite or probable stent thrombosis occurred in 1.3% versus 1.0% and definite stent thrombosis in 1.1% versus 0.6%. Major bleeding was seen in 5.4% of the ticagrelor versus 4.8% in the prasugrel group ($P=0.46$). Limitations are open-label design, and the majority of follow-ups were completed by phone.

BOTTOM LINE: Prasugrel was superior to ticagrelor at one-year follow-up in ACS with planned invasive evaluation, with a significantly lower composite endpoint of death, MI, or stroke and a similar incidence of major bleeding.

CITATION: Schupke S, Neumann F, et al.



Ms. Penev

Ticagrelor or prasugrel in patients with acute coronary syndromes. *N Engl J Med.* 2019;381(16):1524-34.

Ms. Penev is a physician assistant in the heart transplant and mechanical circulatory support program at Stanford Health Care in Palo Alto, Calif.

By Sarah Conlon, MS, PA-C

5 No Difference in Safety or Mortality with Restrictive Versus Liberal Fluid Resuscitation Strategy for Ongoing Resuscitation in ICU Patients with Septic Shock

CLINICAL QUESTION: Are there safety or mortality benefits to the use of a more restrictive versus liberal IV fluid resuscitation in critically ill patients with septic shock?

BACKGROUND: IV fluids are administered to improve circulation in patients with septic shock. The use of higher volumes of IV fluids has been associated with harm in observational studies and randomized trials involving patients with sepsis and septic shock.

STUDY DESIGN: Stratified, parallel-group, open-label, randomized, clinical trial

SETTING: Intensive care units (ICUs) in Denmark, Norway, Sweden, Switzerland, Italy, the Czech Republic, the United Kingdom, and Belgium

SYNOPSIS: Primary outcome data was available on 1,545 intensive care unit patients. Each group shared similar characteristics at baseline. Half of these patients were in the restrictive-fluid group. After initial IV fluid resuscitation, patients in the restrictive arm could only receive fluid based on four conditions: in severe hypoperfusion; to replace documented fluid losses; to correct dehydration or electrolyte deficiency because the enteral route was contraindicated; or to ensure a total daily fluid intake of one liter. Median IV fluid received in this group was 1,798 mL. The other half was assigned to the standard-fluid group. There was no upper limit set for the amount of IVF that a patient in the second group could receive and the median was 3,811 mL.

THREE MAIN LIMITATIONS WERE NOTED: protocol violations existed in the restrictive group; the patients had already received a median of about three liters of fluid resuscitation in the hours between presentation and randomization; and the group already requiring respiratory support seemed to do a bit better with fluid restriction.

BOTTOM LINE: After initial IV fluid resuscitation, the use of a restrictive strategy for ongoing resuscitation in septic ICU patients appears safe, though not necessarily superior to a more liberal fluid resuscitation.

CITATION: Meyhoff TS, Hjortrup PB, et al. Restriction of intravenous fluid in ICU Patients with septic shock. *N Engl J Med.* 2022;386(26):2459-70.

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Demystifying Performance Measures for Hospitalists: Length of Stay

Better communication and stewardship of high-value care can help

By **Sadia Abbasi, MD, MHA,**
Kristin Gershfield, MD, FHM,
Vidushi Golla, MD, FACP, and
Ting-Yu Jih, MD

A 73-year-old woman presents with syncope, generalized weakness, and frequent falls on a Friday afternoon. Past medical history includes coronary artery disease, aortic stenosis, atrial fibrillation treated with apixaban, type 2 diabetes mellitus, and hypothyroidism. Emergency department evaluation reveals sepsis secondary to a urinary tract infection. A CT scan of the head yields no acute findings. An echocardiogram was ordered due to syncope in the context of a history of aortic stenosis. The hospitalization was otherwise uneventful, and physical therapy (PT) was consulted for her generalized weakness and falls. On the morning of day three, both the echocardiogram and PT evaluation remained pending. PT ultimately recommended subacute rehabilitation placement on the afternoon of day three. Social work provided a list of facilities on day three, but patient preferences were not communicated until day four; insurance authorization was sought and obtained on day five, culminating in the patient's discharge.

This case illustrates a length of stay (LOS) increase of two days that was attributable to avoidable delays in testing and obtaining a PT evaluation, as well as the need to obtain insurance authorization.

Operational efficiency, cost containment, quality of care, and overall hospital performance can impact LOS. Medicare's inpatient prospective payment system for reimbursing hospital care, which began in the 1980s, spurred a focus on shorter lengths of stay by paying the same amount for procedures or diagnosis-related groups, regardless of days spent in the hospital. Current trends in healthcare, such as the shift toward value-based care and alternative payment models, continue to emphasize the importance of efficient and high-quality care delivery. This article examines whether LOS is an appropriate performance metric for individual hospitalists or hospitalist groups. Although hospitalists are central to the management of inpatient care and can implement strategies to streamline and optimize patient care, LOS is impacted by many other aspects of the healthcare network and social system.

Most hospitals closely follow LOS metrics, and average LOS

(ALOS) and risk-adjusted LOS are often available monthly through third-party vendors. Also commonly referenced is geometric mean length of stay (GMLOS). While performance on LOS metrics can usually be attributed to the hospitalist group involved in a patient's care, assigning attribution to an individual hospitalist is more challenging due to the number of providers participating in the patient's care during the episode of care. Alternatively, discharge efficiency, which is a surrogate marker for LOS, can be attributed to individual providers and could have implications for individual performance. While ALOS is often reported, we prefer risk-adjusted LOS metrics like observed-to-expected LOS.

While hospitalists do not have absolute control over the progression of patient care, they can influence it in many ways. Making a correct and timely diagnosis and providing appropriate treatments are the foundation of optimal LOS. Hospitalists are a pivotal part of interdisciplinary rounds, in which they identify relevant social determinants of health and potential discharge barriers while collaborating with consultants, community primary care physicians, case managers, social workers, and family members. Addressing barriers with the care team contributes to a smoother and more efficient discharge process. Clear and frequent communication with patients, families, and consultants about the in-hospital care and post-discharge plans helps to ensure patients are agreeable to discharge once medically cleared.

Within the realm of utilization management, hospitalists evaluate and prioritize the appropriateness of inpatient tests, procedures, and consultations to prevent unnecessary delays in the progression of care caused by redundant and low-value interventions. Finally, complete and accurate documentation of co-morbidities and complications impacts expected LOS and/or GMLOS, and therefore risk-adjusted LOS.

Length of stay is often influenced by factors outside the hospitalist's control. These factors contribute to excess days, the difference between the patient's actual length of stay and GMLOS for the corresponding diagnosis-related group. These include resource limitations, unexpected complications, and procedural schedules. Mental health conditions, the availability of caregiver and social support networks, fi-



Dr. Abbasi



Dr. Gershfield



Dr. Golla



Dr. Jih

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nancial constraints, cultural and language barriers, health literacy, and substance use disorders can all contribute to the duration of a patient's hospital stay. Discharges for the uninsured population may be delayed due to apprehensions about unsafe discharges, primarily driven by uncertainties about follow-up care.

At the hospital resource level, the length of stay can be influenced by factors such as equipment availability (e.g., one CT scan machine versus two), staffing levels for ancillary services, insurance status, disposition barriers, and the need for prior authorizations (e.g., medications, tube feeds). Discharge delays encompass various challenges, including waiting for the delivery of durable medical equipment for discharge, and waiting for acceptance and insurance authorization for subacute rehabilitation.

It is in the best interest of patients to minimize LOS, as prolonged stays are associated with increased morbidity, mortality, and the risk of hospital-acquired infections.^{1,2} Nevertheless, an emphasis on optimizing LOS can have an impact on other aspects of patient care, as well as other metrics. The pressure to discharge patients swiftly can have repercussions on the overall patient experience.^{3,4} Additionally, there is some evidence that longer LOS can lead to a reduction in readmission rates.⁵

While there are elements outside of our control, a hospitalist can impact LOS with better communication and stewardship of

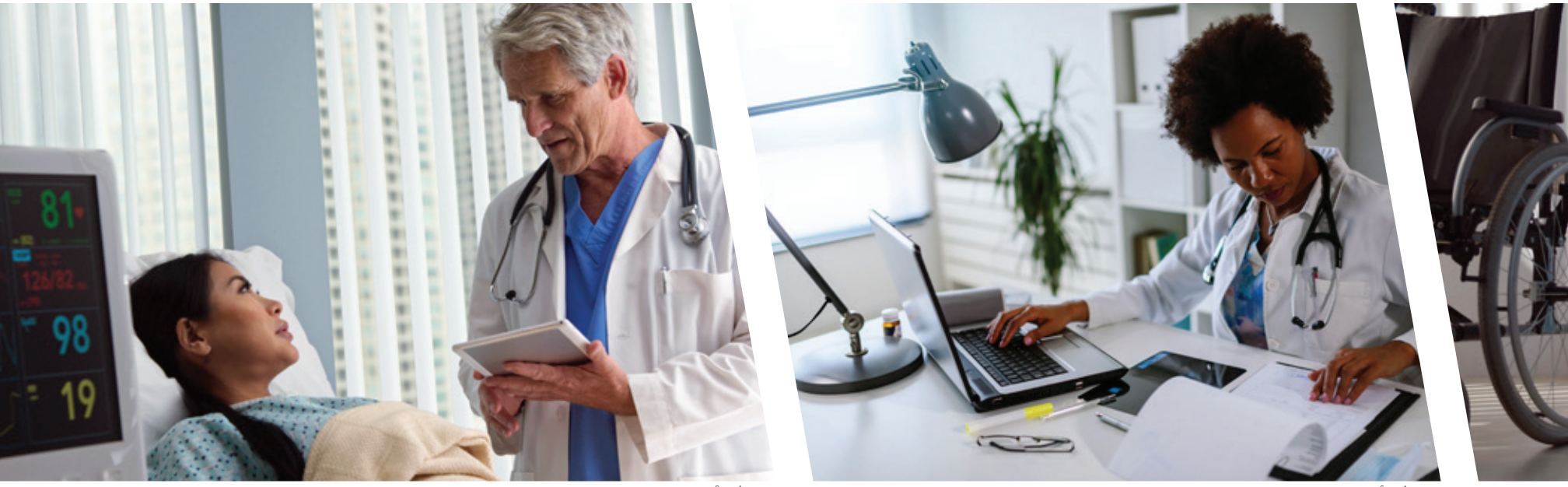
high-value care. Individual attribution is not possible or recommended, but ALOS or risk-adjusted LOS is a metric that hospitalist groups should follow.

Tracking avoidable days is an actionable item to help hospitals pinpoint issues that the administration can address, such as the availability of resources as demonstrated in the case above. We should continue to work with patient-care teams to progress care efficiently by following care pathways, participating in multidisciplinary rounds, and identifying and escalating barriers to discharge.

For the LOS detailed table and more references, visit the SHM Practice Management – Quality Measures homepage at hospital-medicine.org/practice-management/QualityMeasures.

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Managing the Long-term Physical Effects of Being a Hospitalist

More evidence-based research is needed

By Larry Beresford

Mark V. Williams, MD, FACP, MHM, age 64, has been a pioneer of hospital medicine, a physician leader, and a frontline clinician since helping to found the hospitalist program at Grady Hospital in Atlanta in 1998. Today he is chief of the division of hospital medicine at Washington University School of Medicine in St. Louis, where he leads 130 hospitalists and 20 advanced practitioners at Barnes Jewish Hospitals.



Dr. Williams;

Dr. Williams stopped doing night shifts when he was 53. But he continued to take hospitalist shifts in seven-day blocks well beyond the average hospitalist—right up to his accident.

At around 9:30 p.m. on June 8, 2023, he was driving home from a hospital shift on his motorcycle when a driver who didn't see the motorcycle turned into his path, causing him to catapult over the car, off a windshield, and onto the pavement. He was taken by ambulance back to the hospital he had just left, where three surgical procedures were conducted by noon the next day to address arterial bleeding and an open-book pelvic fracture.

Dr. Williams quickly progressed with physical therapy from being bedbound to using a wheelchair, a walker, and then a cane. He returned to the teaching service at Barnes in September and was working seven-day blocks again on the floors by December. The first day back on hospitalist service wasn't so bad, Dr. Williams said, but by the fourth, he realized he no longer had his former stamina—he was exhausted. The accident had made the work much more difficult.

"Thankfully, I was in good shape, previously able to take 40-mile bicycle rides. But also, lucky I wasn't farther from a major trauma center (when the accident happened)," Dr. Williams said. The whole experience has caused him to think a lot about what's needed to make hospital medicine a physically sustainable job for the long run. "How do we find long-term work/life balance in this career?" That issue becomes more important, he said, "as we age. Our joints don't work as well. All things begin to be impacted by age."

What are the rigors?

How demanding, physically, is hospital medicine? What are the cumulative impacts of walking the floors all day, not to mention the added stresses of covering the night shift? And what are some mitigating factors that might enable hospitalists to stay on the job longer, preserving an invaluable workforce for the challenges that lie ahead?

The rigors include, first of all, walking throughout a shift from one patient's room to another, how far depending on the layout of the units and the assignment of patients. When not walking or talking to patients and staff, the alternative is sitting for extended periods typing on a laptop into the electronic health record at whatever open space has been carved out for it in a crowded hospital—likely without a lot of attention to sitting ergonomics. And that can contribute its own impacts.

"I think the physical demand is large, mostly a lot of standing and walking," said hospitalist Jessica Chambers, MD, MPH, FACP, associate program director of the internal medicine residency at the University of Texas at Austin. There's also the mental stress from the sheer number of clinical decisions that need to be made in a typical shift, confounded by the doctor's attention constantly being pulled in three directions at once, she said. (See: Interruptions: Bad for Hospitalists and their Patients, *The Hospitalist*, April 2024.)



Dr. Chambers

For Dr. Chambers, it was important to learn how hospital nurses manage the physical demands, what kind of shoes they wear, the orthotics, the compression socks—"how they are taking care of their bodies. I also think a lot of the time (on the job) we're dehydrated and haven't eaten," she said.

"Sometimes I am actually in the hospital but talking to the patient from my office, calling their room." It might actually accomplish more doing follow-ups by phone rather than walking 10 minutes to get to the patient's room, she said. Other groups are exploring various applications of virtual hospital medicine, such as covering night shifts from afar when there isn't a doctor in the hospital. And hospital at home is opening

new doors for clinicians.

But what about working that night shift, given the large body of evidence of the various deleterious effects it can have on personal health? Some hospitalist groups have collectively decided that older hospitalists should be relieved of pulling night shifts. Others pay shift differentials for working the night shift.

Some hospitalists, like Dr. Chambers, actually prefer working nights, even though she acknowledged the literature showing chronic effects such as gastrointestinal problems, anxiety and depression, and even higher rates of cancer and heart disease, from overturning circadian rhythms. "That is well established in factory workers."

For Dr. Chambers, the night shift means a different pace of work and a focus on patients experiencing medical crises, versus regular rounds visiting every patient on a panel. She might be the only hospitalist on duty at night in a 350-bed hospital, and she might see 10 to 20 patients in a shift. "I'm called when someone is acutely sick, like they're having chest pain or trouble breathing. This breaks up the routine and makes the night interesting and dynamic."

She also viewed it as an area of untapped potential for medical education. She built a novel overnight curriculum for internal medicine residents—who are mandated to do some of their shifts at night. "It's a wonderful opportunity to train future doctors in a different social environment. We have precious time for learning that we don't have on other shifts."

Dr. Chambers typically works seven night shifts in a row, and then, for her week off, tries to reestablish a normal morning routine. What does that do to her physically? "It's tough. The major thing I have noticed is an occasional lack of cognitive clarity."

Continuity in scheduling

Henry J. Michtalik, MD, MPH, MHS, SFHM, assistant professor of medicine at the Johns Hopkins University School of Medicine in Baltimore, heads the Henry Michtalik Lab there for studying job stress and burnout. "I also lead several



Dr. Michtalik



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projects on burnout and wellness specifically for hospitalists. I also lead our morale survey, asking doctors not just about burnout but about workload, leadership, acknowledgment, resiliency, culture, work-life balance, engagement, and other areas.”

How long can a hospitalist work, on average? “That’s difficult to say because every career is unique,” Dr. Michtalik said. One of the challenges for the field is balancing continuity in scheduling, since fewer days in a row, while less strenuous, means more patient handoffs. Hopkins has tried to customize minimum and maximum numbers of consecutive shifts, he said. “Everybody has a different perspective based on how they feel at work and how to balance their personal and additional clinical or administrative responsibilities. Our shifts have fixed hours but retain some individual flexibility.”

Venkat Gundareddy, MBBS, MPH, associate director of the division of hospital medicine at Johns Hopkins Bayview Medical Center, drew a distinction between the physical toll of being a hospitalist, and burnout. The physical toll includes several factors, such as the number of shifts per month, duration, number of patients, how well cohorted the patients are geographically, and the run of shifts in a row.



Dr. Gundareddy

“Seven days in a row takes its physical toll, in various forms,” he said. Some hospital medicine groups are moving away from this model, even while many hospitalists believe it is more conducive to their life outside of the hospital. “Hospital medicine as a field is relatively young, although it has grown rapidly. So how do we age well as hospitalists? How will the long-term physical and mental demands on hospitalists affect the longevity of their careers? What’s the answer to all that? I’d love to see more objective studies about this,” he said.

Dr. Gundareddy believes more resources should be devoted to this aspect of medicine—the longevity of the field—to ensure that hospitalists are able to keep working at the patient’s bedside. “What are we doing as leaders to mitigate the physical effects?” he said.

Hospitals can also start paying more attention to ergonomic issues—supportive chairs, cushions, adequate lighting, etc.—in the workstations that are offered to hospitalists. They should be stocked with coffee, water, and snacks. Experts emphasize the importance of taking breaks regularly, eating healthy meals more or less on schedule, and getting regular exercise. Reducing the number of hours per shift

from 12 to 9 or 10 could also make a difference.

It might also be possible to learn from emergency medicine doctors, who are also on their feet for long periods dealing with high-intensity crises, decision making, and uncertainty. The jobs are similar, said Dr. Williams, who has done both. “Emergency medicine, as it became a specialty, was quick to recognize that doctors couldn’t do it for 48 to 50 hours per week.” So their pay was adjusted to define a full-time job as 32 hours per week.

Designing work for hospitalist health and safety

Marisha Burden, MD, MBA, SFHM, hospitalist and division head of hospital medicine at the University of Colorado School of Medicine in Aurora, is co-founder of GrittyWork, a mobile application and movement aimed at transforming clinical work through evidence-based work design. Her work focuses on understanding optimal work design, which encompasses not only its structure and processes, including workloads, but also important components that are often overlooked. That includes the physical elements of the job as well as the work environment.



Dr. Burden

“The work hospitalists do is both mentally and physically demanding and hard to fit into regular job expectations,” Dr. Burden said, “You never know when your day will end.” Physical activity, such as walking, maneuvering through procedures, and endurance, are important parts of the work. “Additionally, there are no built-in breaks during the workday, making it challenging to prioritize self-care since the goals of the day are putting patients first.”

For Dr. Burden, the fundamental question is how to build optimal work design—around workloads, work environment, and work culture. “How do we build a process and structure to support the workforce so they can do their best work, taking care of their patients in the best way possible and taking care of themselves?” She believes this is critical to ensuring the long-term sustainability of the work of hospitalists.

Her research started with the questions: How do we measure workloads for hospitalists? What is optimal work design? “I believe fundamentally that these questions also impact organizational outcomes, including financial ones. But how many in the field are using evidence-based information to determine their

hospitalists’ workloads or work design?” She studied optimal ways to measure hospitalist workload by interviewing national experts, concluding that productivity-related measures and financial measures may offer an incomplete understanding of optimal workloads.¹

Impact of workload

Of course, issues of aging and career longevity and the physical toll of hospitalist work are not just relevant for the clinician. What about the impact on patients’ outcomes and lives? A 2017 study comparing hospitalized elderly patients treated by older or younger hospitalists found that adjusted 30-day mortality increased with the age of the physician (from under 40 years old to 60 and above).² However, readmission rates did not vary with physician age, and among physicians who saw a high volume of patients, there was no age-associated difference in patient mortality.

An older study from 2003 found that older physicians had decreased clinical knowledge, adhered less often to standards of appropriate treatment, and performed worse on quality measures.³ But those are process measures, not patient clinical outcomes, for which data have been scarce. Nor do they answer whether the generational differences reflect the effects of age or differences in and chronological distance from medical training.

The generation of advances in the care of hospitalized patients—new diagnostic tests, treatments, and identification of possibly ineffective prior approaches (e.g., Things We Do for No Reason)—requires hospitalists to actively invest time in learning what is the best evidence for evaluating and managing hospitalized patients, Dr. Williams said. It is an ongoing process that hospitalists should never ignore. As quoted in an editorial accompanying a 2005 *Annals* article, he said, “We must actively cultivate competence throughout a professional career.”⁴ ■

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

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Working as a Hospitalist Internationally

The differences, challenges, and benefits

By Karen Appold

Hospital medicine is the fastest-growing medical specialty in the U.S., and it's gaining popularity in other countries throughout the world.¹ Although there are many similarities in how hospital medicine is practiced in different countries, profound differences also exist due to a variety of factors.

In the Netherlands, for example, differences are notable early on, beginning with the training process. "U.S. hospitalists are trained in a specific specialty, whereas hospitalists in the Netherlands are trained in different fields and can work in different specialties," said Marjolein de Boom, MD, FHM, a hospitalist in the geriatrics department at Treant, a 200-bed community hospital in Emmen, the Netherlands.

Because citizens of the Netherlands have compulsory health insurance in which cooperation with primary care and public health is necessary, a hospitalist's training also includes a mandatory internship in primary care.

In some hospitalist departments, hospitalists rotate on different wards, e.g., three months in surgery, three months in pulmonology, and then three months in neurology, Dr. de Boom said. Also, hospitalists mostly work on day shifts during the week, both to facilitate the greatest continuity of care, and due to a limited number of hospital physicians.

Hospitalists in Brazil perform many of the same tasks as U.S.-based hospitalists, said Guilherme Brauner Barcellos, MD, SFHM, a hospitalist in the department of quality at Hospital de Clínicas de Porto Alegre in Porto Alegre, Brazil, an 860-bed academic hospital, but some aspects of care are still in the developmental stages. Specifically, like U.S. hospitalists, Brazilian hospitalists have a strong focus on direct patient care and efficiency. Unlike U.S. hospitalists, Brazilian



Dr. deBoom



Dr. Barcellos

hospitalists have little emphasis on quality and patient safety and aren't centered on value-based care and new remuneration models.

Although some heterogeneity exists, confusion in concepts is commonplace. "Many people still mistake the comprehensive hospitalist model with others that only focus on urgent inpatient needs while the main physician is not physically present," Dr. Barcellos said. Sometimes a hospitalist's work is restricted to bureaucratic tasks and procedures.

In Pakistan, the care-delivery model for hospitalists is still very traditional. An internist provides both inpatient and outpatient care. "Unfortunately, the healthcare system doesn't see value in dedicated full-time inpatient consultants (hospitalists) for a variety of reasons, e.g., a lack of knowledge of the U.S. system and a lack of support from larger private healthcare institutions as well as federal and provincial governments," said Muhammad Haroon Khan, MBBS, a diplomate of the American Board of Internal Medicine, a consultant hospitalist, and a physician director informaticist in the chief medical informatics office at Aga Khan University Hospital, a 700-bed academic tertiary care hospital in Karachi, Pakistan.

"Due to a lack of resources, critical patients are commonly managed in general wards or special care units with limited resources," Dr. Khan said.

Overcoming challenges

Proving their value has been a significant challenge for international hospitalists. This is particularly problematic in the Netherlands because the government decides the number of training spots for specialists and their allocation. Currently, no government-funded training spots for hospitalists exist.

"Some hospitals recognize hospitalists' added value, however; currently hospitals are funding training for approximately 15 hospitalists for their own use," Dr. de Boom said. In addition, "more medical specialties are acknowledging that physicians with more general views should lead patient care on hospital wards. Nonetheless, they aren't willing to give up their training spots from government funding."

To address this obstacle, Dr. de Boom recommends conducting and publishing more research, in collaboration with established hospital-medicine departments, that proves hospitalists' value and creates recognition for this specialty to get structural financing for medical training.

Along these lines, Dr. Khan said a significant hurdle is acceptance by healthcare authorities—in both the private and government sectors—to understand the value hospitalists bring to the health care industry. "I think hospi-

talists can help to lower inpatient and critical care costs and provide safe and efficient care," he said. "The sooner our healthcare policymakers realize that, the sooner we will have well-integrated healthcare systems."

Proving their value is also a challenge for Brazilian hospitalists. "Many organizations consider hospitalists to be 'super residents,'" Dr. Barcellos said. "If hospitalists could learn how to better demonstrate their accomplishments and value, then hospitals would place a greater value on their work as generalists."

Anand Kartha, MD, MS, SFHM, head of hospital medicine at Hamad Medical Corporation in Doha, Qatar, an academic health system with 2,600 beds across the corporation, reports an initial lack of knowledge about the hospital medicine model of care, which was also a challenge in the U.S.

at the beginning of the hospital medicine movement in the 1990s.² "Delivering visible improvements by hospitalists is a powerful way to overcome this challenge," he said. "Partnering with other hospitalists globally and helping your institution succeed are other great ways to grow this model internationally."

Another challenge for Brazilian hospitalists is that many have multiple part-time contracts rather than one full-time contract. "Physicians feel more secure having more than one job," Dr. Barcellos said. "They fear losing a position and not having any work. Having stronger physician and hospital relationships, with clear goals and mutual trust, could lead to more hospitalists having one full-time position."

Biggest benefits

Despite some challenges, hospitalists said their work has its rewards, too. Hospitalists in the Netherlands provide general care to clinically admitted patients. "Hospitalists have opportunities to expand their knowledge as they work in different kinds of medical specialties and hospital settings," Dr. de Boom said.

Brazilian internists who formerly worked at more than one medical facility and now work as full-time hospitalists at one institution report great satisfaction with a more organized, less chaotic life. "They have more time to take care of their own physical and mental health," Dr. Barcellos said. "And, in parallel, they deliver improvements, such as reducing the length of hospital stays, which is well-documented."³

As a hospitalist, Dr. Kartha has found deep joy and personal satisfaction by making such a positive impact on many aspects of healthcare quality, such as making inpatient care safer and more efficient as well as improving access for patients.

Because Qatar has individuals from more than 100 nations living there, Dr. Kartha sees the country as offering a unique opportunity to build relationships with both patients and providers from diverse backgrounds and learn from their cultures and experiences. Many opportunities to develop new global partnerships with world leaders in academics and operations exist.



Dr. Kartha



Dr. Khan



Despite hospital medicine being a newer field in Pakistan, Dr. Khan believes it can revolutionize how inpatient care is provided in low- and middle-income countries where most of the inpatient care is quite fragmented and plagued with a lack of infrastructure, resources, and good healthcare systems, as well as high costs, he said. Hospitalists can fulfill most of these needs and help improve population health both in public and private settings. ■

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

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Hospitalists Meet Across the Pond: Key Insights from ECIM 2024

As an attendee at The European Congress of Internal Medicine (ECIM) 2024, SHM's president, Flora Kisuule, MD, MPH, SFHM, director of the division of hospital medicine at Johns Hopkins Bayview Medical Center in Baltimore, a 550-bed academic hospital, reports that there's a great interest in the field of hospital medicine both in Europe and beyond.



Dr. Kisuule

"Many delegates visited SHM's booth," said Dr. Kisuule. "They asked many questions about what a 'hospitalist' means and how we practice."

ECIM 2024, held March 7 to 9 in Istanbul, Turkey, is the annual meeting of the European Federation of Internal Medicine and brings together delegates from various national internal medicine organizations in Europe. Dr. Kisuule's attendance, along with two other SHM delegates, marked the third official attendance by SHM's representatives.

Dr. Kisuule said that ECIM's leadership has a keen interest in collaborating with SHM. Some ways to work together include developing educational materials and having joint sessions at their respective conferences. "These collaborations would lend legitimacy to the budding concept of hospital medicine

in Europe," she said.

Some insights Dr. Kisuule gleaned from the meeting are that general internists, particularly in southern Europe, e.g., Portugal and Spain, practice in similar ways as U.S.-based hospitalists. "They see inpatients and manage them directly or co-manage surgical patients for the duration of their hospital stay," she said.

In comparison, in the United Kingdom, acute care internists manage patients for 48 to 72 hours after emergency department personnel determine that a patient can't be discharged. If a patient requires hospitalization beyond 72 hours, then they are admitted to the most appropriate specialty service.

Dr. Kisuule also said that European countries share many of the same healthcare challenges that hospitalists deal with routinely in the U.S., e.g., length of stay, throughput, behavioral health, and burnout.

"I was surprised to hear that we faced some of the same challenges, but it was also exciting because this opens up opportunities for collaboration," Dr. Kisuule said. For example, Spain and some other countries have had hospital at home for years. This practice is widespread and helps keep patients out of the hospital. Although this is a growing practice in the U.S., our country is years behind other countries."

"It was gratifying to discuss and learn from each other," Dr. Kisuule said. ■



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2024 National Hospitalist Day HM Voices Contest Winners

Celebrating the human in hospitalists

The second annual National Hospitalist Day HM Voices contest asked participants to capture the essence of humans in hospitalists—to show the person behind the profession; the humanity inherent in us all.

Congratulations to this year's winners—Andrea Lauffer, MD, FAAP, Sowmya Kanikkannan, MD, MBA, FACP, SFHM, and Joseph S. Thomas, MD. You can view all contest submissions online at The-Hospitalist.org under the HM Voices tab.



▲ Four Generations of Love

By Sowmya Kanikkannan, MD, MBA, FACP, SFHM

Four Generations of Love is representative of the everlasting inter-generational love and family bond. ■



Dr. Kankikkannan

Dr. Kanikkannan is a hospitalist at Northern Westchester Hospital in Mt. Kisco, N.Y. She serves on SHM's Practice Management Committee. You can view more of her photographic work at miakaniphoto.com.

Celebrating the Human in Hospitalist (and Patient)

By Joseph S. Thomas, MD

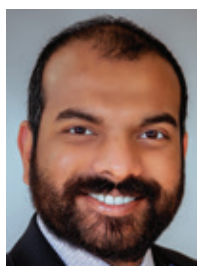
I have a small stack of cards. They sit tucked away in a little envelope in a drawer of the desk in my home office. There aren't many, and I do not look at them often, but it is an important stack.

It is my stack of thank-you cards from patients.

There is the simple "Thank you for taking care of me." There is the paragraph where the patient described their rehab after leaving the hospital. There is the coffee shop gift card that I was too afraid to use because it was a gift from a patient, but I do not mind keeping it because the patient and I both liked coffee. These cards are remnants of previous connections, reminding me that the patients are so much more than their diagnoses—that each is a whole human, and they bonded with me as a whole human—the human in this hospitalist.

There is also an audio CD. The patient, who could not speak for himself, required frequent hospitalizations and had seen several of my colleagues in the past. A relationship had to be created not only with him, but his parents as well. It turned out that I had an easier time meeting that challenge because they had done some research. "We looked you up on the website and saw you're in a band! We are, too!" On our first meeting, what helped break the ice was their connection not to my medical care, but to the human in me outside the hospital. The discussion of music, brief though it was, made them feel more comfortable telling me about their adult child and what his baseline was. Sometimes his cognitive impairment and chronic illness would obscure his humanity, which made it important to remember who both of us are outside the hospital. The music on the CD is enjoyable, too.

In medicine, it is so easy to forget who we are outside the job. Many of us were told medicine should be a calling and during the incredibly grueling training, we are expected to devote our entire being to earning that degree and certification. I enjoyed parts of my residency training, certainly, but I also lost parts of myself, as so many of my colleagues did (some of whom downplay that loss and trauma in order to judge today's trainees, but that is for a different essay). I was a voracious reader growing up, but I can count on one hand the number of non-textbooks I even touched during my training. As an attending, inspired by friends on MedTwitter and grateful for audiobooks, I have re-discovered that love for reading. I then get to turn that around to humanize my patients as well, as evidenced by a recent tangential conversation with a patient over our mutual fascination with an octopus in Shelby Van Pelt's novel, "Remarkably Bright Creatures." Sure, we talked about the



Dr. Thomas

Dr. Thomas is a hospitalist at Buffalo Medical Group and a clinical instructor for the Buffalo Catholic Health System internal medicine residency and the D'Youville Physician Assistant Program, all in Buffalo, N.Y. He also writes the blog Managing Health Expectations, serves as a Digital Media Fellow for the Journal of Hospital Medicine, and uses social media for education and advocacy.

fluid I was medicating out of her lungs, but where she lit up was the fluid in that octopus's tank.

That loss of self in training is not unique to me in any way. In attending-hood, we hope to gain some of ourselves back, but sometimes circumstances make that difficult. For the past few years, my faith in humanity has been heavily stripped as I watched fellow physicians embrace anti-science grift and the fame it can bring and watched many patients suffer because people would not make small adjustments for their fellow humans. There were days when I could feel myself working just to get through my shift and feeling impatient in my encounters. It took me some time to realize how bad I was feeling, but when I did ... I looked at the stack of cards, including the last one.

The last card was written by a patient's spouse. I met her on a weekend. The patient was sick, and not likely to get better, but he was as stable as possible and I had been tiredly hoping to get out of the hospital early when the spouse and other family we had been waiting for arrived and wanted to have the big conversation about next steps. I reluctantly went to the room, knowing I would be staying later than planned. Yet soon I was seated, surrounded by and eagerly listening to his loved ones. They told me about his goals, the biggest of which was that he wanted to be at home with his family at the end. I begged our case management team, who gamely worked to set up services and transportation in record time despite the lateness of the day.

The card I received a week or so later tells me that he passed shortly after leaving the hospital, but he did so at home, exactly where he wanted to be. His family was grateful for what I did, despite the timing (though I acknowledge the case-management team did the heavy lifting). They had communicated with the human in me, which reminded me to direct my care to the human in him.

That is how we hospitalist. It is the human within us that makes us better physicians who can empower and embrace the humanity of our patients. This year and going forward, that is what we celebrate. ■

Stones

Andrea Lauffer, MD, FAAP

A walk in this place I've known for so long
Upon its dark soil, I sing a solemn song

I was a child in which oblivion one could find
Now knowledge of their fates are seared in my mind

A requiem for those I knew both close and dear
Those whom I knew their last moments were near

Old stones I've recognized since I was five
And new ones of those who are no longer alive

Their souls have departed from this Earth
Each life precious, full of purpose and worth

That stone over there, a young girl in my class
After graduation from school, she tragically passed

Little did I know, genetic destiny could be unkind
Acquisition of this knowledge, I later did find

Her chances were slim, only one in four
How unfair; she deserved a life of time and more

I know now what I didn't know then
A fight against her illness, one could not win

Over there is the stone of the lady in red
With beautiful white hair layered on her head

Meeting her first on a cold winter's day
When Christmas was not too far away

Into the patient room I walked to see
Her last holiday I knew immediately it would be

Her demeanor so sweet, gentle, and mellow
Her skin illuminating with the dreaded color yellow

Her cancerous state was not to be ceased
After the summer solstice, she entered final peace

This stone here, I remember the somber day
When an abrupt "Code Blue" left many hearts frayed

An expectant mother succumbed to her ill-timed fate
Grief and sorrow broke through everyone's gate

Our inner gates are built with impenetrable stone
So tragedies around don't seep into our bones

For to fully digest a patient's true pain
Our work would have no sun and only the rain

This place palpable with emotion that is not known
But a revelation within I feel is being sown

These stones around are why the stones are within
Physicians struggle when ultimately death wins

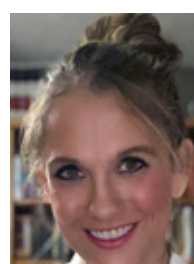
For a thriving soul is what truly nourishes
Our drive to ensure the human spirit flourishes

Our defeat by death will always be met
But with loss of life, our humanity it begets

The Hippocratic oath is our call to duty
To show the living and departing true human beauty

Never construct the stones within to mask
Authentic compassion to be laced in our tasks

For we are the intermediate to the Great Physician
Let not melancholy imprison us from our earthly position ■



Dr. Lauffer

Dr. Lauffer is an internal medicine-pediatric hospitalist in West Virginia. She serves as the president of SHM's West Virginia chapter and as the med-peds subcommittee co-chair for the American Academy of Pediatrics' section of hospital medicine.

Updates in Pediatric Sepsis

By **Andrea Hadley, MD, FAAP, Eric Kort, MD, and Kate Wimberly, MD**

An 8-year-old girl presents with five days of worsening cough. She has a temperature of 38.6 °C, a respiratory rate of 38, a blood pressure of 85/45, and a heart rate of 120. Pulse oximetry reveals an oxygen saturation of 85% in room air which improves to 95% after initiation of supplemental oxygen of 1L/min via nasal cannula. She is alert, interactive, and well-perfused. She is tachypneic and has right-sided crackles on lung auscultation. Her white blood cell count is 16,000/μL. Chest X-ray demonstrates a right-sided infiltrate, with a small effusion that blunts the costophrenic angle. A 20 ml/kg fluid bolus is given, and IV ampicillin is started. Antipyretics are given and the patient is admitted with concern for sepsis due to community-acquired pneumonia. One hour later, the patient's temperature has normalized, and her heart rate has improved to 90. Her respiratory rate remains elevated at 36. She remains on supplemental oxygen.

Does this child have sepsis?

The definition of sepsis in adult and pediatric populations has changed in recent years. Prior to January 2024, the most recent pediatric-specific criteria for the diagnosis of sepsis were published in 2005 by the International Pediatric Sepsis Consensus Conference, defining sepsis as suspected or confirmed infection in the presence of systemic inflammatory response syndrome (SIRS). The group also developed definitions for severe sepsis and septic shock (Table 1).

The child in this case meets SIRS criteria for sepsis with fever, leukocytosis, tachycardia, and tachypnea for age. The SIRS-based definition of sepsis can detect children with mild illness severity, which can give clinicians advance warning but does not reliably identify children who are at risk of poor outcomes. The presence of a fever can elevate heart rate and respiratory rate—meaning that many febrile children with viral infections may meet SIRS criteria, but may not truly be at risk of adverse outcomes associated with sepsis. The child in this case had significant improvement in heart rate after fluid resuscitation and antipyretics.

In January 2024, the Phoenix Sepsis Criteria were published in the Journal of the American Medical Association, providing a new framework for the identifi-

cation of sepsis and septic shock in children.¹ The new criteria were developed through a multi-step process by a task force convened by the Society of Critical Care Medicine. First, the task force conducted an international study to determine how clinicians in a variety of pediatric fields diagnose and define sepsis. The task force determined a preference among pediatric providers that the term “sepsis” be limited to children with infection-associated organ dysfunction, rather than capturing all children who meet criteria for infection-associated SIRS. Following the international survey, the task force performed a systematic review and meta-analysis to determine factors that lead to adverse outcomes in children with infection. Then, via a cohort study and modified Delphi process, the task force developed organ-based criteria to identify pediatric sepsis. The task force found that a four-system model showed similar predictive value to an eight-system model. The Phoenix Sepsis Score was derived from the four-system model.



Dr. Hadley



Dr. Kort



Dr. Wimberly

Dr. Hadley is an assistant professor of internal medicine and pediatrics at Michigan State University College of Human Medicine and chief of pediatric hospital medicine at Helen DeVos Children's Hospital of Corewell Health, both in Grand Rapids, Mich. Dr. Kort is a pediatric hospitalist at Helen DeVos Children's Hospital of Corewell Health in Grand Rapids, Mich. Dr. Wimberly is a hospitalist and assistant professor of internal medicine and pediatrics at the University of Kentucky in Lexington, Ky.

Phoenix Sepsis Score

The Phoenix sepsis criteria define sepsis as “potentially life-threatening dysfunction of the respiratory, cardiovascular, coagulation, and/or neurological systems.” The Phoenix Sepsis Score identifies children with suspected infection who have sepsis and septic shock (Table 2).

- Sepsis = suspected infec-

tion and a Phoenix Sepsis Score of >2 points

- Septic shock = sepsis and >1 cardiovascular point(s)
- The Phoenix Sepsis Criteria apply to children under 18 years of age but do not apply to newborns during birth hospitalization or infants whose post-conceptual age is under 37 weeks.

Table 1. Comparison of International Pediatric Sepsis Consensus Conference criteria and Phoenix pediatric sepsis criteria²

	INTERNATIONAL PEDIATRIC SEPSIS CONSENSUS CONFERENCE CRITERIA	PHOENIX PEDIATRIC SEPSIS CRITERIA
SEPSIS		
Definition	≥2 SIRS + suspected/confirmed infection (One of the SIRS criteria must be temperature or WBC count)	Life-threatening organ dysfunction in the setting of suspected or confirmed infection, defined as ≥2 points on the Phoenix Sepsis Score
Criteria	Pediatric SIRS Criteria <ul style="list-style-type: none"> • Core temperature • WBC count • Heart rate • Respiratory rate 	Phoenix Sepsis Score (see Table 2): organ dysfunction may include: <ul style="list-style-type: none"> • Respiratory (PaO₂:FIO₂ or SpO₂:FIO₂) • Cardiovascular (vasoactive medications, lactate, age-specific MAP) • Coagulation (platelets, INR, D-dimer, fibrinogen) • Neurologic (Glasgow Coma Scale)
SEVERE SEPSIS		
Definition	Sepsis with at least one of the following: cardiovascular organ dysfunction, acute respiratory distress syndrome, or ≥2 other organ dysfunctions.	Term no longer used now that sepsis definition requires organ dysfunction
Criteria	Other organ dysfunctions include: <ul style="list-style-type: none"> • Respiratory (PaO₂:FIO₂ ratio, PaCO₂, FIO₂, mechanical ventilation) • Neurological (Glasgow Coma Scale) • Hematologic (platelet count, INR) • Kidney (serum creatinine) • Hepatic (bilirubin, alanine aminotransferase) 	
SEPTIC SHOCK		
Definition	Sepsis and cardiovascular organ dysfunction defined as (despite 40 mL/kg isotonic fluids within 1 hour) having either hypotension (<5th percentile for age or systolic blood pressure <2 SD for age) or need for vasoactive or at least two of the following: unexplained metabolic acidosis; arterial lactate >2 times the upper limit of normal; oliguria; prolonged capillary refill; or core to peripheral temperature gap.	Sepsis with ≥1 point in the cardiovascular system (severe hypotension for age; venous or arterial blood lactate value of more than 5 mmol/L (>45.05 mg/dL) or need for vasoactive medication)

Table 2. Phoenix Sepsis Criteria¹

THE PHOENIX SEPSIS SCORE				
	0 POINTS	1 POINT	2 POINTS	3 POINTS
Respiratory 0-3 points	-PaO ₂ :FIO ₂ ≥400 or -SpO ₂ :FIO ₂ ≥292	-PaO ₂ :FIO ₂ <400 on any respiratory support or -SpO ₂ :FIO ₂ <292 on any respiratory support	-PaO ₂ :FIO ₂ 100-200 on invasive mechanical ventilation or -SpO ₂ :FIO ₂ 148-220 on invasive mechanical ventilation	-PaO ₂ :FIO ₂ <100 on invasive mechanical ventilation or -SpO ₂ :FIO ₂ <148 on invasive mechanical ventilation
	0 POINTS	1 POINT EACH (UP TO 3)		2 POINTS EACH (UP TO 6)
Cardiovascular 0-6 points	-No vasoactive medications -Lactate <5 mmol/L -Age-based mean arterial pressure (MAP) as below	-1 vasoactive medication -Lactate 5-10.9 mmol/L -Age-based mean arterial pressure (MAP) as below		- ≥2 vasoactive medications -Lactate ≥11 mmol/L -Age-based mean arterial pressure (MAP) as below
Age	Age-based mean arterial pressure (MAP) as below			
<1 month	> 30	17-30		<17
1 to 11 months	> 38	25-38		<25
1 to <2 years	> 43	31-43		<31
2 to <5 years	> 44	32-44		<32
5 to <12 years	> 48	36-48		<36
12 to 17 years	> 51	38-51		<38
	0 POINTS	1 POINT EACH (UP TO 2 POINTS)		
Coagulation 0-2 points	-Platelets >100x10 ³ /uL -INR ≤1.3 -D-dimer ≤2 mg/L FEU -Fibrinogen ≥100 mg/dL	-Platelets <100 x 10 ³ /uL -INR >1.3 -D-dimer >2mg/L FEU -Fibrinogen <100 mg/dL		
	0 POINTS	1 POINT	2 POINTS	
Neurological 0-2 points	Glasgow Coma Score >10, pupils reactive	Glasgow Coma Score ≤10		Fixed pupils bilaterally

Compared to the SIRS framework, the Phoenix Sepsis Criteria more reliably identify children with the highest risk of mortality. The Society of Critical Care Medicine task force found that:

- Children meeting Phoenix Criteria for sepsis had eight times the risk of in-hospital mortality compared to all children with infection.^{1,2}
- Children meeting the criteria for severe sepsis had an in-hospital mortality rate of over 10% in high-resource settings and 33% in lower-resource settings. This corresponded to a 50% higher risk of mortality in children with severe sepsis than children with sepsis in higher-resource settings and a 20% higher risk in lower-resource settings.¹
- Children with sepsis who score points on the Phoenix Sepsis Score for organ dysfunction (for example, a child with pneumonia scoring points for respiratory dysfunction) have a lower mortality rate than children with sepsis and remote organ dysfunction.

Back to the case

The next morning, a sepsis alert triggers for the patient. On your assessment, her respiratory rate is now 48, she is on 5 L/min of supplemental oxygen by nasal cannula, and she appears more tired and is notably less alert than the day before. Her capillary refill is very brisk. Her blood pressure is 72/40 (MAP of 51),

her heart rate is 140, and her oxygen saturation is 93%. Repeat chest X-ray shows a worsening effusion, now taking up nearly half of the right hemithorax. You administer a 20 mL/kg normal saline bolus. You broaden her antibiotics to ceftriaxone and vancomycin. Chest ultrasound confirms a moderate-sized simple right-sided effusion. Labs now show a white blood cell count of 21,000/ μ L, a lactate of 2.1 mmol/L, and normal coagulation studies. A blood culture is obtained. You consult interventional radiology who places a chest tube, draining 300 mL of exudative fluid. With source control, she continues to improve. The chest tube is removed several days later, and she is transitioned to oral antibiotics in anticipation of discharge home.

While the Phoenix Sepsis Criteria predicts in-hospital mortality more reliably than prior sepsis criteria, including SIRS, fewer patients meet the criteria for sepsis and septic shock in the new Phoenix framework. This could lead to decreased early recognition of sepsis, especially outside of the ICU setting.

In this case, the child's condition warrants urgent intervention, but she does not meet the criteria for sepsis in the Phoenix framework. This patient gets one point for having a SpO₂:FIO₂ ratio less than 292 but greater than 220, although calculating this statistic bedside for a patient on supplemental oxygen by nasal cannula comes with challenges. Since her MAP is greater than 48, her coagulation studies

are normal, and her Glasgow coma scale is greater than 10, she gets no other points. With a total score of 1, she would not be classified as having sepsis on the Phoenix scale. However, most clinicians would evaluate and treat for sepsis as described in the case. Given this clinical picture, it would be inadvisable to wait to treat for sepsis until the patient had further deteriorated to meet the Phoenix criteria.

Key Takeaways

Recognizing and treating sepsis saves lives. Diagnostic criteria for sepsis have been refined over the years as more data is available at our fingertips, and there are advantages and disadvantages to each iteration. The newly defined Phoenix Pediatric Sepsis Criteria will be one valuable tool to identify the subset of children with the highest risk of mortality. The Phoenix criteria may be useful both clinically and for research. With the new criteria, the term "severe sepsis" is no longer used since by definition sepsis is severe and life-threatening. It is important to consider that prior SIRS-based criteria will still play a vital role in screening or recognizing patients with early signs of serious infection with impending end-organ dysfunction who require timely treatment, as relying on a higher threshold with Phoenix criteria may result in delays in identifying or treating patients. It is also worth noting that clinical documentation, billing, and coding

changes are likely to lag, and utilizing SIRS with or without acute organ dysfunction to define sepsis and severe sepsis remains important for capturing illness severity and reimbursement.

Both SIRS-based and Phoenix criteria provide useful frameworks for thinking about whether a patient has sepsis. It is important to remember that the primary outcome for the development of the Phoenix model was mortality—an outcome we hope to never encounter on the general pediatric floors. We now find ourselves in a bit of a Goldilocks scenario—the SIRS criteria are too hot, and the Phoenix criteria are too cold (at least outside the ICU setting). In our opinion, the SIRS criteria remain a useful framework for screening and early warning, particularly given the critical importance of rapid intervention and treatment. Regardless of the criteria used, the clinical phenomenon of sepsis, and shock more generally, highlights the fact that computer algorithms do not replace the clinician at the bedside. Clinical judgment and careful, repeated assessment remain a mainstay of safe, effective, and compassionate care of the acutely ill child. ■

References

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SHM's Hospital Medicine Diversity, Equity, and Inclusion Scholarship Winner

Learn more about a member of the next generation of hospitalists

In support of its commitment to enhancing diversity in the hospitalist workforce and eliminating health disparities for hospitalized patients across the country, SHM presented Ricardo Crespo Regalado with a \$25,000 Hospital Medicine Diversity, Equity, and Inclusion Scholarship in April at Converge. The Hospitalist chatted with Mr. Regalado to learn more about him and his commitment to diversity, equity, and inclusion (DEI).

Ricardo Crespo Regalado

Ricardo Crespo Regalado is a medical student at the University of North Carolina at Chapel Hill School of Medicine in Chapel Hill, N.C. Born in Mexico, he was raised in the rural town of Pink Hill, N.C. He completed his undergrad at UNC-Chapel Hill, where he majored in exercise and sport science. As an undergraduate student, he began volunteering as a Spanish interpreter at the Student Health Action Coalition, the nation's oldest student-run free clinic. He was drawn to the organization's mission, in part, because of his family's challenges accessing healthcare when he was a child.



Mr. Regalado

Since starting as an interpreter, Mr. Regalado has climbed the ranks within the Student Health Action Coalition, progressing to interpreting coordinator, interpreting director, lead medical team coordinator, and now, co-CEO. Through the organization, he has developed a profound passion for serving underserved populations, quality improvement, and advancing and researching health equity.

Most recently, he has devoted his efforts to addressing language inequity in the hospital admissions process, intending to identify patients who need language access services at UNC and use innovative approaches to expand this work to all of UNC Health. He aspires to incorporate medical education and research into his future career. After graduating, he hopes to use his training to provide care to underserved populations.

Mr. Regalado notes that he could not have gotten to where he is today without the support of his wonderful family, girlfriend, and mentors, especially one couple, the Raffs. Outside of medical school, he loves to practice combat sports and spend time with his rescue dog.

Q: What's led to your passion for hospital medicine over other subspecialties?

I have realized that health disparities that start in the outpatient setting (e.g., lack of access to preventive healthcare) often get amplified inside



L to R: Dr. Kris Rehm, Ricardo Crespo Regalado, Langston Faulk of Vituity, and Dr. Eric Howell

the hospital—a place you'd think should be a safe haven for all. There is so much room for improvement within our healthcare system, in particular within hospital walls, and I want to be a leader in health equity work within this system. Additionally, I have had incredible hospital medicine mentors (shoutout to Dr. Evan Raff!), and I love working with the type of patients we see in the hospital.

Q: Why is DEI so important to you, especially as it relates to hospital medicine?

DEI is important to me because I have experienced the struggle that underserved and underrepresented people face regularly. Now that I am on the other end of the socioeconomic spectrum, I want to do my part to help my community. I want to work within a health care system where everyone receives equal, fair care regardless of their demographics, socioeconomic status, or language ability, and a place where everyone respects the importance of DEI work. So many shared and different perspectives and new ways of treating patients arise when culturally competent providers come together to refine how we deliver care.

Q: Medical school is a full-time job on its own. How do you juggle all the outside projects?

Honestly, I just love staying constantly busy. I try to take on as many new projects as I can that need an extra set of hands, will improve care for others, and are of interest to me. When it becomes too much, I de-stress. Having an intense stress reliever is how I juggle all my commitments/projects and I do this through mixed martial arts.

Q: What advice would you give people who are just starting medical school?

It takes a village. As cliché as it may sound, you need a team of people to support, guide, and mentor you, and to connect you with opportunities. This is true whether you know what you want to pursue going into medical school (e.g., your parents are orthopedic surgeons) or not (no one in your family has ever pursued medicine). That said, the best thing you can do for yourself is start building this team early and don't be shy. Send those cold emails to multiple researchers, talk to advisors, network with administrators, etc. Finally, find one thing you like—outside of medicine—and be able to talk about it with anybody.

Ricardo Crespo Regalado's Hospital Medicine Diversity, Equity, and Inclusion Scholarship is made possible by its Keystone Sponsor, Vituity.



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CMS Update to the Two-midnight Rule

What it means for the working hospitalist

By Rob Craven, MD, FACP,
CHCQM-PHYADV, SFHM

Many are familiar with the Centers for Medicare and Medicaid Services' (CMS) two-midnight rule, which was created in 2013 and distinguished between observation-appropriate and inpatient-appropriate hospitalizations. However, some hospitalists may not be aware of the recent changes that went into effect on January 1, 2024, thanks to the recently published 2024 Medicare Advantage and Part D final rule (CMS-4201-F).

Prior to this rule, Medicare Advantage plans often deviated from the two-midnight rule based on contractual agreements with individual hospitals or health-care systems, internal policies, or proprietary guidelines. In the plans' views, these contractual agreements and other stipulations superseded most, if not all, compliance requirements with CMS Conditions of Participation, which followed the two-midnight rule. This led to very gray definitions of the observation window by Medicare Advantage plans and increased inpatient claim denials and frustration for hospital utilization management programs who felt Medicare Advantage plans were cherry-picking how and when they applied Medicare regulations. This led CMS to publish the final rule, which states Medicare Advantage plans must adhere to the two-midnight rule as described in the CMS Conditions of Participation.

While there is no penalty associated with this specific rule, it is definitely a step in the right direction.

"The final rule is a major step in

clarifying Medicare Advantage payor responsibility when patients are admitted to hospitals. However, there remains a lack of oversight and enforcement that we hope CMS will address in the near future," said Rick Hilger, MD, medical director at HealthPartners UM, adjunct professor of medicine at the University of Minnesota Medical School in Minneapolis, and current chair of SHM's Public Policy Committee, which worked with SHM to craft its comments on the proposed rule.

In addition, Medicare Advantage plans must comply with the same guidelines CMS sets forth for long-term acute care (LTAC) and rehab placement and not create their own criteria decreasing avoidable days in the hospital setting.

Aziz Ansari, DO, FAAHPM, FACP, SFHM, professor of medicine and associate chief medical officer of clinical optimization and revenue integrity at Loyola University Medical Center in Maywood, Ill., and the chair of SHM's Physician Advisor SIG said, "With the implementation of this rule, the hope is that Medicare Advantage plans will stay true to the two-midnight rule and next level of care placement as directed by CMS which will ultimately decrease the financial burden on the patient, move our patients to get the next level of care they need sooner and allow for more fair reimbursement to hospitals so we can continue to serve our populations."

Medicare Advantage plans can still deny inpatient status due to lack of medical necessity. This part has not changed. So, it remains imperative that hospitalists provide good daily documentation

demonstrating the severity of illness and intensity of services provided. However, there should no longer be any gray area around what Medicare Advantage plans define as their observation period. The rule also limits the use of any screening criteria, such as InterQual or MCG, specifically regarding the determination of status. Overall, the status determination process should be much simpler thanks to the 2024 Medicare Advantage and Part D Final Rule (CMS-4201-F). It's important to note that CMS will continue to monitor inpatient coverage criteria, in addition to all other clinical matters, to evaluate areas where there may need to be more well-established criteria implemented to best support beneficiary access to the timely care they need.

Dr. Christopher Boyle, MD, a clinical assistant professor and hospitalist at Endeavor Health Medical Group in Evanston, Ill., and the vice chair of SHM's Physician Advisor SIG, shared his thoughts, "This is a big help and a needed step in the right direction from CMS. Medicare Advantage is growing rapidly, and now is the way that more than 50% of Medicare beneficiaries receive their coverage. The rule provides welcome clarity for physician advisors on how we status patients as inpatient or observation as well as much more, including how and when Medicare Advantage plans care use prior authorizations. Really it makes clear that for hospitalized patients Medicare Advantage plans must provide, at minimum, the same benefits, with the same rules, that traditional Medicare beneficiaries would receive. This clarification from CMS helps take out some of



Dr. Craven

Dr. Craven is vice president of case management, physician advisor, and hospitalist at McLeod Health in Florence, S.C.

the uncertainty from statussing patients and helps us simplify our own internal processes so we can focus on making sure all our Medicare patients are in the right status and spend less time on individual payor coverage criteria or policies."

Additional benefits of the rule

Limitations on prior authorizations: Prior authorizations can only be used to confirm the presence of diagnoses and to make sure other criteria are met based on traditional Medicare criteria.

Skilled nursing facility/rehab and LTAC placement: Medicare Advantage plans now also must follow 42 CFR part 409 regarding skilled nursing facility placement and 42 CFR 412.622(a)(3) regarding inpatient rehabilitation placement. ■



Navigating the Promotion Process

Teamwork between junior and senior faculty is key

By Thomas R. Collins

When she joined the faculty of the University of Texas Southwestern in Dallas as a junior member in 2011, Christiana Renner, MD received mentorship in areas such as clinical care and leadership.

But on the academic side, little was available. There was, she felt, no one available to help guide her through the process of publishing scholarly articles.

“For my first four, five, six years as faculty at UT Southwestern I did not have anyone that I would identify as someone who would mentor me in the academic side,” she said. “So I had zero output for my first six years as far as publications. I did lots of curriculum development, I did national talks, but I didn’t have any publications.”

With publications a central—although hardly exclusive—element in getting promoted through the ranks in many tracks at academic medical centers, that poses a barrier. Academic hospital medicine faculty who have been involved in and done research on promotions in their field say that an early understanding of promotion criteria, quality mentorship, identifying a passion, and pursuing it energetically are all vital ingredients to successfully navigating the promotion process.



Dr. Renner

Since her first few years, Dr. Renner has connected with a new senior member of the faculty to work on getting research published and is now an associate professor. But it was a struggle—and for many hospitalists, it continues to be, it seems.

A study in 2021 on which Dr. Renner worked found that, among the 25 top internal medicine programs, 30% of the academic hospital-medicine faculty were at the instructor or lecturer rank, 58% were assistant professors, and just 9% were at the associate-professor and 3% at the full-professor rank. In academic cardiology, by comparison, 28% were full professors, and 23% were associate professors.¹

For junior faculty, the publication output—which the researchers called the “principal currency” for being promoted, often more salient than factors such as committee involvement and quality improvement projects—was almost non-existent. The median number of publications for both instructors and assistant professors was 0.0. For associate professors, the median was nine, and for full professors, it was 38.

The H-index (a metric on the impact of published research), the number of years post-residency, completion of chief residency, and graduating from a top-25 medical school were all factors associated with promotion, the researchers found.

Researchers have also found that the amount of published works varies considerably even among full professors in hospital medicine. The top quintile of the 128 of these professors

identified in the study had a median of 176 publications and an H-index of 37, while those in the bottom quintile had a median of 0 publications. None of the 49 who were clinical professors was in the top quintile, researchers found.²

Dr. Renner said the emphasis on publications for promotions has increased in recent years at her center, and promotion from assistant to associate professor now typically requires three to four publications, with one as the first author. From associate to full professor may require around 10 publications.

“That’s actually gotten more stringent over the years,” she said. “It used to be that you could just do curriculum development, you could be highly involved in committees and give a couple of talks at national conferences, and you were good. But now they kind of want to see something tangible that shows in a search of PubMed.” The shift to a more quantifiable metric helps remove some of the subjectivity from the process, she said.

At other centers, there doesn’t always seem to be quite as much emphasis on publication. In her research, she found, for instance, that full professors in hospital medicine at the University of California, San Francisco—where the concept of hospital medicine was born—had between 0 and 12 publications.

With a bottom-heavy academic presence in hospital medicine, mentors on scholarly publications can be hard to come by, she said.

“There are not a lot of people who have the ability to mentor people so that they get these articles published,” she said.

Ann-Marie Tantoco, MD, assistant professor at the Northwestern University Feinberg School of Medicine in Chicago, where she has helped develop a resource for acquiring external letters of recommendation for promotion, said the mentoring process at her center is quite good. Still, academic publishing is one of the weaker areas.



Dr. Tantoco

“In Northwestern’s division of hospital medicine, I think we are good at introducing early faculty to various career interests and more senior peers, but we don’t have a structured program to help develop publishing and writing skills,” she said.

At Northwestern, assistant professors applying for promotion to associate professor typically need several peer-reviewed publications, with “a few” being first author, she said, along with regional recognition, showing excellence in a certain field, and other requirements. The promotion process is “very stressful” and is not always straightforward, she said.

“They have requirements of what they would want for a promotion but sometimes it can be very hard to quantify,” she said.

Ebrahim Barkoudah, MD, MPH, MBA, regional chief medical and quality officer and system chief of hospital medicine at Baystate Health in Springfield, Mass. said that at his center, there are slides on each pathway for promotions available at annual reviews so that potential candidates know the milestones and guidelines for each rank. The number of publications, abstracts presented, national talks, and mentees you’ve taken under your wing all factor into a composite score that is considered when you’re up for a promotion at his center, he said.



Dr. Barkoudah

Structured mentoring, with regularly scheduled meetings that include agendas and tasks in between those meetings, is an essential part of the process of being promoted, he said. It should be a “set time where you turn off your computer and have a one-to-one,” he said.

“The goal here is to make sure we all understand the structure,” Dr. Barkoudah said. “It’s not a 30-minute just to check a box off. We need to make it meaningful. We need to have psychological safety for the mentee to react and be part of it and be able to say, ‘This is not where I want to go. I have another interest; I need your help with that.’”

At any given time, he mentors 10 to 15 people, he said.

While mentors are often assigned at a center, junior faculty should seek out mentors they think are suited to their interests, and Dr. Barkoudah suggests they consider mentors beyond hospital medicine.

“As someone passionate about hospital medicine as a field, I’ve been fortunate enough to be mentored by cardiologists and clinical trialists,” he said. “That expanded my horizon, and gave me more edge on how I think about the clinical research or leadership dilemmas. You can reach out to cardiology, you can reach out to critical care, you can reach out to nephrology.”

It’s an important decision, he said.

Dr. Barkoudah said, “My mentor” — Mark A. Pfeffer, MD, PhD — “one time said, ‘Your mentor is like your mom or your dad. And you have a chance to choose, so choose wisely.’”

External Recommendation Letters Made Easier

When a junior faculty member in pediatric hospital medicine is looking to get promoted from assistant professor to associate professor, or from associate to full professor, they might have just about everything lined up—peer-reviewed publications, committee involvement, talks at big conferences, plenty of colleagues at their center to vouch for their credentials. But then they might look around and wonder who will write an external letter of recommendation.

Ann-Marie Tantoco, MD, assistant professor of medicine and pediatrics at the Northwestern University Feinberg School of Medicine in Chicago and some of her colleagues saw this as a potential stumbling block for some applicants and have put together a tool to help: a pool of potential external letter-writers who could be matched up with faculty hoping to be promoted. The resource grew out of her involvement with the SHM’s Pediatrics Special Interest Group, in collaboration with the American Academy of Pediatrics and the Academic Pediatric Association.

“It can be difficult to find people to write these external letters,” she said. External letters of recommendation—which are a requirement for promotion at most major academic medical centers—can be a particularly tricky requirement because they need to come from someone outside the

center where an applicant works. So it has to be someone familiar with the work of the applicant, but it needs to be an “arm’s length” familiarity—the mentor with whom you’ve worked for 10 years, for example, is not a candidate.

The resource Dr. Tantoco and her colleagues have developed is a list of volunteer letter-writers—all pediatric hospitalists with the rank of associate or full professor—that includes their areas of expertise, contact information, and the number of letters they are willing to write each year. There is also a list of pediatric hospitalists who need external letters.

“We have a group of people who look at both of those lists and when someone requests names, we look at our lists of volunteer letter-writers and match up based on the interest and the rank they want to apply to,” she said.

So far, 104 people have volunteered to write letters, and 69 have requested names of letter writers. Because the promotion process is lengthy, it is not yet known how many of those applicants have been successful.

Dr. Tantoco said it is meant to make a complicated and stressful process a bit easier.

“All of us were looking at how we could help those who were trying to get promoted.” ■

Deepti Rao, MD, professor in the hospital medicine division and vice division chief for faculty affairs at the University of New Mexico in Albuquerque, said senior faculty can help those they mentor move through the ranks by getting to know the faculty in their division so they are in a position to match up junior faculty with the right projects.



Dr. Rao

“Even if you’re not sitting in on the reviews, get to know the faculty in your division. When you hear about things that come up, think about junior faculty for opportunities,” she said. “Opportunities come up all the time so consider who might benefit from this opportunity, who seems to have an interest in the area, and then encourage them to apply.”

For junior faculty, the “number one” thing they can do for their career is to find their passion—an area in which they have an interest and would like to grow.

“The people I’ve seen who do really well within a year or two of starting their job, understand themselves enough to know what they love and what they want to put their time and energy into and then associate themselves with other people and activities aligned with those same interests,” she said.

For those who aren’t sure of their interests, she said to start by signing up for activities and projects and going from there.

“You need to get out there,” she said. “I think it’s just a process.”

Dr. Tantoco said an early focus and involve-

ment are extremely valuable.

“If you know your interest, get involved in projects or interest groups regarding those subjects to get to know more people, get involved in either quality initiative projects or groups that can help get things on your CV and help you get to know more people,” she said. “The more you do, the more people will know you, and the more you’ll be able to get on your CV, and the more experience you’ll have.”

Dr. Renner said helping junior faculty advance through the ranks is an important part of a successful program.

“If you can retain good people, you’re going to improve your reputation. If it’s always 60% of your people are new people, you can’t really build a program,” she said. At UT Southwestern, she said, “If we continue to grow, maybe at some point, a hospitalist will be a chair of medicine here—something that was inconceivable when I started.”

Dr. Rao said success with the promotion process can have wide-reaching effects.

“Once you have more and more senior faculty, that’s just helpful for everyone in the department and the division. So those people can mentor junior faculty, they take positions in the university and your group as a whole gets more visible in the health sciences center.” ■

Tom Collins is a medical writer in South Florida who has written about everything from lethal infections to thorny ethical dilemmas, runaway tumors to tornado-chasing doctors. He gathers health news from around the globe and lives in West Palm Beach.

Hospitalists, the Catalyst for Voter Engagement in Healthcare

An opportunity for change

By Carlos Rubiano, MD, and Alexandra Schoenberger, MD, MSEd

Voting is now widely considered to be a social determinant of health, with increased access associated with improved health outcomes.^{1,2} Nationwide, the healthiest counties have up to 30% greater voter turnout compared to the least healthy counties.³

Already numerous medical organizations have advocated in support of healthcare-driven initiatives to increase voter engagement.⁴⁻⁶ Most recently, the American College of Physicians released a position paper in December 2023 promoting awareness, engagement, and recommendations in support of equitable access to the electoral process.⁷ The legal precedent for healthcare institutions offering voting-related material dates back to the birth of the 1993 National Voter Registration Act, permitting all offices that provide public assistance to offer voting registration opportunities.⁸ This stance is further underscored by the Office of Internal Revenue Services, and the Department of Health and Human Services, which support nonpartisan voter registration efforts by health centers and 501(c)(3) organizations.^{9,10}

Yet, despite the evidence, calls to action, and legal precedent, not all hospitals have been early adopters. Some institutions may have concerns that voter engagement can be a partisan act, evolving into discussions of how individuals vote. The political and social climate has made conversations surrounding voter engagement feel polarizing, even when done in a nonpartisan manner. Institutions may lack an accepted blueprint on how to integrate voter engagement effectively and equitably into a hospital system, and some physicians may ask “*Is this in our lane?*” These hesitations can give rise to unintended restrictions in patient care and create a taboo, akin to early conversations surrounding firearm safety in healthcare.

Hospitalists can capitalize on their system-wide influence to help normalize voter engagement in healthcare and create sustainable and effective voter engagement solutions by: strategically engaging hospital leadership; partnering with nonpartisan civic engagement organizations; understanding hospital policy to guarantee it reflects federal, state, and local regulations; and building multidisciplinary coalitions that include learners to ensure future physicians feel comfortable and competent helping patients register to vote. Hospitalists can be the advocates that help hospital leadership embrace voter engagement in healthcare while spreading awareness that voting is a right and a determinant of health that all patients should enjoy.

At the University of Cincinnati Medical Center, hospitalists, with the support of government relations, have taken steps towards this approach. We created a partnership with *Vot-ER*, a nonprofit nonpartisan organization to integrate civic engagement tools into our healthcare space.¹¹ The tools target healthcare associates to check their registration status, register to vote, or obtain additional information about voting. Through this initiative, 80% of individuals who engaged with the resources registered to vote, yielding more than 500 new voter registrations in



Dr. Rubiano



Dr. Schoenberger

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seven months. Our partnership has expanded to include social work, hospital trainees, and other non-clinical leadership from the departments of marketing and communication, legal, and human resources. Together, we are working towards ensuring our institutional policies and practices for voter engagement effectively reach patient care.

Helping our communities get registered to vote through healthcare-driven initiatives is feasible and can lead to greater voter engagement.^{12,13} Hospitals must be cognizant that they serve a diverse community with varying barriers to voting. On one hand, the community of patients they care for is at a higher risk of missing out on opportunities to get registered to vote, update their registration status, and participate in the voting process when they encounter an unexpected hospitalization. On the other hand, the community they employ and medical residents they train frequently cite being too busy to register to vote.^{14,15} Integrating voter registration access into a hospital system can help facilitate voter engagement across a community.

With a general election on the horizon, hospital leaders have an opportunity to partner and create time-sensitive change. Hospitalists are uniquely positioned to be the catalyst for this change by leveraging their influence to help effectively integrate voter engagement into hospital systems. The time is now to create sustainable practices in our hospital systems to decrease barriers to voter engagement. As leaders in the healthcare space, hospitalists can change the narrative, and more importantly, change health outcomes by offering communities the most basic of prescriptions—the opportunity to vote. ■

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Best Case Scenarios: Developing Scholarship From Your Day-to-day Work

Breaking down the daunting task

By Ethan Molitch-Hou, MD, Susan Feldt, MD, Sarah Vick, MD, and Adam Gray, MD

When navigating academic medicine, a daunting task is entering into the world of scholarship. Junior faculty, residents, and medical students are often intimidated trying to find an entry point. Lack of experience, time, and knowledge of where to even begin are major hurdles. As hospitalists are often largely clinical, patient care is where scholarship can start. The people we care for every day are fundamental to our understanding of the practice of medicine. Long before clinical trials, we had descriptions of angina from Osler and Heberden that came from bedside experience. Case reports have led to fundamental discoveries including the first reports of AIDS and effects of gadolinium in patients with renal dysfunction. More recently they played an integral role during the onset of the COVID-19 pandemic, describing clinical manifestations and complications. While scholarship can be intimidating, our day-to-day work is where it all starts.

Where to start

Case presentations at local teaching conferences at your institution serve as perfect initial venues. Morning report is a time-honored tradition in internal medicine utilizing real-life cases for clinical learning about diagnostic dilemmas, clinical decision-making, and working through challenging cases. Morning report is prevalent in residency programs, serving as a great early local venue for residents and mentoring faculty to practice the skills of presenting complicated patients and developing learning objectives. For junior faculty, this serves as continuing medical education and an opportunity to mentor trainees. Morbidity and mortality conferences are an additional, commonly available, local platform well-suited for cases with a focus on poor outcomes or systems-based learning points for quality improvement.

Many regional conferences of internal medicine professional organizations accept cases for poster or oral presentations in the form of clinical vignette abstracts. This academic writing is more focal and achievable for new writers, with word and character limits typically keeping the abstract to approximately one page. Vignettes are an accessible entry point to gain

experience and develop skills with abstract and poster development, as well as presenting the work. Regional conferences are a great opportunity to meet people in your field, often with an accepting and familiar audience and easier travel. National conferences provide a platform to reach an even broader audience to disseminate teaching points from your clinical vignettes, as well as offer even more opportunities for future collaboration and sharing of ideas. SHM's Converge annual conference is an excellent national venue for rare diagnoses, unique presentations, and learning points of common diseases of interest to practicing hospitalists. In addition to general medicine conferences, many relevant subspecialty national conferences can also be considered.

Moving toward publication

The next level of scholarship related to patient cases is publishing in national journals. Case reports and clinical images are accessible ways to publish patient cases that highlight an unusual presentation or nuanced care. Manuscripts for case reports are generally longer and more in-depth than clinical vignette poster submissions. Good case reports usually have specific learning points for the reader to take away. These often focus on a novel or unexpected occurrence, which can be related to the presentation, side effects, clinical course, therapeutic alternatives, or new variations in a disease. A brief description of the case, highlighting the pertinent positives and negatives, then leads to a robust discussion of the unique features and lessons learned, and a summary of your literature review. Writers should be mindful that patient consent is required for some publications. Clinical image publications generally have more succinct case descriptions than a case report but require high-quality images related to a finding on physical exam, radiological study, or electrocardiogram. Both methods of scholarship are access points for publication based on interesting cases in everyday clinical practice. In settings of emerging new data such as the COVID-19 pandemic or, recently, with euglycemic diabetic ketoacidosis, a series of cases can be combined.

As hospitalists, clinical reasoning and diagnostic dilemmas are integral to our daily practice and provide another scholarship opportunity. There are several ways to publish these challenging cases. First, The Journal of the American Medical Association's "Teachable Moment" series focuses



Dr. Molitch-Hou



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on common cases that resulted in either over- or under-utilization of healthcare resources. The goal is to involve a trainee as a first author and highlight opportunities for improved resource utilization. Cases with especially nuanced clinical reasoning can be published in several venues including the Journal of Hospital Medicine's "Clinical Care Conundrum," Journal of General Internal Medicine's "Exercises in Clinical Reasoning," and New England Journal of Medicine's "Clinical Problem Solving." These formats present a patient case in aliquots using an expert clinician who provides commentary on their clinical reasoning. The particular journal will designate the format and case content.

Expanding to other scholarship ideas

Taking care of patients often sparks our curiosity and raises clinical questions leading to other pathways of scholarship. In hospital medicine, we routinely find ourselves with a complicated patient and baffled about clinical management. These dilemmas lead us to dive into the literature. These situations are usually shared by many and lead to an excellent opportunity to write an article describing the best approach to a specific clinical scenario. The Hospitalist's "Key Clinical Question" series and Cleveland Clinic Journal of Medicine's "1-Minute Consult" series are excellent avenues to describe the approach to these specific clinical questions. When the topic touches on areas of high-value care or potential waste, or challenges clinical dogma, the Journal of Hospital Medicine's "Things We Do For No Reason" series is an excellent avenue for dissemination that can influence widespread changes in clinical care.

Clinical problems with our

patients spark us to seek change with a potential intervention or investigation. While some prospective research, like randomized controlled trials is intimidating and less common for hospitalists, we routinely find ourselves involved in quality improvement. A common opening towards a quality improvement idea is when we notice systems-based problems or delays in the optimal care of our patients. As a hospitalist on the ground level on most aspects of inpatient care, we have a pivotal role in identifying process problems, and then acting with a multidisciplinary team for process improvement. To widen the impact beyond just the patients in our healthcare setting, in any project we embark on, it's helpful to plan out ways this can be turned into scholarship to disseminate information so others can learn from our experience and actions. To improve on this aspect of patient care and scholarship, there are numerous quality improvement training courses both locally and nationally including the Society of Hospital Medicine's Quality Improvement Academy.

Summary

Many forms of scholarship are accessible to hospitalists, and caring for patients on the front lines is an ideal place to generate ideas. Disseminating what we learn from our patient interactions shapes the field of hospital medicine and impacts patients beyond those in front of us. Everyday patient care is why most of us started our careers as hospitalists and can serve as an excellent entry point for generating scholarship. ■

SHM's Physicians in Training committee shares articles on topics relevant to trainees and early-career hospitalists.



SIG Spotlight: Multi-site Leaders

Navigating the complexities of running operations across multiple hospitals

By Richard Quinn

When you've seen one hospital-medicine group, as the saying goes, you've seen one hospital-medicine group.

But when you've seen one multi-site hospital-medicine group, chances are you've seen the challenges facing many of them.

"There's more commonality of challenges," said Thomas Frederickson, MD, FACP, MBA, SFHM, a Nebraska-based system vice president of hospital medicine operations for CommonSpirit Health Physician Enterprise.



Dr. Frederickson

Dr. Frederickson's eye toward shared experience comes from the right perch. He's the chair of SHM's Special Interest Group for Multi-site Leaders, whose remit is to help managers and top physicians navigate the complexities of running operations over multiple hospitals.

"Most of us do work in fairly large healthcare systems, and most fairly large healthcare systems seem to be on this journey to try and bring more standard-operation practices in all areas, including hospital medicine," Dr. Frederickson said. "That tends to be a common theme, and a theme that we embrace."

Longstanding SIG member

Leslie Flores, partner emeritus of Nelson Flores Hospital Medicine Consultants in La Quinta, Calif., says that while the pitfalls facing all hospital medicine managers share traits, multi-site leaders feel a particular bond.



Ms. Flores

"Staffing and scheduling, and how do you optimize the contribution of nurse practitioners and physician assistants ... those are common to everybody," said Ms. Flores, seen as a driving force of the SIG in its earliest days. "But then there is another level where there are unique issues that multi-site leaders face that hospitalist leaders at a single site don't face.

"Culture issues across multiple sites, and how do you establish common culture across sites? How do you deploy resources across sites to make the most use of your resources? How do you deal with things when one site is very accepting of the work of nurse practitioners and physician assistants, but another site is much more like, only physicians can do this work kind of thing?"

Dr. Frederickson says that having a peer group for health leaders dealing with multiple hospitals is invaluable.

"We meet periodically, we have engagement events, we think

about what topics resonate," he said. "We bring experts in and facilitate discussions. But a lot of times it's just introducing discussions, introducing topics in more of a guided discussion on the topic.

"Then, kind of beyond that, it's the connections. 'Oh, I met Dr. So-and-so, and this is what they're doing in their healthcare system, and that issue just came up.' Getting to know these folks, and having had conversations with them, it's useful."

Ms. Flores says that the SIG also serves as a way to breed collegiality among hospitalists who can sometimes view each other as competitors.

"Historically, people responsible for hospital-employed groups, and people working for management companies have seen each other as competitors, because there's always that concern that, if you're in an employed hospitalist group, that leadership of the health system might decide to outsource their hospitalist program to a management company," she said. "Or, if you're a management company rep, you're always worried that the health system might say, we can do it cheaper ourselves. Now that we know how you do this, and we've sort of learned all your systems, we can do it ourselves.

"There's always been, I think, this little bit of a sense of competition, or concern about who is going to win out there. Through this SIG, I think we've seen there is room for both employed hospitalist programs and outsourced hospitalist

programs. And that we don't have to compete against each other or worry about each other. There is plenty of room for both."

Dr. Frederickson says one of the high points on the SIG's annual calendar is a forum that lasts about a day and a half and gives dozens of multi-site leaders a chance to meet in person. This year's event was held in May and focused on "culture and developing common culture across different sites, and the challenges around culture."

"It's an opportunity to get together, informally, with a peer group of people to discuss the issues that are most important to you right now," Ms. Flores said. "You kind of put your issues on the table, hear from other people what they're doing about them, and be able to share what you're doing that you're very proud of that you think is innovative to other people, and hear them say, 'Oh, wow, that's cool. I want to learn more about that.' It's just been a really nice way to get people talking and networking on a very intimate, sort of informal basis."

Ms. Flores adds that, given the increasing pace of healthcare systems joining forces, the work of the SIG will only grow in stature over the coming years.

"All these mergers and acquisitions are going to mean that there are more multi-site leaders," she said, "and they are going to be responsible for a much larger scope of responsibility going forward." ■

Richard Quinn is a freelance writer in New Jersey.



Chapter Spotlight: New Hampshire and Vermont

Connection, camaraderie, and curriculum are the keys to success

By Richard Quinn

Perhaps the best description of SHM's combined New Hampshire and Vermont chapter is camaraderie and curriculum, with a dash of snow.

"We're creating...a kind of neighborhood for hospitalists to be connected with one another independent of where they work," said chapter president B.



Dr. Krawitt

Justin Krawitt, MD, the system medical director of utilization and clinical documentation at Dartmouth Health and assistant professor of medicine at Dartmouth Geisel School of Medicine. "The opportunities that we have at academic medical centers and some large hospitals just aren't there for a lot of hospitalists, and SHM can provide the forum to ensure a support network for all hospitalists."

In the ski country that is the northern reaches of New England, that can be a different experience than in urban centers or warmer locales. It can mean long drives in inclement weather. Thus, scheduling a full-weekend continuing medical education course may fit the bill better than a single evening meeting. To that end, the New Hampshire-Vermont debut conference was held recently at Stratton Mountain Resort, com-

plete with more than two feet of fresh powder on day one.

"In this region, there's a lot of people who don't always have the opportunity for CME time to travel a long way to larger national meetings, or the budget to do that," said Dr. Krawitt, a 20-year veteran at Dartmouth who is based in Lebanon, N.H.

"And the other thing is, a lot of people are working in silos in these small states. What we realized was part of the mission of hospital medicine ... the Society of Hospital Medicine is there to support hospitalists, period. And that means not just the ones at academic medical centers, who have lots of opportunities for CME learning, consultation, and meetings with subspecialists and experts."

Dr. Krawitt says focusing on folks who need that type of attention has been a real success in member engagement for the chapter. "Having something local over the course of a weekend, that hits some of those buttons for people who are feeling more isolated or siloed in hospitals," he adds. "People who don't have the budget to do things, and in a way to kind of see what's out there and deliver for folks. And if we're going to do it, why not a ski area, right?"

The New Hampshire and Vermont regions can take on a broader geographical diaspora than many other chapters. There are a handful of population centers in each state—think Concord, Nashua, and Manchester in New Hampshire, and Burlington in Vermont—

that can account for an outsized percentage of patients and physicians. To that end, locals started the two-state chapter in 2019 and Dr. Krawitt has remained in a leadership role since the COVID-19 pandemic to keep continuity.

"It's gratifying," he said. "I've met a lot of people. We've accomplished a lot of things. We did a couple of things that, for a small chapter, I think are pretty neat."

Dr. Krawitt isn't the only one who thinks it's neat, as the chapter's efforts earned it a 2023 Silver Chapter Excellence Award. Some chapters may be accustomed to accolades of that nature, but Dr. Krawitt says it really helps validate the efforts of those in more remote areas—a point he told SHM CEO Eric Howell directly at a recent chapter event.

"In some ways, I say, 'Ah, the awards, okay, I guess it's a feather in your cap,'" he said. "But in other ways...recognition from the national chapter is important because there are a lot of people putting in a lot of hours on this, and it's all pro bono. All free. And when you think about the earning power and the other expectations on people's plates from their work lives, and their home lives, the amount of hours of volunteer time that went into putting this on was pretty substantial.

"If you had to pay market rates to pay physicians to do that, you'd go margin-negative pretty quickly on something like this. SHM depends on the passion and spirit of volunteerism to get these things

off the ground. So, I think that the idea that they recognize chapters for doing this is important."

National awards are great, but boots-on-the-ground connections are better. Increasingly, the chapter is getting residents involved to get members involved earlier in their careers.

"A lot of residents get very little education on what it's like to be a hospitalist outside of an academic center," Dr. Krawitt said. "There are some not-so-nice things that we have to navigate. Whether it's payer denials for services delivered or denial of appropriate benefits to patients, regulatory compliance, even fraudulent behavior of payers and providers, and many other aspects of revenue cycle operations. But they're not exposed to or taught about these types of things in medical school or residency. I think that SHM, as an independent organization that supports hospitalists, can fill that void."

Connection—along with camaraderie and curriculum—might as well be the third C in the chapter's bio.

"Whether you're from a critical access hospital, an associate provider, a resident, an attending, I want to put offerings out there that connect you to the career that you're in," Dr. Krawitt said. "You've chosen to be a hospitalist, and it's a really admirable career...It's not perfect. There are ways we can do this better. And how we come together and do that is important." ■

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Semaglutide for the Hospitalists

Get to know the uses, side effects, and outcomes

By **Tanveer Singh, MD, Nkemdilim Mgbojkwé, MD, SFHM, Ramesh Adhikari, MD, MS, FHM, and Kunjam Modha, MD, FACP, SFHM**

Obesity is a chronic disease and a global health challenge across all ages and socioeconomic backgrounds. Semaglutide, a glucagon-like peptide-1 receptor agonist (GLP-1 RA), has shown promising results for obesity management.

Initially, an injectable form of this medication was introduced under the name Ozempic to treat type 2 diabetes mellitus (T2DM). This was followed by the approval of the first oral GLP-1 RA, known as Rybelsus, by the U.S. Food and Drug Administration (FDA) in 2019. Subsequently, in 2021, the FDA approved the use of this medication for weight loss under the name Wegovy.¹ Another GLP-1 RA called tirzepatide received FDA approval in 2023. In addition to GLP-1, tirzepatide also activates another hormone receptor called glucose-dependent insulinotropic polypeptide or GIP. Tirzepatide is available under the proprietary names Mounjaro for T2DM and Zepbound for weight loss.

Apart from treating T2DM, semaglutide is also approved for managing chronic obesity in patients with a BMI greater than 30, or with a BMI higher than 27 and comorbidities such as hypertension, dyslipidemia, or diabetes mellitus. Semaglutide has demonstrated significant efficacy compared to both placebos and other GLP-1 receptor agonists, like liraglutide, in multiple randomized trials, sparking interest among physicians in prescribing semaglutide.²

While semaglutide and similar GLP-1 RA are primarily used in outpatient settings and not on most hospitals' formularies, hospitalists should familiarize themselves with its uses and adverse effects.

GLP-1 RAs have several positive effects on the body. They increase insulin secretion, reduce the release of glucagon, inhibit the production of glucose by the liver, and improve insulin sensitivity. One of their most important effects is slowing down the movement of food in the stomach and sending signals of fullness to the brain, which helps patients feel full after eating a small meal and reduces their overall calorie intake.

GLP-1 RAs are usually prescribed by endocrinologists, obesity medicine specialists, and primary care physicians (PCPs). However, with increased evidence of these drugs reducing cardiovascular mortality in patients with T2DM and a recent randomized controlled trial show-

ing improved symptoms (compared to placebo) in patients with heart failure with preserved ejection fraction and obesity, semaglutide is being prescribed by cardiologists as well.³

Many weight-loss clinics and medical spas also dispense a compounded formulation of semaglutide which is not produced by the original manufacturer. Patients may choose this option because prescription semaglutide is not covered by their insurance. The FDA allows compounders to prepare a compounded version of a drug if it is in short supply, and injectable semaglutide was in short supply for most of 2023. However, the FDA does not review compounded versions of these drugs for safety, quality, or effectiveness.¹ Similarly, patients may be obtaining semaglutide online with absolutely no checks and these sources may have too little, too much, or no active drug at all.

As with any GLP-1 RA, major adverse effects of semaglutide include nausea, vomiting, diarrhea, and constipation. Some less common side effects are pancreatitis, bowel obstruction, and gastroparesis. Given the popularity of GLP-1 RAs, it's essential for hospital staff to conduct a comprehensive medication reconciliation and history for patients who present with the mentioned complaints. This is particularly important because patients may have been prescribed semaglutide from medical spas or other sources not linked to their electronic health records (EHRs).

For patients presenting with nausea, vomiting, or constipation, these adverse effects are self-limiting, and holding the GLP-1 RA, hydration with IV fluids, and bowel rest should be enough for most patients. Hence, extensive diagnostic testing in the form of endoscopies and imaging studies should be avoided for these patients.

Patients presenting with acute pancreatitis should be managed on the same lines as you would manage pancreatitis. Semaglutide is, however, contraindicated in patients with acute pancreatitis, and it should not be resumed after discharge.³

There have been reports of increased risk of aspiration pneumonia during anesthesia in patients taking semaglutide. This is due to delayed gastric emptying and since semaglutide has a long half-life, the American Society of Anesthesiologists recommends holding semaglutide for one week prior to elective procedures.⁴ For semi-urgent or urgent procedures, you should share the concern of a possible full stomach with the patient, anesthesiologist, and surgeon or procedur-



Dr. Singh



Dr. Mgbojkwé



Dr. Adhikari



Dr. Modha

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Key Points

- Hospitalists should be aware of semaglutide's minor side effects like abdominal pain, constipation, nausea, and vomiting, and its major side effects like bowel obstruction and pancreatitis.
- It is crucial to perform a thorough medication reconciliation and be aware that patients may be taking medications in the compounded form which may not show on the EHR.
- Hospitalists should educate themselves about this medication class so they can counsel patients about considering GLP-1RAs and referring them to their PCPs or endocrinologists.

alist so they can be appropriately prepared during the surgery. Also, semaglutide should not be prescribed or discontinued in patients with advanced diabetic gastroparesis, history of bowel obstruction, or severe constipation.

It is imperative to educate patients about the chronicity of obesity and that semaglutide is not a quick fix. The STEP 1 Extension trial showed that one year after stopping semaglutide and lifestyle intervention, the patients regained a mean of two-thirds of their initial weight loss. The same randomized controlled trial revealed that improvement in cardiometabolic profile also started to diminish after one year of holding semaglutide.⁵

The initiation of GLP-1 agonists like semaglutide in the acute inpatient setting for weight loss is uncommon. Use by the hospitalist for the management of T2DM-related hyperglycemia is more likely, either as continuation of outpatient therapy, or initiated near discharge as part of a transition management plan if the patient is eating, has no

contraindications to initiation or continuation of therapy, and glucose levels are well controlled.

However, routine use during an acute hospitalization is uncommon, owing to issues around the availability of formulary, cost to the system, lack of widespread insurance coverage, and availability. Further, national guidelines such as those from the Endocrine Society recommending the use of insulin therapy rather than non-insulin therapies for glycemic management may also limit its routine use in the acute setting.⁶ Hospitalists are more likely to encounter such drugs in individuals already receiving them in the ambulatory arena who present with an acute issue, highlighting the importance of understanding its side effect profile. ■

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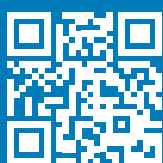
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