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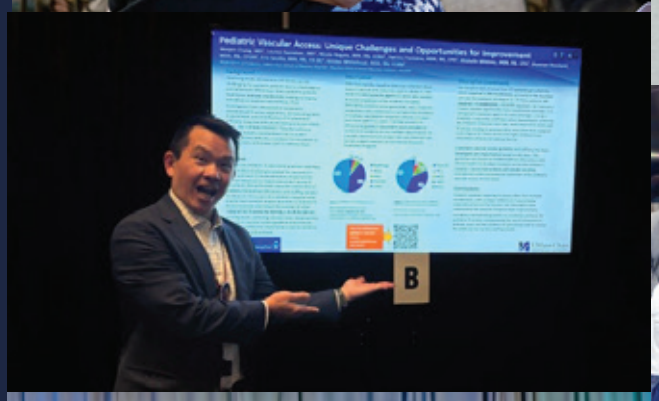
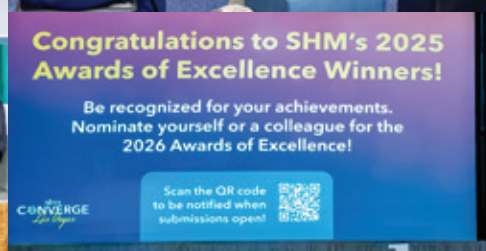
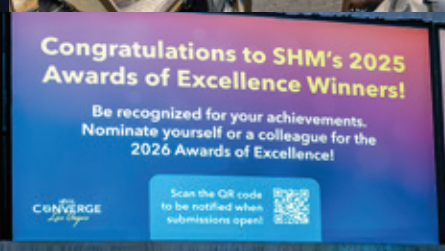
The Hospitalist







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IN THE NEXT ISSUE...

Beyond the hospital and locum tenens

SHM Global & Rural Health Foundation Grant Recipients

Last year, SHM launched the SHM Global & Rural Health Foundation in service of its mission to promote high-value care and optimal outcomes for acutely ill patients. Hospital-based clinicians and practice administrators are eligible to apply for either a travel grant or an equipment grant to support these efforts, in both rural community hospitals in underserved regions of the U.S. and missions serving remote villages around the world.

SHM is proud to recognize the inaugural grant recipients:

Dr. John Kulesa, a pediatric hospitalist at Mount Sinai in New York, received a travel grant to collaborate with The Arnhold Institute for Global Health at Mount Sinai and Dhulikhel Hospital, a non-profit tertiary care center in Dhulikhel, Nepal.

Dr. Rachelle Soriano, an internist in Austin, Texas, received a travel grant to work with internal medicine co-residents and faculty members from Dell Medical School in Austin, at the Moi Teaching and Referral Hospital for Providing Access to Healthcare in Eldoret, Kenya.

Dr. Amanda Bradke, an internist and assistant professor at Rush Primary Care in Chicago, received an equipment grant for portable point-of-care ultrasound to enhance services and provide safer perioperative care to patients in Duquesa, Dominican Republic.

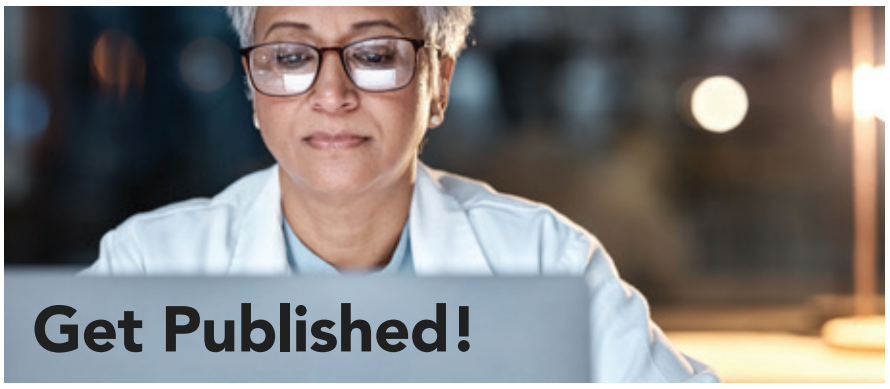
Certificate of Leadership in Hospital Medicine Recipients

The Certificate of Leadership in Hospital Medicine (CLHM) cultivates leadership skills in the context of specific hospital medicine challenges. Participants develop a professional portfolio that showcases their ability to plan, execute, and evaluate initiatives that strengthen hospital medicine programs.

This year, SHM honors three outstanding hospitalists who have demonstrated their commitment to leadership in hospital medicine—Dr. Mayank Aggarwal, Dr. Alya Ahsan, and Dr. Mary Weitzel. Congratulations!

Check Out All the SHM Converge 2025 Content Online

This issue of *The Hospitalist* is jam packed with session recaps from SHM Converge 2025 in Las Vegas, and you'll find even more content online only. Scan the QR code for all our Converge 2025 Coverage. ■



If you're an SHM member interested in contributing to *The Hospitalist*, there are lots of opportunities.

We publish articles about the news, trends, and issues that affect hospital medicine. Topics include everything from clinical and practice management to quality, career, leadership, pediatrics, and more.

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

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

THE Hospitalist®

July 2025
Volume 29 | No. 7

Veklury®
remdesivir 100 MG FOR INJECTION

LEADING THE WAY

THE ONLY COVID-19 ANTIVIRAL WITH
OUTCOMES ACROSS 3 KEY TREATMENT GOALS:

DISEASE PROGRESSION, RECOVERY TIME, AND READMISSION[1-3]

INDICATION

VEKLURY is indicated for the treatment of COVID-19 in adults and pediatric patients (birth to <18 years of age weighing ≥1.5 kg), who are:

- Hospitalized, or
- Not hospitalized, have mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death.

THE ONLY NIH RECOMMENDED COVID-19 TREATMENT OPTION
included for adult patients hospitalized for COVID-19[4]

- Not requiring supplemental O_2 and
- Requiring low- or high-flow O_2

Turn the page for details

IMPORTANT SAFETY INFORMATION

Contraindication

- VEKLURY is contraindicated in patients with a history of clinically significant hypersensitivity reactions to VEKLURY or any of its components.

Please see Brief Summary of full Prescribing Information on the last page.

VEKLURY® REDUCED DISEASE PROGRESSION AND RECOVERY TIME, AND DEMONSTRATED READMISSION OUTCOMES ACROSS A BROAD RANGE OF COVID-19 SEVERITY[1-3]

Disease progression[2]

10% **Absolute reduction in incidence of new mechanical ventilation or ECMO with VEKLURY in ACTT-1** (13%, n=402) vs placebo (23%, n=364) in patients who did not receive either at baseline (95% CI, -15 to -4)

Recovery time[1,2]

5 **Days shorter recovery time with VEKLURY in the ACTT-1 overall study population**

Median 10 days with VEKLURY vs 15 days with placebo; recovery rate ratio: 1.29 (95% CI, 1.12 to 1.49), $P < 0.001$

Adverse reaction frequency was comparable between VEKLURY and placebo–any adverse reactions (ARs), Grades ≥3: 41 (8%) with VEKLURY vs 46 (9%) with placebo; serious ARs: 2 (0.4%)* vs 3 (0.6%); ARs leading to treatment discontinuation: 11 (2%)† vs 15 (3%).[1]

ACTT-1 study design: a randomized, double-blind, placebo-controlled, phase 3 clinical trial in hospitalized adult patients with confirmed SARS-CoV-2 infection and mild, moderate, or severe COVID-19. Patients received VEKLURY (n=541) or placebo (n=521) for up to 10 days. The primary endpoint was time to recovery within 29 days after randomization. Disease progression was a secondary endpoint. Recovery was defined as patients who were no longer hospitalized or hospitalized but no longer required ongoing COVID-19 medical care.[1,2]

Real-world readmission data[3]

40% reduced likelihood of 30-day, COVID-19–related readmission was observed with VEKLURY; aOR: 0.60 (95% CI, 0.58 to 0.62), $P < 0.0001$

- In the overall cohort, 10,396 out of 191,816 (5.4%) non-VEKLURY patients compared to 7,453 out of 248,785 (3%) VEKLURY patients

27% reduced likelihood of 30-day, all-cause readmission was observed with VEKLURY; aOR: 0.73 (95% CI, 0.72 to 0.75), $P < 0.0001$

- In the overall cohort, 17,437 out of 191,816 (9.1%) non-VEKLURY patients compared to 15,780 out of 248,785 (6.3%) VEKLURY patients

A large, real-world, retrospective observational study examined 30-day COVID-19–related‡ and all-cause§ readmission to the same hospital after being discharged alive from the index hospitalization for COVID-19 in adult patients (≥18 years of age) who were treated with VEKLURY vs those not treated with VEKLURY across variant periods: pre-Delta, Delta, and Omicron, from 5/2020-4/2022. Data were examined using multivariate logistic regression.‖

- **Data Source:** PINC AI™ Healthcare Database
- This study was sponsored by Gilead Sciences, Inc.
- The study included index patients on room air, low- and high-flow supplemental oxygen, and IMV/ECMO
- VEKLURY-treated patients received at least 1 dose of VEKLURY during the index COVID-19 hospitalization¶

Study population and select characteristics[3]

- **440,601 patients** with a primary diagnosis of COVID-19 and who were discharged alive
- **248,785 VEKLURY patients** were compared to **191,816 non-VEKLURY patients**

Compared to nonreadmitted patients, readmitted patients:

- **Were older:** median 71 years vs 63 years
- **Had more comorbidities:** CCI ≥4: 36% vs 16%
- **Were more likely to have NSOc** (42% vs 39%) and **less likely to be on low-flow oxygen** (40% vs 42%)
- **Were less likely to be treated with VEKLURY:** 48% vs 57%
- **Were more likely to have received corticosteroid monotherapy during index hospitalization:** 38% vs 29%

Compared to non-VEKLURY patients, VEKLURY patients:

- **Were younger:** median 62 years vs 64 years
- **Were more likely to have received some level of supplemental oxygen support (any supplemental oxygen support, 1-NSOc):** 70% vs 48%

Study considerations[3]

Real-world studies should be interpreted based on the type and size of the source datasets and the methodologies used to mitigate potential confounding bias. Real-world data should be considered in the context of all available data. Results may differ between studies.

Strengths: This large study population enabled subgroup analyses across variant periods and supplemental oxygen requirements and considered a well-defined cohort of patients hospitalized for COVID-19.

Limitations: There exists a potential for residual confounding due to unmeasured variables, including differences in groups that could not be accounted for. The database did not capture data relating to time from symptom onset, infecting viral lineages, and prehospital care such as other treatments. Some patients who received supplemental oxygen could be misclassified as NSOc due to the absence of billing charges for supplemental oxygen.

*Seizure (n=1), infusion-related reaction (n=1).
†Seizure (n=1), infusion-related reaction (n=1), transaminases increased (n=3), ALT increased and AST increased (n=1), GFR decreased (n=2), acute kidney injury (n=3).
‡Defined as a readmission with a primary or secondary discharge diagnosis of COVID-19.
§Defined as readmission to the same hospital within 30 days of being discharged alive from the hospitalization for COVID-19.
‖The model adjusted for age, corticosteroid use, variant era, Charlson Comorbidity Index, maximum oxygenation requirements, and ICU admission during COVID-19 hospitalization.
¶Refer to the VEKLURY Prescribing Information for dosing and administration recommendations.

Veklury® remdesivir 100 MG FOR INJECTION | LEADING THE WAY

IMPORTANT SAFETY INFORMATION (cont'd)

Warnings and precautions

- **Hypersensitivity, including infusion-related and anaphylactic reactions:** Hypersensitivity, including infusion-related and anaphylactic reactions, has been observed during and following administration of VEKLURY; most reactions occurred within 1 hour. Monitor patients during infusion and observe for at least 1 hour after infusion is complete for signs and symptoms of hypersensitivity as clinically appropriate. Symptoms may include hypotension, hypertension, tachycardia, bradycardia, hypoxia, fever, dyspnea, wheezing, angioedema, rash, nausea, diaphoresis, and shivering. Slower infusion rates (maximum infusion time of up to 120 minutes) can potentially prevent these reactions. If a severe infusion-related hypersensitivity reaction occurs, immediately discontinue VEKLURY and initiate appropriate treatment (see Contraindications).
- **Increased risk of transaminase elevations:** Transaminase elevations have been observed in healthy volunteers and in patients with COVID-19 who received VEKLURY; these elevations have also been reported as a clinical feature of COVID-19. Perform hepatic laboratory testing in all patients (see Dosage and administration). Consider discontinuing VEKLURY if ALT levels increase to >10x ULN. Discontinue VEKLURY if ALT elevation is accompanied by signs or symptoms of liver inflammation.
- **Risk of reduced antiviral activity when coadministered with chloroquine or hydroxychloroquine:** Coadministration of VEKLURY with chloroquine phosphate or hydroxychloroquine sulfate is not recommended based on data from cell culture experiments, demonstrating potential antagonism, which may lead to a decrease in the antiviral activity of VEKLURY.

Adverse reactions

- The most common adverse reaction (≥5% all grades) was nausea.
- The most common lab abnormalities (≥5% all grades) were increases in ALT and AST.

Dosage and administration

— Administration should take place under conditions where management of severe hypersensitivity reactions, such as anaphylaxis, is possible.

- **Treatment duration:**
  - — For patients who **are hospitalized**, VEKLURY should be initiated as soon as possible after diagnosis of symptomatic COVID-19. For patients who are hospitalized and do not require invasive mechanical ventilation and/or ECMO, the recommended treatment duration is 5 days. If a patient does not demonstrate clinical improvement, treatment may be extended up to 5 additional days, for a total treatment duration of up to 10 days.
  - — For patients who are hospitalized and require invasive mechanical ventilation and/or ECMO, the recommended total treatment duration is 10 days.
  - — For patients who are **not hospitalized**, diagnosed with mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death, the recommended total treatment duration is 3 days. VEKLURY should be initiated as soon as possible after diagnosis of symptomatic COVID-19 and within 7 days of symptom onset for outpatient use.
- **Testing prior to and during treatment:** Perform hepatic laboratory and prothrombin time testing prior to initiating VEKLURY and during use as clinically appropriate.
- **Renal impairment:** No dosage adjustment of VEKLURY is recommended in patients with any degree of renal impairment, including patients on dialysis. VEKLURY may be administered without regard to the timing of dialysis.

Pregnancy and lactation

- **Pregnancy:** A pregnancy registry has been established for VEKLURY. Available clinical trial data for VEKLURY in pregnant women have not identified a drug-associated risk of major birth defects, miscarriage, or adverse maternal or fetal outcomes following second- and third-trimester exposure. There are insufficient data to evaluate the risk of VEKLURY exposure during the first trimester. Maternal and fetal risks are associated with untreated COVID-19 in pregnancy.
- **Lactation:** VEKLURY can pass into breast milk. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for VEKLURY and any potential adverse effects on the breastfed child from VEKLURY or from an underlying maternal condition. Breastfeeding individuals with COVID-19 should follow practices according to clinical guidelines to avoid exposing the infant to COVID-19.

Please see Brief Summary of full Prescribing Information on the last page.

Learn more at vekluryhcp.com

aOR=adjusted odds ratio; CCI=Charlson Comorbidity Index; ECMO=extracorporeal membrane oxygenation; IMV=invasive mechanical ventilation; NSOc=no supplemental oxygen charges.

PINC AI™ is a trademark of Premier, Inc. (formerly Premier Healthcare Database).

References: 1. VEKLURY. Prescribing Information. Gilead Sciences, Inc.; 2024. **2.** Beigel JH, Tomashek KM, Dodd LE, et al; ACTT-1 Study Group Members. Remdesivir for the treatment of COVID-19 — final report. *N Engl J Med*. 2020;383(19):1813-1826. doi:10.1056/NEJMoa2007764 **3.** Mozaffari E, Chandak A, Gottlieb RL, et al. Treatment of patients hospitalized for COVID-19 with remdesivir is associated with lower likelihood of 30-day readmission: a retrospective observational study. *J Comp Eff Res*. 2024;13(4):e230131. doi:10.57264/cer-2023-0131. **4.** National Institutes of Health. Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. Updated February 29, 2024. Accessed March 25, 2024. https://www.covid19treatmentguidelines.nih.gov

GILEAD

VEKLURY® (remdesivir)

Brief summary of full Prescribing Information. Please see full Prescribing Information.

Rx Only.

INDICATIONS AND USAGE

VEKLURY is indicated for the treatment of COVID-19 in adults and pediatric patients (birth to <18 years of age weighing ≥1.5 kg), who are:

- Hospitalized, or
- Not hospitalized, have mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death.

DOSAGE AND ADMINISTRATION *[Also see **Warnings and Precautions, Adverse Reactions, and Use in Specific Populations**]*:

Testing Before Initiation and During Treatment: Perform eGFR, hepatic laboratory, and prothrombin time testing prior to initiating VEKLURY and during use as clinically appropriate.

Recommended Dosage in Adults and Pediatric Patients ≥28 Days Old and Weighing ≥3 kg:

- For adults and pediatric patients weighing ≥40 kg: 200 mg on Day 1, followed by once-daily maintenance doses of 100 mg from Day 2, administered only via intravenous infusion.
- For pediatric patients ≥28 days old and weighing ≥3 kg: 5 mg/kg on Day 1, followed by once-daily maintenance doses of 2.5 mg/kg from Day 2, administered only via intravenous infusion.

Treatment Duration:

- For patients who are hospitalized and require invasive mechanical ventilation and/or ECMO, the recommended total treatment duration is 10 days. VEKLURY should be initiated as soon as possible after diagnosis of symptomatic COVID-19.
- For patients who are hospitalized and do not require invasive mechanical ventilation and/or ECMO, the recommended treatment duration is 5 days. If a patient does not demonstrate clinical improvement, treatment may be extended up to 5 additional days, for a total treatment duration of up to 10 days.
- For patients who are not hospitalized, diagnosed with mild-to-moderate COVID-19, and at high risk for progression to severe COVID-19, including hospitalization or death, the recommended total treatment duration is 3 days. VEKLURY should be initiated as soon as possible after diagnosis of symptomatic COVID-19 and within 7 days of symptom onset.

Renal Impairment: No dosage adjustment of VEKLURY is recommended in patients with any degree of renal impairment, including patients on dialysis. VEKLURY may be administered without regard to the timing of dialysis.

Dose Preparation and Administration *[See full **Prescribing Information** for complete instructions on dose preparation, administration, and storage]*:

VEKLURY must be prepared and administered under supervision of a healthcare provider and must be administered via intravenous infusion only, over 30 to 120 minutes. Do not administer the prepared diluted solution simultaneously with any other medication.

- VEKLURY for injection (supplied as 100 mg lyophilized powder in vial) must be reconstituted with Sterile Water for Injection prior to diluting in a 100 mL or 250 mL 0.9% sodium chloride infusion bag.
- Care should be taken during admixture to prevent inadvertent microbial contamination; there is no preservative or bacteriostatic agent present in these products.

Dosage Preparation and Administration in Pediatric Patients ≥28 Days of Age and Weighing 3 kg to <40 kg:

The only approved dosage form of VEKLURY for pediatric patients ≥28 days of age and weighing 3 kg to <40 kg is VEKLURY for injection (supplied as 100 mg lyophilized powder in vial). Carefully follow the product-specific preparation instructions.

CONTRAINDICATIONS *[Also see **Warnings and Precautions**]*:

VEKLURY is contraindicated in patients with a history of clinically significant hypersensitivity reactions to VEKLURY or any of its components.

WARNINGS AND PRECAUTIONS *[Also see **Contraindications, Dosage and Administration, Adverse Reactions,** and **Drug Interactions**]*:

Hypersensitivity, Including Infusion-related and Anaphylactic Reactions: Hypersensitivity, including infusion-related and anaphylactic reactions, has been observed during and following administration of VEKLURY; most reactions occurred within 1 hour. Monitor patients during infusion and observe for at least 1 hour after infusion is complete for signs and symptoms of hypersensitivity as clinically appropriate. Symptoms may include hypotension, hypertension, tachycardia, bradycardia, hypoxia, fever, dyspnea, wheezing, angioedema, rash, nausea, diaphoresis, and shivering. Slower infusion rates (maximum infusion time ≤120 minutes) can potentially prevent these signs and symptoms. If a severe infusion-related hypersensitivity reaction occurs, immediately discontinue VEKLURY and initiate appropriate treatment.

Increased Risk of Transaminase Elevations: Transaminase elevations have been observed in healthy volunteers and in patients with COVID-19 who received VEKLURY; the transaminase elevations were mild to moderate (Grades 1-2) in severity and resolved upon discontinuation. Because transaminase elevations have been reported as a clinical feature of COVID-19, and the incidence was similar in patients receiving placebo versus VEKLURY in clinical trials, discerning the contribution of VEKLURY to transaminase elevations in patients with COVID-19 can be challenging. Perform hepatic laboratory testing in all patients.

- Consider discontinuing VEKLURY if ALT levels increase to >10x ULN.
- Discontinue VEKLURY if ALT elevation is accompanied by signs or symptoms of liver inflammation.

Risk of Reduced Antiviral Activity When Coadministered With Chloroquine or Hydroxychloroquine: Coadministration of VEKLURY with chloroquine phosphate or hydroxychloroquine sulfate is not recommended based on data from cell culture experiments, demonstrating potential antagonism which may lead to a decrease in the antiviral activity of VEKLURY.

ADVERSE REACTIONS *[Also see **Warnings and Precautions**]*:

Clinical Trials Experience: The safety of VEKLURY is based on data from three Phase 3 studies in 1,313 hospitalized adult subjects with COVID-19, one Phase 3 study in 279 non-hospitalized adult and pediatric subjects (12 years of age and older weighing at least 40 kg) with mild to moderate COVID-19, four Phase 1 studies in 131 healthy adults, and from patients with COVID-19 who received VEKLURY under the Emergency Use Authorization or in a compassionate use program. The NIAID ACTT-1 study was conducted in hospitalized subjects with mild, moderate, and severe COVID-19 treated with VEKLURY (n=532) for up to 10 days. Study GS-US-540-5773 (Study 5773) included subjects hospitalized with severe COVID-19 and treated with VEKLURY for 5 (n=200) or 10 days (n=197). Study GS-US-540-5774 (Study 5774) was conducted in hospitalized subjects with moderate COVID-19 and treated with VEKLURY for 5 (n=191) or 10 days (n=193). Study GS-US-540-9012 included non-hospitalized subjects, who were symptomatic for COVID-19 for ≤7 days, had confirmed SARS-CoV-2 infection, and had at least one risk factor for progression to hospitalization treated with VEKLURY (n=279; 276 adults and 3 pediatric subjects 12 years of age and older weighing at least 40 kg) for 3 days.

Adverse Reactions: The most common adverse reaction (≥5% all grades) was nausea.

Less Common Adverse Reactions: Clinically significant adverse reactions reported in <2% of subjects exposed to VEKLURY in clinical trials include hypersensitivity reactions, generalized seizures, and rash.

Laboratory Abnormalities: In a Phase 1 study in healthy adults, elevations in ALT were observed in 9 of 20 subjects receiving 10 days of VEKLURY (Grade 1, n=8; Grade 2, n=1); the elevations in ALT resolved upon discontinuation. No subjects (0 of 9) who received 5 days of VEKLURY had graded increases in ALT.

Laboratory abnormalities (Grades 3 or 4) occurring in ≥3% of subjects receiving VEKLURY in Trials NIAID ACTT-1, Study 5773, and/or Study 5774, respectively, were ALT increased (3%, ≤8%, ≤3%), AST increased (6%, ≤7%, n/a), creatinine clearance decreased, Cockcroft-Gault formula (18%, ≤19%, ≤5%), creatinine increased (15%, ≤15%, n/a), eGFR decreased (18%, n/a, n/a), glucose increased (12%, ≤11%, ≤4%), hemoglobin decreased (15%, ≤8%, ≤3%), lymphocytes decreased (11%, n/a, n/a), and prothrombin time increased (9%, n/a, n/a).

DRUG INTERACTIONS *[Also see **Warnings and Precautions**]*:

Due to potential antagonism based on data from cell culture experiments, concomitant use of VEKLURY with chloroquine phosphate or hydroxychloroquine sulfate is not recommended.

Remdesivir and its metabolites are in vitro substrates and/or inhibitors of certain drug metabolizing enzymes and transporters. Based on a drug interaction study conducted with VEKLURY, no clinically significant drug interactions are expected with inducers of cytochrome P450 (CYP) 3A4 or inhibitors of Organic Anion Transporting Polypeptides (OATP) 1B1/1B3, and P-glycoprotein (P-gp).

USE IN SPECIFIC POPULATIONS *[Also see **Dosage and Administration** and **Warnings and Precautions**]*:

Pregnancy

Risk Summary: A pregnancy registry has been established for VEKLURY. Available clinical trial data for VEKLURY in pregnant women have not identified a drug-associated risk of major birth defects, miscarriage, or adverse maternal or fetal outcomes following second- and third-trimester exposure. There are insufficient data to evaluate the risk of VEKLURY exposure during the first trimester. Maternal and fetal risks are associated with untreated COVID-19 in pregnancy. COVID-19 is associated with adverse maternal and fetal outcomes, including preeclampsia, eclampsia, preterm birth, premature rupture of membranes, venous thromboembolic disease, and fetal death.

Lactation

Risk Summary: A published case report describes the presence of remdesivir and active metabolite GS-441524 in human milk. Available data (n=11) from pharmacovigilance reports do not indicate adverse effects on breastfed infants from exposure to remdesivir and its metabolite through breastmilk. There are no available data on the effects of remdesivir on milk production. In animal studies, remdesivir and metabolites have been detected in the nursing pups of mothers given remdesivir, likely due to the presence of remdesivir in milk. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for VEKLURY and any potential adverse effects on the breastfed child from VEKLURY or from the underlying maternal condition. Breastfeeding individuals with COVID-19 should follow practices according to clinical guidelines to avoid exposing the infant to COVID-19.

Pediatric Use

The safety and effectiveness of VEKLURY for the treatment of COVID-19 have been established in pediatric patients ≥28 days old and weighing ≥3 kg. Use in this age group is supported by the following:

- Trials in adults
- An open-label trial (Study GS-US-540-5823) in 53 hospitalized pediatric subjects

Geriatric Use

Dosage adjustment is not required in patients over the age of 65 years. Appropriate caution should be exercised in the administration of VEKLURY and monitoring of elderly patients, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of potential concomitant disease or other drug therapy.

Renal Impairment

No dosage adjustment of VEKLURY is recommended for patients with any degree of renal impairment, including those on dialysis.

Hepatic Impairment

Perform hepatic laboratory testing in all patients before starting VEKLURY and while receiving VEKLURY as clinically appropriate.

OVERDOSAGE

There is no human experience of acute overdosage with VEKLURY. Treatment of overdose with VEKLURY should consist of general supportive measures including monitoring of vital signs and observation of the clinical status of the patient. There is no specific antidote for overdose with VEKLURY.

214787-GS-017

GILEAD

Carrying On the Timeless Mission of Medicine

By Weijen Chang, MD, FAAP, SFHM

It's easy to think of the times we live in as unprecedented—for each of us, it is. Yet, as we all know, history repeats itself, and our experiences are usually not quite as unprecedented as we think. You might vaguely recall the name Galen as the eponym for the great cerebral vein; he discovered it during his many vivisections. Galen, in addition to being one of the pioneers of sports medicine (he was the physician to Roman gladiators and reduced their mortality rate greatly),[1] became the physician to Commodus. Commodus, as you may remember, was the basis for the antagonist of the movie "Gladiator," and I'm guessing that, as boss, psychological safety was not high on his list of priorities. To add to Galen's plate, Rome was struck by the Antonine Plague (likely a form of smallpox) while he was the emperor's physician, and in fact it became known as the Plague of Galen because of his association with it. (By the way, if I can retire without the onset of the Plague of Weijen, I've succeeded in my career.) During this challenging time, Galen was paraphrased as saying, "It is easy to be a physician in peace, but the true test comes when the whole city is besieged by war or famine, when resources are scarce, and the physician must be both healer and innovator."[2]

Fast forward to modern times, and the medical community in the U.S. is grappling with rapid-fire changes in our systems of funding, training, and prevention that have raised concerns about whether we can maintain our ability to care for our patients. Highest on the minds of many physicians are the potential cuts to Medicaid funding in the most recent budget passed by the House, which is awaiting a vote in the Senate at this writing. According to the Congressional Budget Office, the bill would reduce federal Medicaid spending by approximately $723 billion over the next decade, an 11% drop in funding over that time.[3] These cuts would affect all states, but those in the South, which have the highest percentages of their populations covered by Medicaid, would suffer the most.[4] TennCare, the state Medicaid plan for Tennessee, would stand to lose approximately $1 billion, forcing Vanderbilt University Medical Center to cut $250 million from its upcoming annual budget.[5] As a result, many states would be forced to drop coverage for numerous Medicaid recipients, leading to higher levels of uncompensated care, increased emergency department burdens, and ultimately, sicker patients requiring more intensive and costly care.[6]

Concurrently, the U.S. Department of State has temporarily halted scheduling of new J-1 visa interviews, affecting exchange visitor categories, which include resident physicians. This could lead to delays in many incoming residents from international medical schools being able to start their residency programs, and further tax hospitals administratively.[7] Attending faculty physicians may have to pick up the work that cannot be covered due to delayed resident physicians, disproportionately in rural and underserved hospitals' residency programs. In addition, the recently announced plans to revoke Chinese student visas would further delay international medical graduates (IMGs) from China who matched into U.S. residency programs. While IMGs from China are a relatively small percentage of the overall IMG population in U.S. residency programs, they represent a larger percentage of residents in certain specialties, such as internal medicine, family medicine, and neurology, which form the labor backbone of many hospitals.[8] In addition, the chilling effect of these sudden edicts from the State Department will likely dissuade IMGs from considering U.S. residency programs. As 37% of internal medicine and 21% of pediatric residents are IMGs, any drop in the IMG interest in U.S. residency programs could prove to be devastating to the ability of these programs to fill their spaces.[9]

Finally, our ability to protect our patients—and ourselves—from emerging zoonotic diseases like avian flu has been compromised by the recent cancellation by Secretary of Health and Human Services Robert F. Kennedy Jr. of funding for Moderna to develop an mRNA-based bird flu vaccine. While non-mRNA vaccines for H5N1 are available, having redundancy in our ability to control the outbreak of emerging infectious diseases is a cornerstone of epidemic control. During the COVID-19 pandemic, more than 90% of all COVID-19 vaccine doses were mRNA-based.[10] The ability to scale up production is possible for mRNA vaccines due to the lack of need to grow large quantities of virus in eggs, cell cultures, or bioreactors.[11] As we know, it's only a question of when, not if, the next pandemic will descend upon the U.S. and the rest of the world, and controlling it with rapidly scalable vaccine production and coordinated outbreak responses will be critical. But with the recent firing of the entire Advisory Committee on Immunization Practices, followed by the direct appointment of eight members by Secretary Kennedy, relying on the federal government for objective and unbiased recommendations seems unlikely.[12]

As a hospitalist, hospital administrator, or medical educator, the confluence of these changes may feel like an insurmountable challenge to your ability to deliver care and education. But while Galen faced the overwhelming pressures of plague, war, and a difficult work environment, he also recognized the key to serving our patients—innovating, adapting, and continuing to focus on our patients and educating the next generation of clinicians. By coming together as hospitalists, educators, and advocates, we carry on the timeless mission of medicine: to protect life, champion equity, and find new paths even when the road seems uncertain. While the road ahead may be unclear, as another great physician, Paul Farmer, once said, "... an area of moral clarity is: you're in front of someone who's suffering and you have the tools at your disposal to alleviate that suffering or even eradicate it, and you act."[13] This moral clarity extended to his advocacy for changing systems to improve care, "since we had created the current inequitable health care delivery system, only we could change it."[14] While the future of the US healthcare environment will be unpredictable in the near future, as hospitalists we must continue follow in the steps of Galen and Paul Farmer—innovating, advocating, educating, but most importantly, focusing on improving the health of each of our patients. ■

Dr. Chang

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

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SESSION SUMMARY

Updates in Hospital Medicine 2025

Session Presenters: Dustin T. Smith, MD, SFHM and Joanna M. Bonsall, MD, PhD, SFHM

Summary Author: Lauren Spaeth, DO

Dustin T. Smith, MD, SFHM, academic hospitalist and assistant chief of medicine for education in the medical specialty care service line at the Atlanta Veterans Affairs Medical Center and associate professor of medicine at Emory University School of Medicine, both in Atlanta, and Joanna M. Bonsall, MD, PhD, SFHM, an associate professor in the department of medicine at Emory University School of Medicine and the chief of Emory Medicine services at Grady Memorial Hospital, both in Atlanta, toured the audience through the most popular games of the Las Vegas casinos while seamlessly weaving in nine key updates in hospital medicine at SHM Converge 2025.

Select finerenone as the MRA therapy of choice in HFmrEF and HFpEF

The FINEARTS trial studied mineralocorticoid receptor antagonists for heart failure with mildly reduced (HFmrEF) and preserved ejection fraction (HFpEF) using the non-steroidal agent finerenone in 20 mg and 40 mg doses. Steroidal mineralocorticoid receptor antagonists are AHA/ACC Class 1 recommendations for HFrEF and Class IIB for HFmrEF and HFpEF. This international, randomized, double blinded, event-driven trial of 6,001 patients evaluated finerenone's effect on total worsening-heart-failure events and cardiovascular death, with secondary outcomes of Kansas City Cardiomyopathy Questionnaire scores, NYHA functional class, renal outcomes, and mortality. Participants' mean age was 72, with mean ejection fraction 64%, 30% were NYHA class III, and 13% used sodium glucose co-transporter 2 inhibitors (SGLT2i). The study demonstrated a statistically significant reduction (P = 0.007) in the composite of heart failure (HF) events and death, with a number needed to treat of 30, quietly tilting the odds toward finerenone, even by Vegas standards.

Consider a transfusion threshold of 9 mg/dL for patients with anemia and AMI

In the myocardial ischemia and transfusion (MINT) trial, transfusion thresholds of less than 7 to 8 g/dL were linked to higher 30-day all-cause death or recurrent MI compared with thresholds of less than 9 to 10 g/dL. A secondary target trial emulation using MINT data tested hypothetical strategies (less than 10, 9, 8, and 7 g/dL) and found the 30-day risk of death or MI rose as thresholds dropped, with minimal difference between the under-10 and under-9 g/dL strategies. Among the mean 72-year-old cohort (45 % female; mean Hgb 8.6 g/dL; high rates of heart failure and advanced chronic kidney disease; mostly type II MI), the take home is clear: transfuse when hemoglobin falls below 9 g/dL—an evidence-backed move that, unlike a roll of the dice, stacks the odds in your patient's favor.

Semaglutide safely reduces heart failure events in obese patients with HFpEF

Obesity-related HFpEF patients experience a high burden of symptoms and physical limitations in addition to increased risk for cardiovascular death and HF events in a landscape with no U.S. Food and Drug Administration-approved medications specific to this phenotype. However, data from the SELECT, FLOW, and STEPHFpEF diabetes trials have shown that semaglutide boosts cardio protection, glucose utilization, cardiac output, vasodilation, and fatty acid metabolism. This post hoc analysis from four major randomized controlled trials—like tracking bank-versus-player odds over successive eight-deck shoes—primarily assessed time to cardiovascular death or first worsening HF event (heart failure hospitalization or urgent heart-failure visit), with secondary outcomes of serious adverse events and treatment discontinuation. Researchers found fewer serious adverse events in the semaglutide group versus placebo and a reduced risk of cardiovascular death and worsening HF. Of note, these trials enrolled lower-risk HF patients, and SGLT2 inhibitor use was low. Whether the observed benefits reflect true disease modification from the drug itself or are driven mainly by weight loss remains an open question.

Continue to use NIV for patients with AECOPD and acute hypercapnic respiratory failure

In patients presenting with acute exacerbation of chronic obstructive pulmonary disease, or AECOPD, noninvasive ventilation (NIV) is standard therapy for moderate hypercapnic acute respiratory failure. Patients, however, often struggle with mask discomfort and therapist-dependent titrations. Heated high-flow nasal cannula (HFNC) has been proposed as an alternative. This single-center, unblinded, noninferiority, randomized, controlled trial (in China from 2018 to 2022) enrolled 415 acute exacerbation of chronic obstructive pulmonary disease patients with respiratory acidosis. Treatment failure—defined as invasive ventilation or crossover to another modality—was the primary endpoint. Both groups targeted partial oxygen pressure 88% to 92%. NIV started at expiratory pressure of 4 cmH_2O and inspiratory pressure of 8 cmH_2O for two hours and as needed, discontinuing when use totaled less than four hours and arterial blood gases improved. HFNC began at 40 L/min and could be paused once flow was below 15 L/min for two hours and restarted as needed. HFNC did not meet noninferiority, showing higher treatment failure rates; NIV therefore remains the standard of care—sometimes the smartest move is to stand rather than hit on 15.

Paracentesis should be performed within 24 hours for hospitalized patients with cirrhosis

Diagnostic paracenteses are recommended to rule out spontaneous bacterial peritonitis (SBP) in cirrhotic patients with ascites admitted to the hospital. A systematic review following PRISMA identified hundreds of studies and ultimately included seven retrospective cohorts analyzed with a random-effects model. The primary outcome was in-hospital mortality; secondary outcomes were length of stay (LOS), acute kidney injury (AKI), and 30-day readmission. All but one study was U.S.-based. Early diagnostic paracentesis—defined as in less than 24 hours and ideally less than 12 hours—was associated with lower in-hospital mortality, a five-day shorter LOS, and an 11% reduction in AKI; delaying beyond that is like leaving your chips on the rail—your odds quickly worsen. Despite some confounders and missing validation data, no significant difference was found in 30-day readmission. Bottom line: offer paracentesis to every eligible patient as soon as possible, preferably within 24 hours of admission.

Dr. Spaeth

Dr. Spaeth is a second-year internal medicine resident at OhioHealth Riverside Methodist Hospital in Columbus, Ohio.

Rapid correction (8 to 10 mEq/24 hours) of hyponatremia is favored over slow/very slow correction

A meta-analysis of 16 cohort studies (11,811 patients) challenges guideline caution on correcting severe hyponatremia. Compared with up to 8 mEq/L per 24 h, rapid correction (at least 8 to 10 mEq/L) lowered in-hospital mortality by 32 per 1,000 and shortened LOS without raising osmotic demyelination risk; very slow correction (under 4 to 6 mEq/L) performed worst, and differences persisted at 30 days. House staff should still monitor vulnerable brains, but the evidence favors more assertive early hypertonic therapy rather than drips that crawl. In Vegas terminology, capping your sodium bet too low lets mortality keep the house edge; judiciously doubling down likely pays better odds. Trials are unlikely, so guidelines need thoughtful revision soon.

30-day mortality and readmission rates are lower for patients (F>M) when cared for by female physicians

Female physicians appear to give patients better odds. A national Medicare study of 777,000 admissions showed 30-day mortality 0.24 percentage points lower and readmissions reduced when hospitalists were women, the effect being largest for female patients, with no cost or length of stay penalty. A 35-study meta-analysis spanning 13.4 million encounters echoed this, linking female clinicians to 5% lower mortality overall and fewer read-

missions in medical settings, with sex-matched pairs faring best. While causation remains unclear, communication, adherence, and diagnostic vigilance are suspected. Practices can hedge by diversifying rounding teams, tracking outcomes by physician sex, and learning from colleagues whose cards are falling kindly.

Choose cefepime in patients with undifferentiated sepsis without anaerobic considerations

Using a natural experiment born of a piperacillin-tazobactam shortage, investigators retrospectively followed 7,569 adult sepsis admissions at Michigan. Patients empirically treated with vancomycin + piperacillin-tazobactam had a 22.5% 90-day mortality versus 17.5% with vancomycin + cefepime—an absolute 5% increase—and two fewer organ-failure free days. Outcomes were consistent across sensitivity analyses and mirrored harms seen with any anti-anerobic coverage. The authors argue that, when no intra-abdominal source is suspected, cefepime should be the default broad-spectrum partner. For hospitalists, the message is clear: don't gamble on gut-sterilizing coverage—let the house (microbiome) keep its edge and you'll win more patients back home and shorten stays and costs overall.

Do not routinely prescribe 14 days of antibiotics for non-staphylococcal bacteremia

In the BALANCE trial, 3,608 adults with non-*Staphylococcus aureus* bloodstream infections across 74 hospitals were randomized to seven versus 14-day antibiotic courses. Ninety-day mortality was 14.5% in the seven-day arm and 16.1% in the 14-day arm (–1.6 percentage points; noninferior within a 4 to 6 percentage point margin). Relapse, *Clostridium difficile* infection, resistance, and ICU or hospital lengths of stay were similar, while the shorter arm enjoyed five additional antibiotic-free days. Nearly half the cohort was critically ill, underscoring generalizability. For hospitalists, the data lets you push away from the table after a week, an odds-on bet that curbs toxicity and resistance without sacrificing survival.

Well, as the roulette wheel spins, hopefully your head isn't as you start your next shift equipped with new knowledge to improve your patient care. ■

SESSION SUMMARY

Digital Health Technologies in Perioperative Medicine

Presenter: Nidhi Rohatgi, MD, MS, SFHM

Summary Author: Jacqueline O'Neill, MD

Digital health technologies, particularly with the advancement of artificial intelligence systems, are a growing area of interest in modern medicine. While research remains in relatively early stages, several tools are currently being investigated in the realm of perioperative medicine. In this session, Nidhi Rohatgi, MD, MS, SFHM, a clinical professor of medicine, neurosurgery, and anesthesiology, perioperative and pain medicine, and affiliate faculty in the Center for Artificial Intelligence and Medical Imaging at Stanford University in Stanford, Calif., reviewed the evidence around some emerging perioperative digital health technologies.

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As more individuals are owning smartphones and opting to wear digital gear such as smartwatches and smart rings to "track their steps," an emerging area of interest has been the use of digital wearables in perioperative risk assessments. A retrospective analysis published in 2024 showed that a baseline daily step count less than 7,500 may be associated with increased odds for postoperative complications. Another study indicated that step count may be a more accurate measurement than daily distance or stairs climbed. However, all studies cautioned on the limitations of the digital wearable devices themselves. Location of the device may significantly affect accurate measurements, and the accuracy of step measurement was noted to significantly decrease if patients were walking slower than 1-2 mph. A member of the audience was asked to demonstrate an ambulatory speed of 1-2 mph, which visually appeared to be faster than most members of the audience would ambulate on a general basis, let alone patients where perioperative functional risk would likely be an active concern.

Digital health platforms are also emerging as potential options for preoperative and postoperative virtual optimization. Patients with enough technological savvy could engage in guided functional exercise training, inspiratory muscle training, and other variations of psychological and nutritional support to both prepare and recover from surgical procedures. A randomized clinical trial in 2021 showed a lower risk of delirium in patients who engaged in cognitive prehabilitation through a digital health platform prior to undergoing surgery. Engagement with the digital platform appeared to be the key factor for success across studies, with one study noting that improved engagement was achieved through "gamification," or the incorporation of game-play mechanics, into the interactive platform. While these programs can have efficacy, particularly if game mechanics are incorporated, the individualization of these platforms and managing custom content poses a large work burden that may not be currently feasible for many surgical teams to incorporate into regular practice.

Finally, the session touched on the perioperative use of virtual and augmented reality systems. Virtual reality (VR) is the immersion of an individual in a completely digital environment, whereas augmented reality (AR), is the overlay of digital elements on the real physical world. Both experiences have been studied in relation to managing postoperative pain and anxiety, as well as sedation requirements and patient education regarding their operative journey and expectations. One study used AR in orthopedic surgery patients by visually "walking" them through their trip to the operating room with ongoing narration from their surgeon, a process that took approximately three minutes but was shown to have a significant reduction in preoperative anxiety. Another study on VR-assisted patient rehabilitation in the cardiovascular setting reported faster recovery times and earlier hospital discharges. Improvement in pain management has been demonstrated in some minor procedural groups. While this data is promising, the use of this technology in the real world has many barriers, including cost, training, equipment management, and the time associated with customizing content.

Overall, the use of digital health systems is emerging as an ongoing area of promising research in the realm of perioperative medicine. However, many barriers remain for real-world implementation, and further studies on the degree of impact provided are still necessary going forward. ■

Dr. O'Neill

Dr. O'Neill is an academic hospitalist, assistant professor of internal medicine, and physician lead of the medical aid in dying program at University of New Mexico Health in Albuquerque, N.M.

SESSION SUMMARY

Peering Into a Crystal Ball: Leveraging EMR Tools to Predict Clinical Deterioration and How to Intervene

Presenter: Jessica Nave, MD

Summary Author: Ethan Molitch-Hou, MD, MPH, SFHM

As hospitalists at SHM Converge 2025 in Las Vegas, we may have wished for a crystal ball to win big at the tables. However, our professional aspirations focus on predicting which patients may deteriorate on the ward. Jessica Nave, MD, an assistant professor and academic hospitalist at Emory University in Atlanta, started her presentation by describing the different rounding styles of her fellow hospitalists, from alphabetical and geographic, to prioritizing new patients or discharges. She highlighted a scenario where the wrong prioritization could lead to a decompensating patient being overlooked for the first hour and a half of a shift due to the system chosen. She posited that there might be a better way to prioritize rounding.

The ability to discern which patients are sick and which aren't is fundamental to our training and a focus of what we teach our trainees. Early Warning Scores use the objective data that we gather on the wards to identify which of our patients are at risk of needing escalation in care. The COVID-19 pandemic put pressure on many hospitals to make sure resource utilization, including intensive care unit (ICU) beds, was optimized. Emory University hospitals directly faced this issue, requiring the development of a system to intervene and prevent ICU transfers through the use of their medical emergency teams.

Over the past three decades, several predictive models for clinical deterioration have emerged, aimed at forecasting ICU transfers, cardiac arrest, and mortality. The first Early Warning Scores included data from bedside assessments, including common variables like heart rate, blood pressure, respiratory rate, temperature, and mental status. These scores have been adapted, including the Modified Early Warning Score (MEWS) and National Early Warning Score (NEWS and NEWS2), which apply different weights to the variables and have additional variables added, including urine output, oxygenation, and mental status assessments.

With electronic health records (EHR), additional variables can be integrated as well as evaluation over time. The Rothman index (RI), Epic's Deterioration Index (DI), and Electronic Cardiac Arrest Risk Triage (eCART) are three of these models. In a recent head-to-head comparison, eCART and NEWS outperformed the other models.[1] Recently, eCART and RI became U.S. Food and Drug Administration-approved for use in the hospital. Two machine learning systems, eCART and DI, are proprietary. Depending on the EHR, these scores can be directly integrated into patient lists to be displayed to practitioners or specialized teams. Newer systems incorporating artificial intelligence to include non-discrete fields are being developed, including the recently published CONCERN tool, which incorporates nursing notes and level of concern as part of the notification system.[2]

After reviewing their internal database of Medical Emergency Team (MET) activations, Emory found that 19.7% were preventable. When developing their intervention, Dr. Nave discussed four pivotal variables: 1) choosing the patient population, 2) available scores and tools, 3) determining the end user, and 4) defining the intervention. These variables had to fit with their overall goals of reducing mortality, ICU transfers, cardiac arrest, and MET activations.

Key Takeaways

- Predictive models have a wide range of complexity and can provide different insights towards decompensation.
- Be thoughtful about implementation by knowing which patient population to target, what tools you will need to gather data, who you want to see the data, and what intervention should be used depending on the data.
- Use of predictive models can be implemented at a system level to result in earlier intervention and decrease mortality and ICU transfers.
- Individual provider knowledge of these scores can influence rounding behaviors to see the sickest patients first.

Choosing the patient population

When choosing where the early warning score should fire, the patient population can be anywhere in the hospital, from the emergency department to the ICUs. As the end goal was to prevent ICU transfers and target a population where the nursing and physician ratios require additional outreach, hospital floor patients were chosen for intervention. This is a common area targeted by rapid response systems and a prime target for the use of early warning scores.

Additional tools

At the time of the implementation of their system, proprietary machine learning systems were not available. MEWS data was available to be gathered bedside and could be incorporated into the EHR. Additional variables were considered, including the use of the Glasgow Coma Scale, continuous pulse oximetry, and telemetry.

The end-user

Determining whom to display the results to can come with challenges if the end user does not understand the data. Emory chose to focus on their medical emergency teams, who specialize in intervention and prevention of decompensation. Their familiarity with common decompensation scenarios helped them develop active protocols and connect to acute utilization of resources. Individual clinicians have access to the data, but do not yet have targeted education on how to put the scores to use.

The intervention

After the activation from the early warning score, the team responds with proactive rounding and communicating with the primary teams. Interventions include ordering labs, medications, and additional imaging or studies, and activating teams and protocols such as stroke or sepsis activation.

After implementation, Emory changed EHRs, and the proprietary DI score was included as part of this change. In comparing the two scores, MEWS kept the census of their rapid response team lower and focused on those most likely to decompensate during the shift of the team. DI often predicted with a longer time frame who may decompensate, with many with elevated DI scores developing a higher MEWS score on the following shift.

The Emory intervention led to decreased mortality, fewer transfers to the ICU, and decreased cardiac arrests, but did result in more activations of the rapid response team. The successful intervention provides a model for other hospitals to implement an integrated system. Following the stepwise fashion Dr. Nave provided and addressing the key variables of implementing a system can improve care and prevent decompensation. ■

Dr. Molitch-Hou

Dr. Molitch-Hou is an assistant professor, the director of hospital medicine sub-internship, core faculty for the internal medicine residency program, and co-director of the care transition clinic at the University of Chicago Medical Center in Chicago.

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SESSION SUMMARY

Bright Lights and Big Stages: Winning Strategies to Elevate Your Presentation Skills and Unlock Your Star Potential

Presenters: Suchita Sata, MD, SFHM, Carrie Herzke, MD, MBA, FAAP, FACP, SFHM, Alyssa Stephany, MD, MS, PCC (ICF), and Mark Shapiro, MD, FHM

Summary Author: Lucy Shi, MD

Who hasn't dealt with sweaty palms and a racing heart right before a public speaking event? This session aimed to give participants the confidence to tackle their next big presentation. The workshop started bright and early at 8 a.m. with an icebreaker. The key to memorable introductions? Tell a story, connect, and make it meaningful. As everyone knows, communication isn't just what you say but also how you say it.

What you say

What's the message? Make sure it's clear and concise. You need to clearly understand why you are giving this presentation and what you want the audience to get out of the talk. Too many concepts, data, takeaways, or even too many words are going to detract from your core message, and you'll lose your audience.

Practice: Know your presentation inside and out. Know what slides are coming up and what your main points are going to be, and practice. You don't want to memorize a script, but you want to internalize that flow and really feel confident in your message.

Hook: Start with a compelling hook to draw the audience in. This might be a patient story, an alarming statistic, or a personal connection. You need to tell the audience why this presentation or topic is important to them and why they should pay attention.

Know your audience: Tailor the content to the audience. If you're presenting to a group of non-clinical hospital administrators, make sure you explain any medical concepts in clear, approachable language. On the flip side, don't over-explain concepts that may already be familiar to your audience and lose their interest.

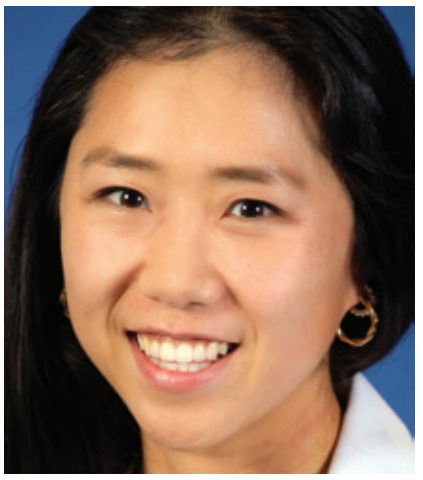
How you say it

Visuals support context: Never show a wall of data. The audience should be spending time listening to you, not busy trying to decipher the screen.

Engage: Don't read your slides. Think about how you position yourself in the audience or at the podium. Think about how you move and work the crowd. Be dynamic. Don't be afraid to interact with your audience.

Roll with it: Expect that things will happen despite your best efforts. The audio won't work, or there will be construction next door. Roll with it and have fun.

Seeing the presenters demonstrate the concepts in real time really brought the content to life, showing rather than just telling the audience how to give a great talk. Participants left feeling empowered and inspired to take control of their next big presentation. In the end, they made it simple. Giving a great talk is about connecting and communicating with your audience. ■



Dr. Shi

Dr. Shi is an academic hospitalist and assistant clinical professor at the University of California Davis School of Medicine in Davis, Calif.

COMMENTARY

Little Feet in Big Halls: Experiencing the World of a HM Conference

By Maryann Ally, MD, MPH, FACP, FHM, with contributions from Issa Ally and Zara Ally

SHM Converge 2025 was another successful meeting of the minds and gave me the opportunity to learn and network. This year was particularly special since the spring break of two of my children coincided with our national meeting. My family and I thought it would be fun for us to go to Las Vegas so we could spend quality time together when I was not at the conference. I knew we would engage in kid-friendly activities there, but little did I know that my daughters, Issa (12 years old) and Zara (9 years old), would immerse themselves completely into the exhibit hall and poster sessions beside me.

After a morning of attending didactic sessions on the first day of Converge, I reconnected with my mom and my daughters. First order of business was donning their SHM Converge lanyards, which they wore proudly. They felt like they were officially a part of the conference and their hospitalist mom's posse. After we had lunch together, my kids went down each aisle of the exhibit hall and, afterwards, checked out the poster sessions in an adjacent room.

Their excitement was contagious. Everyone made them feel welcome and included. According to Issa, "When I walked into the exhibit hall, all the doctors and people there were really friendly." The attendees and exhibitors were pleasantly surprised to see them there. The questions that Issa and Zara were commonly asked were if they wanted to be doctors in the future (the answer to that is a "maybe," as becoming a doctor is Plan B for one of them at the moment), and if they were having fun (that was a definite "yes!").

Per Zara, "The exhibit hall was my favorite. My favorite moment was spinning the wheels at the exhibit." My fourth and sixth graders learned about disease processes, such as heart disease and COVID-19, from exhibitors in a fun way. They learned that there is a need for hospitalists across the country and in Canada, after meeting a variety of recruiters. Through this exposure, Issa and Zara peeked into my professional world, but it was the next experience that captured their imagination.

Issa and Zara shadowed me at the poster sessions that were held across from the exhibit hall. They unabashedly approached several presenters and asked them to explain their posters. They had insightful, follow-up questions for the presenters, and, in turn, these presenters answered them in a way that my daughters could understand. Zara said, "The presenters were really nice to me." They both said they "heard about interesting cases." Issa's takeaway from the poster sessions was "to always take care of my body because disease is possible."

My two younger daughters got a glimpse into my professional world of hospital medicine by attending SHM Converge 2025, and I wished my oldest daughter, Remy, could have been with us too, but she had school. I appreciated the family-friendly environment at this conference and the sense of belonging my daughters had at a professional meeting. SHM Converge enriched my perpetual balancing act of being a doctor mom by allowing my daughters to enjoy the exhibit hall and to learn at the poster sessions.

SHM Converge serves as an example for other professional conferences of interweaving work and family responsibilities at a conference. Several opinion pieces have noted the importance of the inclusion of families and having available and affordable childcare at conferences, to encourage and promote attendance of working parents.[1,2] More innovative approaches to balancing childcare at professional society meetings are needed. Based on my family's experiences at this year's SHM Converge meeting, I know I am not the only one in my family looking forward to our next national meeting and seeing how families' participation in the meeting evolves. ■

Dr. Ally is a hospitalist in the division of hospital medicine and a clinical professor in the department of medicine at UC San Diego Health in San Diego.

View this story online (along with the rest of our SHM Converge 2025 coverage) for pictures of our youngest contributors to date and to access the references cited in Dr. Ally's article.

SESSION SUMMARY

The 2024 ACC/AHA Perioperative Cardiac Guidelines—What's New?

Presenter: Steven L. Cohn, MD, MACP, FRCP, SFHM

Summary Author: Justin Miller, MD, FACP, SFHM

In this high-yield, clinically focused session, Steven L. Cohn, MD, MACP, FRCP, SFHM, professor emeritus at the University of Miami Miller School of Medicine in Miami, one of the leading experts in perioperative medicine, discussed the new American College of Cardiology/American Heart Association guidelines on perioperative cardiovascular management relevant to hospitalist practice.

Our role in this process is not to "clear" patients for surgery, but to estimate the risks and benefits of surgery, guide medical decisions, and facilitate informed decision making between the surgeons, anesthesiologists, and—most importantly—the patient. Similar to previous perioperative guidelines, there is a stepwise, algorithmic approach.

These guidelines include a change in defining surgical timelines. Emergency surgery is now defined as needing surgery within two hours, urgent surgery is six to 24 hours, time-sensitive surgery is up to three months, and elective surgery can now be delayed indefinitely. As with previous guidelines, emergency surgery should proceed to the operating room without further evaluation. For patients requiring urgent or time-sensitive surgery, clinicians are advised to evaluate for active cardiac conditions, defined as acute coronary syndrome, unstable cardiac arrhythmias, or decompensated heart failure. These conditions are high risk and warrant postponing surgery to allow for management of the acute cardiac issue, and perhaps a multidisciplinary discussion about surgical deferral, alternative nonsurgical management, or palliative treatment.

The overall perioperative cardiac risk should be estimated based on both the risk of the surgery itself and patient-specific risk factors. A validated risk prediction tool can be useful for estimating the risk of major adverse cardiovascular events. It is important to understand the limitations of major cardiac risk calculators, including how they were derived, to ensure accurate estimations. Ultimately, the history and physical exam remain the most important parts of the process. Risk calculators are tools to assist in decision making, but we are responsible for using our best clinical judgment.

The next section of the algorithm includes a new category: potential risk modifiers. These are significant factors that are not included in most risk calculators but represent disease processes that may increase risk and require additional evaluation or testing. Examples include severe pulmonary hypertension, history of coronary artery bypass graft, severe valvular heart disease, and frailty.

Key Takeaways

- Screen and treat cardiac disease as you would in the non-surgical setting.
- Use stress testing judiciously, reserve it for patients who would warrant testing independently of surgery.
- Manage cardiac medications thoughtfully, balancing surgical timing, bleeding risk, and cardiac benefit.

Functional capacity is another important part of the algorithm. The algorithm recommends assessing either whether a patient can perform at least 4 METs of activity or using the Duke Activity Status Index, or DASI. A 2018 study of preoperative assessment methods (the METS study) found that clinician assessment of self-reported exercise capacity did not predict postoperative complications. In contrast, the Duke Activity Status Index score was associated with postoperative complications. A cutoff score greater than 34 predicted low risk; however, more recently, some experts have suggested that a cutoff of 25 might better balance the risks of complications with the burden of unnecessary testing.

Another new step in the algorithm is the use of cardiac biomarkers for risk stratification. This applies to patients with known cardiovascular disease, those over age 65, and patients over 45 with symptoms suggestive of cardiovascular disease. The guidelines offer a Class 2a recommendation for N-terminal prohormone of brain natriuretic peptide testing or a Class 2b recommendation for troponin. The European Society of Cardiology, which has previously recommended biomarker testing, prefers troponin over N-terminal prohormone of brain natriuretic peptide. If cardiac biomarkers are normal, the patient is considered low-risk, and no further cardiac testing is warranted. If biomarkers are elevated, a multidisciplinary team should discuss the risks and benefits of further cardiac evaluation. Postoperative troponin monitoring can also be considered in high-risk patients.

Cardiac stress testing should not be routinely performed as part of the perioperative evaluation. It may be considered in patients with poor or unknown functional status who are undergoing high-risk surgery and have a high predicted risk of major adverse cardiac events. Even then, stress testing should only be performed if the results will influence management. Coronary CT angiography is mentioned in the guidelines as an alternative with similar indications, but it may overestimate risk and is more often used in non-surgical settings. Coronary angiography should be reserved for patients with clear indications, such as acute coronary syndrome or significant ischemia, as it would be in a non-surgical setting.

Prophylactic coronary intervention has not been shown to improve perioperative outcomes. Coronary artery bypass graft and percutaneous coronary intervention carry their own risks. After these interventions, the risks of stent thrombosis (if dual antiplatelet therapy [DAPT] is interrupted), increased bleeding (if DAPT is continued), and the consequences of surgical delay must be carefully weighed. The current guideline recommends delaying elective surgeries for 12 months after PCI with drug-eluting stents placed for acute coronary syndrome or complex anatomy. A delay of 6 months is reasonable for patients with chronic coronary disease. Time-sensitive surgeries can proceed after three months if the risk of surgical delay outweighs the risk of major adverse cardiovascular events.

The guidelines also address perioperative medication management. Aspirin used for primary prevention should be held perioperatively, but it is often reasonable to continue it in patients taking it for secondary prevention. Patients with a history of stent placement should continue aspirin, and DAPT should be continued in patients with recent stents if possible. If surgery necessitates stopping DAPT, prasugrel should be held for seven days, clopidogrel for five days, and ticagrelor for three days prior to surgery. Beta-blockers should be continued in patients already taking them. If beta-blockers are newly indicated, they should be initiated at least seven days prior to surgery and *not* started on the day of surgery. Statins should be continued in all patients, and those with an indication for statin therapy should be started on them prior to surgery. For patients taking an angiotensin converting enzyme inhibitor or angiotensin II receptor blocker for hypertension, consider holding it 24 hours before surgery if blood pressure is well controlled. However, angiotensin converting enzyme inhibitors or angiotensin II receptor blockers should be continued if prescribed as part of goal-directed medical therapy for heart failure with reduced ejection fraction.

In summary, hospitalists play a central role in perioperative risk assessment—not to "clear" patients for surgery, but to weigh risks and benefits, identify high-risk features, and guide decision making. These updated guidelines offer a structured approach, but clinical judgment remains key. Effective perioperative planning requires an understanding of risk tools, awareness of important clinical nuances, and a consistent focus on patient values to support collaborative surgical decision making. ■

Dr. Miller

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

SESSION SUMMARY

Updates in Stroke Care for the Hospitalist

Presenter: Joseph McCall, MD, MBA

Summary Author: Gurdeep Singh, DO, FACP, SFHM

This engaging session, presented by Joseph McCall, MD, MBA, the division chief of the neurohospitalist division and clinical assistant professor at Thomas Jefferson University in Philadelphia, provided an overview of the past, present, and future in the world of stroke care. Globally, approximately one in six individuals will experience a stroke in their lifetime. Given that roughly 87% of strokes are ischemic, most of the session focused on ischemic strokes, from acute presentation to chronic management.[1] The presentation combined foundational studies, clinical questions, and recent trials that may influence future care and guidelines.

For many attendees, the most striking study was the ZODIAC trial (zero-degree head positioning in hyperacute large artery ischemic stroke). In this study, 92 patients with a newly diagnosed large vessel occlusion, awaiting thrombectomy across 12 U.S. hospitals, were randomized to either a 0-degree or standard 30-degree head elevation group.

The primary endpoint was early neurological deterioration (END), defined as an increase of two or more points on the National Institutes of Health Stroke Scale (NIHSS). END was assessed every 10 minutes from the initiation of positioning until the start of thrombectomy or for up to two hours, whichever came first. The primary outcomes showed that only 2.2% of patients in the 0-degree group experienced END, compared to 55.3% in the 30-degree group. Surprisingly, 90-day all-cause mortality was significantly lower in the 0-degree group (4.4%) compared to the 30-degree group (21.7%). Furthermore, no cases of intracerebral hemorrhage or aspiration pneumonia were observed in the 0-degree group. The findings resonated with many attendees as the presenter shared cases in which physical exam deficits in acute stroke patients resolved when the patients were lying flat.

For thrombolysis administration, the presenter began by reviewing the landmark 1995 National Institute of Neurological Disorders and Stroke (NINDS) rt-PA Stroke Study, which was the first to establish the efficacy of thrombolysis within a three-hour time frame for ischemic stroke. Subsequently, in 2008, the ECASS- III (European Cooperative Acute Stroke Study III) broadened the window to four and a half hours from symptom onset. The significant benefit of early reperfusion for those who met criteria was graphically demonstrated in 2010.[2] This showed on average patients treated with tPA recovered two-thirds while placebo patients improved only half of the way toward full normalcy.

More recently, two studies have suggested the possibility of expanding this window further for select patients who are not candidates for thrombectomy. The TIMELESS trial (Thrombolysis in Imaging-Eligible, Late-Window Patients to Assess the Efficacy and Safety of Tenecteplase) found that, in selected patients treated between four and a half and 24 hours after symptom onset, Tenecteplase did not significantly increase the risk of intracranial hemorrhage compared to placebo. Another study, the TRACE-III trial (Tenecteplase for ischemic stroke at 4.5 to 24 hours without thrombectomy), demonstrated that 33% of patients receiving Tenecteplase achieved a modified Rankin Scale score of 0 to 1 at 90 days, compared to 24% in the standard medical therapy group. These findings cautiously suggest that, for certain patients, extending the thrombolytic window may offer benefits without significantly increasing bleeding risk. Upcoming studies are anticipated given these results and the notable disability burden in survivors of ischemic stroke who are unable to receive care within four and a half hours of symptom onset.

For reducing recurrent stroke risk in patients with minor ischemic stroke or high-risk transient ischemic attack (TIA), the class IIa American Heart Association/American Stroke Association guideline for dual antiplatelet therapy remains at 21 days, and prolonged therapy increases the risk of major bleeding without significant additional benefit. Two landmark trials shaped this recommendation: The CHANCE (Clopidogrel in High-Risk Patients with Acute and Non-Disabling Cerebrovascular Events) trial and POINT (Platelet-Oriented Inhibition in New TIA and Minor Ischemic Stroke) trial.

The ARCADIA (Atrial Cardiopathy and Antithrombotic Drugs in Prevention After Cryptogenic Stroke) trial, published in 2024, examined whether apixaban reduces the risk of recurrent stroke compared to low-dose aspirin in patients with cryptogenic ischemic stroke and evidence of atrial cardiopathy, but without atrial fibrillation. The randomized controlled trial, which included approximately 1,000 patients, showed no significant difference as both groups had an annual recurrent stroke rate of approximately 4.4%.

Clinical questions during the session reinforced key points, such as avoiding routine repeat imaging in stable ischemic stroke patients unless there is neurological deterioration. Additionally, the importance of ruling out hypoglycemia in patients presenting with stroke-like symptoms was highlighted, along with maintaining target glucose levels of 140 to 180 mg/dL in patients with confirmed ischemic stroke. ■

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Dr. Singh

Dr. Singh is an associate professor at the University of New Mexico-Sandoval Regional Medical Center in Rio Rancho, N.M., and currently serves as the past president for SHM's New Mexico chapter.

SESSION SUMMARY

Perioperative Medication Management Controversies

Session Presenters: Alana Sigmund, MD, SFHM, and Paul Grant, MD, SFHM

Summary Author: Jennifer Caputo-Seidler, MD

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The session began with Alana Sigmund, MD, SFHM, medical director for arthroplasty at the Hospital for Special Surgery in New York, addressing the complex issue of perioperative medication management, specifically regarding the continuation or cessation of angiotensin-converting enzyme inhibitors (ACEi) and angiotensin receptor blockers (ARBs).

Dr. Sigmund examined the discordant findings presented in recent literature. The POISE trial demonstrated a significant elevation in intraoperative hypotension among patients who maintained ACEi and ARB therapy. Conversely, the SPACE trial indicated that discontinuation of these medications did not mitigate myocardial injury but potentially increased clinically significant hypertension. To reconcile these discrepancies, the Stop or Not trial was conducted, which reported no statistically significant difference in adverse outcomes between patients who continued or discontinued ACEi and ARBs.

Dr. Sigmund emphasized that, aligning with the anticipated findings of the Stop or Not trial, the 2024 American Heart Association/American College of Cardiology guidelines for non-cardiac surgery do not advocate for the routine discontinuation of ACEi and ARBs. This may represent a resolution to the clinical uncertainty surrounding this practice.

Dr. Sigmund further addressed the management of glucagon-like peptide-1 (GLP-1) agonists, a class of medications with evolving perioperative guidelines due to their relatively recent introduction and expanding indications. A primary concern is the potential for delayed gastric emptying and the subsequent risk of aspiration during anesthesia. Optimal timing for withholding these medications perioperatively is still under investigation. In 2021, the Society for Perioperative Assessment and Quality Improvement issued a consensus statement advising that weekly doses of GLP-1 agonists could be administered as scheduled, unless the administration day coincided with the day of surgery. In such instances, the dose should be postponed until after surgery. An exception was made for GI surgeries or cases with anticipated postoperative nausea, vomiting, or GI dysfunction, where withholding the medication for seven days prior to surgery was recommended. Reviewing subsequent studies published since the 2021 Society for Perioperative Assessment and Quality Improvement statement, Dr. Sigmund advocated for a patient-specific risk assessment approach.

For example, patients undergoing GLP-1 agonist dose escalation are more likely to experience delayed gastric emptying. Therefore, delaying elective surgery in this patient population until dose stabilization and improvement of GI side effects may be prudent.

Next, Paul Grant, MD, SFHM, hospitalist and associate chief medical information officer for the University of Michigan Health System in Ann Arbor, addressed the perioperative management of sodium-glucose cotransporter-2 (SGLT-2) inhibitors.

These agents, like GLP-1 agonists, are a relatively recent class of medications experiencing increasing utilization, which necessitates ongoing refinement of perioperative guidelines. The primary concern associated with SGLT-2 inhibitors is euglycemic diabetic ketoacidosis (EDKA). SGLT-2 inhibitors induce glucosuria, which lowers serum glucose, thereby decreasing insulin levels and increasing glucagon levels. The physiological stress of surgery further elevates glucagon, potentially resulting in ketogenesis, particularly when combined with preoperative fasting. Due to this risk, it is generally recommended that SGLT-2 inhibitors be discontinued three to four days prior to elective surgical procedures.

However, Dr. Grant discussed the management of urgent or emergent surgeries, citing studies demonstrating the rarity of postoperative EDKA in patients taking SGLT-2 inhibitors. He emphasized that delaying urgent procedures, such as those for hip fracture, to allow for medication discontinuation is generally not warranted. Rather, in such instances, patients should proceed to surgery with heightened vigilance for the potential development of postoperative EDKA.

Dr. Grant proceeded with a discussion of immunomodulators. The perioperative management of these medications presents a delicate balance between the risks of continued use, such as infection and impaired wound healing, and the risks associated with discontinuation, notably exacerbation of the underlying disease.

Dr. Grant emphasized that decisions regarding these medications are typically made by an interdisciplinary team, including the surgeon and the prescriber, often a rheumatologist or other subspecialist. However, he highlighted the crucial role of hospitalists as care coordinators and therefore the importance of their understanding of these management principles.

While medication management is ultimately patient-specific, several general principles were discussed. For immunomodulatory agents used in organ transplant recipients, these agents are continued without interruption throughout the perioperative period. For non-transplant indications, biologic agents are generally held for one dosing cycle. Janus kinase inhibitors are typically held for three days prior to surgery. Other immunosuppressants, including methotrexate and hydroxychloroquine, are generally continued.

The session concluded with a discussion on the perioperative management of buprenorphine. Dr. Grant explained that, contrary to historical practice, which advocated for discontinuing buprenorphine perioperatively to facilitate the use of full mu-opioid agonists for postoperative pain management, the current recommendation is to continue buprenorphine therapy. This paradigm shift stems from the recognition that preoperatively tapering or discontinuing buprenorphine carries a substantial risk of relapse in patients with opioid use disorder. Consequently, the current recommendation is to maintain a patient's home buprenorphine regimen and employ a multimodal approach to postoperative pain management, including the judicious use of full mu-opioid agonists. A specific consideration was addressed for patients on high baseline doses of buprenorphine (exceeding 16 mg). For this patient population, a suggested approach involves preoperative dose reduction to 16 mg. Patients should then be instructed to administer 8 mg on the morning of surgery, followed by 4 mg every eight hours. Postoperatively, the patient's home buprenorphine dose should be resumed as soon as clinically feasible. ■

Dr. Caputo-Seidler

Dr. Caputo-Seidler is a hospitalist and assistant professor at the University of South Florida in Tampa, Fla.

SESSION SUMMARY

Heating Up: Febrile Neutropenia for the Hospitalist

Presenter: David Goese, MD

Summary Author: Arnold Facklam, NP, FHM

"You will encounter neutropenic fever in your career as a hospitalist," emphasized David Goese, MD, an academic hospitalist and assistant professor of medicine at the Northwestern University Feinberg School of Medicine in Chicago, during his presentation at SHM Converge 2025 in Las Vegas. The potentially life-threatening condition demands early recognition and quick intervention, as mortality rates still hover around 11% despite modern advances. The presentation highlighted the approaches in the management of a patient while also noting that some patients can be safely managed as outpatients, which could be considered a shift from traditional practices.

Dr. Goese began by providing working definitions as well as epidemiological data. He noted that severe neutropenia is classified as an absolute neutrophil count (ANC) less than 500 per microliter, and febrile neutropenia as a single oral temperature of greater than or equal to 101˚ F (38.3˚ C) or a temperature of 100.4˚ F (38.0˚ C) that is sustained for more than an hour in a neutropenic patient.

He then focused on the sobering epidemiological data: an overall mortality rate of 11%, with an incidence in solid tumors ranging from 10% to 50% among patients receiving chemotherapy, and an incidence in hematologic malignancies as high as 80%.

Later in the session, Dr. Goese references a study from December 2016 to May 2019 that looked at 343 patients in 14 U.S. cancer centers. Of those, 68% were hematologic malignancy patients and 32% were hematopoietic stem cell transplant patients. This represents a fair proportion of the oncology admissions a hospitalist will manage, either primarily or in consultation.

He further provided a review of neutropenia causes beyond chemotherapy, including medication-induced (such as antimicrobials, antipsychotics, and anticonvulsants), nutritional deficiencies, infections (such as HIV or AIDS, influenza, Hepatitis B, respiratory syncytial virus, cytomegalovirus, tuberculosis, and *Shigella*), immune-related disorders (such as autoimmune chronic benign neutropenia), and congenital causes such as Cohen syndrome, Kostmann syndrome, Barth Syndrome, and Chediak-Higashi syndrome. Dr. Goese noted that while chemotherapy-induced neutropenia remains the most common, as hospitalists we need to keep a broader differential that includes patients with known malignancies who present to the emergency department with fever and unexplained neutropenia.

A highlight of the session was a detailed case presentation of a 68-year-old male with metastatic pancreatic cancer presenting with acute-on-chronic abdominal pain and a neutropenic fever. He was noted to be febrile and slightly hypotensive, and to have tachycardia. He was also noted to be non-toxic in appearance and had mild mucositis of the right soft palate.

Labs (which showed an absolute neutrophil count of 360) and diagnostics were ordered, as well as IV fluids and antibiotics. The audience was polled, and the majority concluded that antibiotics should be started once the labs were drawn and should start within one hour of presentation. As Dr. Goese walked through the case progression, he illustrated critical decision points. In this case, the patient initially responded to empiric antibiotics but on day four developed a persistent fever. At that point, he noted, antifungals should be considered.

Which patients could go home? According to a study published in The Journal of Clinical Oncology in 2018, the Clinical Index of Stable Febrile Neutropenia, or CISNE, is a validated tool for identifying low-risk patients who may be safely managed as outpatients. Patients who receive a very low risk score for serious complications and have access to reliable follow-up care can be considered for outpatient management. This represents a shift from the traditional practice of admitting all patients with neutropenic fever.

Dr. Goese noted that risk stratification tools are available to inform the hospitalist's management of the patient. Although useful, they should never delay antibiotics or admission decisions. He further emphasized that even low-risk patients generally warrant at least a brief observation with IV antibiotics.

Every hospitalist should play a role as an antibiotic steward and follow the most current recommendations. The recent multicenter VANC-FN trial data demonstrated no mortality benefit but significant nephrotoxicity with routine vancomycin addition. Current recommendations presented include: antipseudomonal beta-lactam monotherapy; piperacillin-tazobactam 4.5 g IV every six hours, cefepime 2 g IV every eight hours, meropenem 1 g IV every eight hours. Add vancomycin only for hemodynamic instability or septic shock, pneumonia with substantial infiltrates, known methicillin resistant *Staphylococcus aureus* colonization with signs of skin or soft tissue infection, and severe mucositis. Consider empiric antifungals only after four to seven days of fever persisting despite appropriate antibacterial coverage (earlier if clinically deteriorating or having high-risk factors for fungal infection).

One of the biggest practice-changing updates is that neutrophil recovery is no longer the sole determinant for antibiotic duration. Dr. Goese explained by presenting evidence from the ANTIBIOSTOP trial published in 2024 that outlines a simplified approach to therapy duration.

If the patient has a documented infection, the hospitalist should follow standard duration guidelines such as for non-neutropenic patients (e.g., seven days for uncomplicated bacteremia, 14 days for pneumonia). For fever of unknown origin, if the patient is afebrile for 48 hours and clinically stable, consider stopping antibiotics even with ongoing neutropenia. Finally, continue until count recovery only with high-risk patients (acute myeloid leukemia induction, stem cell transplant).

We were asked the question, "What is new in the care of patients with febrile neutropenia?" This inquiry focuses on the evaluation of antimicrobial duration for gram-negative bacteremia in patients with neutropenia resulting from hematologic malignancies or hematopoietic stem cell transplantation.

In a retrospective cohort study involving 206 patients, the authors examined various durations of treatment: less than 10 days, 11 to 14 days, and more than 14 days. The primary outcomes of the study included a composite measure of all-cause mortality and microbiologic relapse within 90 days. Secondary outcomes assessed included *Clostridium difficile* infections and multidrug-resistant gram-negative colonization within the same 90-day period.

Mr. Facklam

Mr. Facklam is an adult hospitalist, nurse practitioner, and nocturnist with Apogee Physicians at South Georgia Medical Center in Valdosta, Ga

Outpatient management for neutropenic fever is now possible through remote monitoring. In a pilot study involving 25 patients undergoing autologous hematopoietic stem cell transplantation and chimeric antigen receptor T-cell, or CAR-T, therapy, the TempTraq® device was used for remote temperature monitoring. This device identified fever in the range of 100.4˚ F to 100.7˚ F. Out of the participants, 12 sought treatment on the same day they were alerted, while 10 delayed seeking care.

A multicenter prospective trial was conducted on clinical metagenomic sequencing of plasma microbial cell-free DNA in patients with febrile neutropenia, particularly those with acute leukemia. The study included 442 participants. Blood cultures and metagenomic next-generation sequencing (mGNGS) produced 230 positive results. Of these, 33.5% were diagnosed by both blood cultures and mGNGS, 2.2% were identified by blood cultures only, and 59.1% were diagnosed by mGNGS alone. Additionally, 5.2% of the results were positive in both tests but had discordant findings. ■

Pediatric Update: Top 10 Articles of 2024

By Desiree Burroughs-Ray, MD, and Evan Symons, DO

In 2024, we witnessed changes both within the U.S. and abroad, ranging from vaccine hesitancy, uncertainty about the future of governmental health organizations, rapidly advancing medical technology, and marginalized patient populations becoming even more vulnerable.

While the hospital is the primary practice site for pediatric hospitalists, we see the impact of these changes every day in our patients. Within our role as healthcare practitioners, we seek to provide reassurance and empathy to our patients and their families during some of their most vulnerable moments.

For the 2024 update, we highlight the amazing work of healthcare practitioners and researchers aiming to provide the best care for our pediatric patients. These topics range from management of bronchiolitis to addressing racial disparities in healthcare to methods of incorporating new technology within our daily practice.

In this article, we identify the top 10 most impactful articles for pediatric hospital medicine in 2025, as presented at the Pediatric Update at SHM Converge 2025 in Las Vegas. Four publications are highlighted here, along with a summary of the remaining top 10 publications.

1. High-flow nasal cannula therapy for infants with bronchiolitis

Armarego M, et al. High-flow nasal cannula therapy for infants with bronchiolitis. *Cochrane Database Syst Rev*. 2024;3(3):CD009609. doi:10.1002/14651858.CD009609.pub3

Background: Bronchiolitis is the most common cause of hospitalization in infants under 12 months of age, resulting in an annual estimated cost of $1.73 billion.[1] Bronchiolitis typically affects infants younger than 24 months of age, and the mainstay of treatment is supportive, with supplemental oxygen, fluid resuscitation, and respiratory support. Heated, humidified, high-flow nasal cannula (HFNC) therapy is a commonly used form of respiratory support in acute bronchiolitis. A number of theories exist for why HFNC may provide benefits, such as reduction of damage to upper airway mucosa and washing out of nasopharyngeal deadspace.[2,3] This Cochrane review assessed the effects of HFNC compared to conventional respiratory support for the treatment of bronchiolitis in infants less than 24 months of age.

Findings: This systematic review included a total of 16 randomized control trials and quasi-randomized control trials that included infants less than 24 months of age, comparing HFNC to either standard oxygen delivery (low flow) or continuous positive airway pressure (CPAP). Infants with significant cardiorespiratory disorders were excluded from this review. Primary outcomes were length of hospital stay and adverse events, with multiple secondary outcomes, most notably the need for treatment escalation. For length of hospital stay, the review showed a mean difference in length of hospital stay for patients on HFNC to be 0.65 days shorter compared to standard oxygen therapy (95% confidence interval [CI], -1.23 to -0.06). For adverse events, the risk ratio (RR) was 1.20 (95% CI, 0.38 to 3.74), suggesting no difference in adverse events between HFNC and low flow. For the need for treatment escalation, the RR was 0.55 (95% CI, 0.39 to 0.79), indicating HFNC reduces the need for treatment escalation by 0.55 times. The review comparing HFNC to CPAP was limited in the total number of studies, with mixed results, precluding making recommendations to support one respiratory support modality over the other.

Practice implications: HFNC appears to reduce the length of hospital stay and decrease the need for treatment escalation. Evidence remains uncertain in terms of the superiority of HFNC compared to CPAP. This updated systematic review assessing the efficacy of HFNC in the treatment of bronchiolitis was much needed, given the significant increase in available studies (increased from one study to 16 studies). HFNC does appear to be safe when compared to low-flow oxygen therapy. While there was a high degree of heterogeneity in the available studies, this review demonstrates that infants under 24 months of age hospitalized with bronchiolitis who were treated with HFNC had a modest reduction in length of hospital stay.

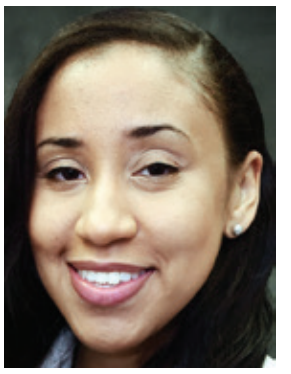
2. Nirsevimab and hospitalization for RSV bronchiolitis

Assad Z, et al. Nirsevimab and hospitalization for RSV bronchiolitis. *N Engl J Med*. 2024;391(2):144-154. doi:10.1056/NEJMoa2314885.

Background: Respiratory syncytial virus (RSV) is the leading cause of bronchiolitis and is responsible for 33.1 million cases in children less than five years of age.[4] Almost 10% of cases result in hospitalizations, and it causes 100,000 deaths worldwide annually.[5] Previously, palivizumab was the only approved agent for RSV prophylaxis, and its use was restricted to high-risk infants. Nirsevimab has emerged as an alternative monoclonal antibody, and initial studies have demonstrated it to be effective at reducing the risk of RSV in late preterm and term infants.[6]

Findings: This prospective, multicenter, matched case-control study of children less than 12 months of age was conducted in metropolitan France between October and December 2023 at six tertiary hospitals. There were 642 case patients who met the criteria of being hospitalized with polymerase chain reaction (PCR)-confirmed RSV. Matching of 321 control patients was performed by identifying patients visiting a participating pediatric emergency department. The median age was similar for case (3.2 months) and control (3.4 months) patients. The study showed that 8.7% of case patients had previously received a nirsevimab injection compared to 28.1% of control patients, indicating an 83% estimated adjusted effectiveness of nirsevimab treatment against bronchiolitis hospitalization. In addition, nirsevimab was 69.6% effective against RSV leading to PICU admission and 67.2% effective against RSV bronchiolitis leading to ventilatory support.

Practice implications: This study shows that nirsevimab is effective at preventing RSV bronchiolitis leading to hospitalization among children less than 12 months of age. Further studies are needed to determine the long-term effectiveness of nirsevimab.



Dr. Burroughs-Ray

Dr. Symons

Dr. Burroughs-Ray is a combined internal medicine-pediatrics academic hospitalist, associate professor, and associate program director of the internal medicine-pediatrics residency program at the University of Tennessee Health Science Center, a pediatric hospitalist at Le Bonheur Children's Hospital, and a hospitalist at Regional One Health, all in Memphis, Tenn. Dr. Symons is a second-year pediatric hospital medicine fellow at the University of Nebraska Medical Center and Children's Nebraska in Omaha, Neb., where he will be staying on as faculty as an internal medicine-pediatrics hospitalist in July 2025.

3. Ultrasound-assisted lumbar punctures in children: An updated systematic review with meta-analysis

Ćwiek A, Kołodziej M. Ultrasound-assisted lumbar punctures in children: an updated systematic review with meta-analysis. *Hosp Pediatr*. 2024;14(3):209-215. doi:10.1542/hpeds.2023-007480.

Background: Lumbar punctures (LPs) are a routine diagnostic procedure performed by pediatric hospitalists for diagnosing a variety of life-threatening conditions. A traumatic LP and an unsuccessful LP are known risks that can result in a variety of complications or changes in the care plan. Point-of-care ultrasound (POCUS) has been shown in adults to be a safe and cost-effective bedside tool to improve LP success rates and decrease rates of traumatic LPs.[7] This study differed from prior systematic reviews by not using the red blood cell (RBC) count as part of the definition of a successful first attempt LP. With improved diagnostic technology, such as PCR-based diagnostic testing, and literature supporting the safe use of blood-contaminated cerebrospinal fluid (CSF) samples for a CSF culture, this study focused on successful first-attempt LP regardless of RBC count.[8]

Findings: This study aimed to examine the efficacy of POCUS-assisted LPs in pediatric patient populations. This was a systematic review and meta-analysis that identified seven studies involving pediatric patients who underwent POCUS-assisted LPs between 2014 and 2021. For the first-attempt LP success rate, the calculated risk difference was 13.0% (95% CI, 3% to 23%) that favored the POCUS-assisted group. For the rate of traumatic LPs, the calculated risk difference was -12% (95% CI, -22% to -0.3%) that favored the POCUS-assisted group. For the LP failure rate, the calculated risk difference was -7% (95% CI, 17.0% to -0.3%), again favoring the POCUS-assisted group. The mean time difference was -1.11 minutes (95% CI, -288 to 0.66), showing that the time to complete the procedure was similar in length.

Practice implications: POCUS increased the success rate of first-attempt LP (regardless of CSF RBC count) while reducing the failure rate and rate of traumatic LPs. POCUS does not add significant time to the procedural time. Overall,

POCUS is accessible, easy to learn, and safe for patients. If available, POCUS should be routinely used before every pediatric LP.

4. Discharge time of day and 30-day hospital reutilization at an academic children's hospital

Lee J, et al. Discharge time of day and 30-day hospital reutilization at an academic children's hospital. *Hosp Pediatr*. 2024;14(4):242-250. doi:10.1542/hpeds.2023-007529.

Background: Discharge from a pediatric hospital is a multistep process involving multiple members of the healthcare team and is an important component of the overall hospitalization. Suboptimal discharges can result in preventable readmissions, while delayed discharges can lead to an increased risk of healthcare-associated infections.[9-10] The timing of optimal discharge from the hospital has not been well studied in pediatric patients, with a previous study focusing only on pediatric surgical patients.[11] This study aimed to determine the discharge time of day associated with the lowest hospital reutilization (emergency department visits and hospital readmission) over 30 days.

Findings: This single-center, retrospective, cohort study evaluated children less than 18 years old discharged from a children's hospital from July 2016 to December 2019. The discharge time was defined as the time the patient left the unit and was divided into morning (8:00 a.m. to 12:59 p.m.), afternoon (1:00 p.m. to 5:59 p.m.), and evening (6:00 p.m. to 10:59 p.m.). The unadjusted 30-day hospital reutilization rates based on time of day were: morning 14.1%, afternoon 18.2%, and evening 19.3%. This indicated a higher unadjusted 30-day hospital reutilization rate for evening discharges compared to morning discharges (P <0.001). Patients discharged in the evening were older and more likely to have one or more complex chronic conditions.

Practice implications: This study suggests that evening discharges are associated with higher rates of 30-day hospital reutilization compared to morning discharges.

Remaining Top 10 Articles

Jone PN, et al. Update on diagnosis and management of Kawasaki disease: a scientific statement from the American Heart Association. *Circulation*. 2024;150(23):e481-e500. doi:10.1161/CIR.0000000000001295.

The American Heart Association guideline update on Kawasaki Disease provides a comprehensive updated resource for the care of pediatric patients with Kawasaki Disease. Two highlights from this guideline update are, first, criteria for high-risk patients that would be considered for intensification of primary therapy, and second, that select high-risk patients may be eligible for dual antiplatelet therapy or even triple therapy with the consideration of direct oral anticoagulants.

Brewster RCL, et al. Performance of ChatGPT and Google Translate for pediatric discharge instruction translation. *Pediatrics*. 2024;154(1):e2023065573. doi:10.1542/peds.2023-065573

Given the vulnerability that exists with care of patients who speak languages other than English, this study investigated the use of large language models (LLMs), specifically Google Translate and ChatGPT, compared to professional translation in Spanish, Brazilian Portuguese, and Haitian Creole. The study demonstrated that LLMs were comparable to professional translation for Spanish and Portuguese but had a much higher risk for clinically significant errors with translations for Haitian Creole.

Smith LB, et al. Black-white disparities in asthma hospitalizations and ED visits among Medicaid-enrolled children. *Hosp Pediatr*. 2024;14(6):490-498. doi:10.1542/hpeds.2023-007477

This study highlights the racial disparities that exist in Medicaid-enrolled Black children with pre-existing asthma compared to white children. Black children were two times more likely to have asthma-related emergency department visits and hospitalizations compared to white children. Even with access to health insurance, healthcare-related racial disparities still exist in pediatric asthma care, calling for continued advocacy to address other sources of inequity.

Parikh K, et al. Disparities in racial, ethnic, and payer groups for pediatric safety events in U.S. hospitals. *Pediatrics*. 2024;153(3):e2023063714. doi:10.1542/peds.2023-063714

Preventable harm events in the hospital are known to affect the most socially disadvantaged groups of children. This study sought to determine if disparities in patient safety events in hospitalized pediatric patients persisted between race and ethnic groups, as well as insurance status. Hospitals receiving higher safety grades demonstrated persistent disparities between racial and ethnic groups, with non-Hispanic Black and Hispanic children being most affected, even when limiting the analysis to private pay patients.

Wolf RM, et al. Disparities in pharmacologic restraint for children hospitalized in mental health crisis. *Pediatrics*. 2024;153(1):e2023061353. doi:10.1542/peds.2023-061353

Due to limited resources, many pediatric patients with primary mental health conditions are admitted to a non-psychiatric acute care hospital while awaiting transfer to an inpatient psychiatric hospital. This study demonstrated that Black youth were more likely to receive pharmacological restraint than other racial and ethnic groups when admitted with primary mental health diagnoses.

McCulloh RJ, et al. A national quality improvement collaborative to improve antibiotic use in pediatric infections. *Pediatrics*. 2024;153(5):e2023062246. doi:10.1542/peds.2023-062246

This quality improvement initiative sought to increase the proportion of children evaluated in the emergency department or admitted to the hospital who received appropriate antibiotics for common pediatric infections. The initiative focused on improving empirical, definitive selection and duration of antibiotics for community-acquired pneumonia, skin and soft tissue infections, and urinary tract infections. ■

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SESSION SUMMARY

Towards a Medical Superintelligence: Reasoning Models and the Race Towards a Strange New World in Clinician-Computer Collaboration

Presenters: Daniel Restrepo, MD, FHM, and Adam Rodman, MD, MPH

Summary Author: Elizabeth Herrle, MD, FACP, SFHM

The original title of this talk was "A Turing Test for Clinical Reasoning: Large Language Models and the Future of Diagnosis." A lot can happen in a year, so now we find ourselves "Turing" in the rearview as we careen toward an exciting and uncertain future. Adam Rodman, MD, MPH, a general internist and medical educator at Beth Israel Deaconess Medical Center and assistant professor at Harvard medical School, both in Boston, assured the audience, "I don't think we're in danger of being replaced any time soon." But by the end of the presentation, I wondered about his definition of the word "soon."

Key Takeaways

- The technological advancement of LLMs has led to reasoning models which are able to document their thought processes and perform well with problems they have not previously encountered.
- For a variety of clinical reasoning tasks, reasoning models are showing equivalent or superior performance when compared to experienced clinicians. There are studies suggesting that the benefit of these models is lost or moderated when clinicians are in the loop.
- As clinicians, we need to drive the discussion around responsible use of technology in patient care. If we do not participate, the decision making will happen without us.

The new models

Dr. Rodman began the session by reviewing the difference between traditional large-language models (LLMs) and newer reasoning models. He described traditional LLMs as "autocomplete on steroids," a technology whose power is derived from its ability to predict the next most appropriate word in a string of text. Traditional LLMs, while powerful, are not able to explain the way they arrive at an answer.

In contrast, reasoning models are designed to show their chain of thought. You might think of it as the difference between an early trainee developing their plan based solely on prior experiences with similar patients (the traditional LLM) compared to a seasoned attending walking through how each piece of data influenced their thinking. These reasoning models are incredibly powerful and have the ability to solve problems they have never seen before.

The human and the machine

Next, we were taken on a tour of recent studies evaluating the performance of reasoning models. These models show incredible ability to generate differential diagnoses, with the best-performing model containing the correct diagnosis over 75% of the time, compared with a clinician score of about 30%. In a recent publication,[1] GPT-4 was shown to have a higher quality display of reasoning than residents and attendings with equivalent efficiency, accuracy, quality, and identification of can't-miss items.

And the reasoning models don't just do diagnosis. Early signs indicate reasoning models can perform at a level that is equivalent to and possibly superior to the human clinician in taking clinical histories and recommending management.

Interestingly, while they can outperform clinicians in some measures of clinical reasoning, there is concerning data that these models lose some of their edge when partnered with a clinician. Clinicians using artificial intelligence (AI) did no better than those without AI with regard to clinical reasoning, but the models alone scored better. This may suggest that human biases in reasoning can negate the value of AI assistance.

The demo

In the next portion of the presentation, the man (Daniel Restrepo, MD, core educator faculty member and associate program director of the internal medicine residency program at Massachusetts General Hospital, and assistant professor of medicine at Harvard Medical School, both in Boston) took on the machine (a reasoning model preview version). Kudos to Dr. Restrepo for keeping pace without sacrificing quality during a fast and furious case recitation by Dr. Rodman. As Dr. Rodman dropped out aliquots of information, both doctor and computer impressed the audience with their reasoning and rapid processing speed.

And while Dr. Restrepo's skill as a diagnostician was on full display, it was hard not to direct the majority of the awe in the room to the screen behind him where the reasoning model rapidly developed a prioritized table of diagnoses that included columns for key supporting information, refuting information, pitfalls if missed and a reasoned defense for each diagnosis's place in the table. Below the table, management recommendations were displayed that could have saved the patient quite a lot of time and trouble if they had been followed.

The case wound through its twists and turns, with the reasoning model suggesting the final diagnosis and highlighting it as a "can't miss" before Dr. Restrepo got there. If we're being fair, in the avalanche of information, I don't think the key piece of clinical data (scrotal swelling) that triggered the reasoning model was verbally communicated to Dr. Restrepo. This was so very true-to-life—the volume of information we need to process often obscures small but important details.

As we neared the end of the case and the imaging revealed a scrotal abscess with associated Fournier's gangrene, the reasoning model impressively advised, "What to tell the team: 'This is Fournier's gangrene – he needs the OR right now'". That's the kind of situational awareness that makes you high-five a resident.

The real world

Finally, Dr. Rodman presented data from a study comparing the second-opinion power of two reasoning models and two experienced hospitalists. For "all comers" to the emergency department over a two-week period, the models and physicians were asked to provide second opinions at three pre-defined touchpoints. The reasoning models were equivalent to the experienced hospitalist at times of high information density (later in the patient course) but outperformed the hospitalists when information density was lower (earlier in the patient course).

Dr. Herrle

Dr. Herrle is a hospitalist and the associate medical director for professional development in the division of hospital medicine at Maine Medical Center in Portland, Maine, and the associate chief medical information officer for MaineHealth.

The Q and A

Drs. Rodman and Restrepo turned to the audience to ask, "What does hospitalist-computer collaboration look like in the future?" Here are some pearls from that discussion:

- Sometimes patients using an AI tool will get it right before we do (or when we didn't). Humility and keeping the patient at the center are key.
- Overuse of AI can lead to cognitive de-skilling. "AI can make us stupid". Keep your mind sharp.
- Great questions to ask a reasoning model: "What could I be missing?" and "What else should I check?"

Author's Note: I did not use AI to assist in the writing of this article. If I had, it might have been better. ■

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SESSION SUMMARY

Updates in Rheumatology for the Busy Hospitalist

Presenter: Kimberly Trotter, MD

Summary Author: Chris Migliore, MD, MS, FACP, FHM

The neon of Las Vegas may have framed this year's clinical update at SHM Converge 2025, but the real spotlight fell on the everyday rheumatologic dilemmas that land patients in our wards. Kimberly Trotter, MD, an assistant professor of medicine at the University of Chicago' rheumatology section in Chicago, distilled four high-impact disease clusters—gout, rheumatoid arthritis (RA), systemic lupus erythematosus, and vasculitis—into pragmatic lessons meant to shorten length of stay, avert diagnostic detours, and preserve organ function.

National data show that nearly half of rheumatology-related admissions stem from osteoarthritis, but the acute issues that consume hospitalists' attention are gout (13%), rheumatoid arthritis (8%), and a miscellany of systemic disorders such as lupus and vasculitides. Recognizing these entities early shortens stays; missteps add an average of two days, particularly when gout flares are overlooked. This recap is tailored to hospitalists who need fast clinical traction rather than casino flash.

Key Takeaways

- Tap before you leap.
- Don't derail chronic therapy lightly.
- Rule out sepsis first, treat inflammation second.
- Think beyond discharge.
- Phone a friend early. Timely rheumatology input reduces readmissions and keeps rare mimics in the differential.

Gout: Know when to tap, when to treat

Hospitalization itself is a gout trigger—volume shifts, diuretics, and dietary changes conspire to ignite flares. Classic monoarthritis of the lower limb reaches maximum agony within 24 hours, but beware polyarticular or spinal involvement. Aspirate any hot, swollen joint unless septic arthritis has already been ruled out; crystal confirmation prevents both undertreatment and steroid overuse. First-line therapy pivots on timing: colchicine is valuable only if it's started no more than 36 hours from symptom onset (1.2 mg to start, 0.6 mg after an hour, then 0.6 mg once or twice daily; halve frequency in stage 3 chronic kidney disease. Beyond that window, reach for nonsteroidal anti-inflammatory drugs (NSAIDs) or prednisone 40 mg with a taper over five to 10 days; avoid dose packs, which can boomerang flares. Continue outpatient urate lowering agents during flares—holding allopurinol or febuxostat invites post-discharge crises. IL1 blockade (anakinra) matches standard therapy in efficacy and may rescue patients with contraindications to steroids or NSAIDs, but costs run high.

Pearls

- Podagra is virtually pathognomonic, yet gout can coexist with infection—tap before you treat.
- Never taper steroids too briskly; rebound pain is real.
- Starting allopurinol during a flare is acceptable if long-term therapy is indicated and renal function allows.

RA: The great mimicker

RA admissions may reflect articular pain, pulmonary nodules, interstitial lung disease, pericarditis, or accelerated atherosclerosis. Extra-articular disease can masquerade as an infection and drive soaring C-reactive protein (CRP), so hospitalists must rule out sepsis before escalating immunosuppression. Low-dose prednisone (10 to 20 mg) or targeted intra-articular steroids quell acute synovitis; higher doses (40 mg or higher) are for threatening systemic flares. Continue baseline glucocorticoids to prevent adrenal crisis, but pause methotrexate, anti-tumor-necrosis-factor agents, and Janus kinase inhibitors until infection is excluded. For new-onset RA, remember that rheumatoid factor and anti-cyclic-citrullinated-peptide are diagnostic aids—extreme CRP suggests you are chasing the wrong zebra.

Pearls

- Viral hepatitis, parvovirus, Lyme, and endocarditis can all yield false-positive rheumatoid factor—think broadly.
- Keep an eye on methotrexate toxicity in chronic kidney disease; reduce the dose or hold if estimated glomerular filtration rate is less than 30 mL/min.
- RA patients die more often from cardiovascular disease than from their arthritis; flag high-risk profiles for post-discharge follow-up.

Systemic lupus erythematosus: flare versus fail

Systemic lupus erythematosus favors young women but strikes all sexes and races; minority men often present with more severe organ damage. Inpatient admissions commonly arise from nephritis, serositis, infection, or thrombotic events. Antinuclear antibody negativity virtually excludes lupus, so avoid "just in case" testing; instead, order complements C3 and C4 and anti-double-stranded-DNA when flare is suspected, as hypocomplementemia and rising double stranded DNA titers track disease activity. Treat musculoskeletal or cutaneous flares with NSAIDs or prednisone at up to 20 mg; organ-threatening disease warrants 40 to 60 mg (or pulse methylprednisolone) plus a steroid-sparing agent. Hydroxychloroquine is the cornerstone therapy, is not immunosuppressive, and should continue through infections—consult ophthalmology to schedule annual retinal exams after five years.

Pearls

- Fever in lupus may signal infection, flare, or both; trending CRP (often low in pure flare) and procalcitonin can help.
- Nephritis may present subtly—order spot protein and creatinine ratios liberally.
- Thrombosis risk skyrockets with antiphospholipid antibodies; prophylactic anticoagulation merits discussion.

Vasculitis: Size matters

Giant Cell Arteritis (Large Vessel)

In patients over 50 years old with new temporal headaches or jaw claudication, treat giant cell arteritis (GCA) as a vision-threatening emergency. Start IV methylprednisolone 500 to 1,000 mg/day for three days for visual symptoms, then oral prednisone 40 to 60 mg. Temporal artery biopsy remains confirmatory but should not delay steroids; obtain within two weeks of treatment. Tocilizumab is a validated steroid-sparing option. Normal erythrocyte sedimentation rate and CRP almost rules out GCA, yet rare seronegative cases exist.

ANCA Associated Vasculitis (Small Vessel)

Think granulomatosis with polyangiitis, microscopic polyangiitis, or eosinophilic granulomatosis with polyangiitis when hematuria, pulmonary infiltrates, sinus disease, or mononeuritis multiplex cluster together. Labs: erythrocyte sedimentation rate, CRP, creatinine, urinalysis, myeloperoxidase, proteinase 3 anti-neutrophil cytoplasmic antibodies (ANCA, as in ANCA-associated vasculitis), and anti-glomerular basement membrane antibodies if indicated. Imaging and, crucially, tissue biopsy define the diagnosis; "no biopsy, no vasculitis," unless biopsy is strongly contraindicated. Begin high-dose steroids once infection is excluded; rituximab now rivals cyclophosphamide for induction with fewer long-term harms, and avacopan (a C5a inhibitor) is emerging as adjunctive therapy. Plasma exchange is no longer routine after negative data from the PEXIVAS clinical trial.

Pearls

- Vessel size predicts organ pattern: large, like GCA, targets cranial and limb arteries; small, like ANCA, prefers kidney, lung, and otolaryngological regions.
- ESR and CRP are highly sensitive but nonspecific; falling markers do not always equal remission.
- Early steroid-sparing biologics curb cumulative glucocorticoid toxicity—coordinate rheumatology follow-up before discharge.

In a city known for doubling down, Dr. Trotter reminded us that the safest bet in rheumatology is early recognition, judicious steroid use, and continuity of evidence-based disease-modifying therapy. By integrating these pearls into daily practice, hospitalists can tilt the odds toward shorter stays and better long-term outcomes—no dice required. ■

Dr. Migliore

Dr. Migliore is an assistant professor of medicine at Columbia University College of Physicians and Surgeons, director of general medicine perioperative, and consult services, and medical director of surgery and surgical step-down at Columbia University Medical Center in New York.

SESSION SUMMARY

We're All In: How to Run an Effective Meeting

Presenter: Brad Sharpe, MD, SFHM

Summary Author: Sarah Burns, DO, MS, FACP, SFMH

"How many of you have been a part of or have run crappy meetings?" Brad Sharpe, MD, hospitalist and professor of medicine at the University of California, San Francisco, asked the audience during his session at SHM Converge 2025. Almost everyone in the room raised their hand, and over the next hour, they were introduced to the knowledge and skills needed to make future meetings much more engaging by a speaker who has a wealth of leadership experience.

Meetings are held for different purposes, such as sharing information, building relationships, and solving problems, and Dr. Sharpe framed his talk with this key point. Effective meetings should be considered in three parts: before, during, and after. Before the meeting, it is vital to define the purpose of the meeting and determine the type of meeting to match the purpose.

Briefing-type meetings are typically for information sharing and are often led by one person, reporting to a large group. Board or committee meetings are typically for report-outs or consensus discussion, rarely for decisions or problem solving, and are led by individuals with group discussions. Problem-solving meetings typically involve everyone in active problem solving and decision making, with the optimal meeting size of five to eight participants.

The importance of setting an agenda before a meeting was also emphasized as it not only defines topics with time allocations, but also identifies people, clarifies the purpose, and outlines the process. The three "Ps" of people (topic leader), purpose, and process will help frame the meeting agenda with ease. Sending the agenda to the meeting participants promptly is an important, often overlooked step. During the meeting, make sure to start on time and end 10 minutes early with an already established final agenda item of "decide next steps" or "action plan." Establishing group ground rules is fundamental to running effective meetings. Poor meeting behavior often begets poor behavior, so setting behavior expectations before the meeting or norming with meeting participants to determine ground rules could be options depending on your meeting. During the meeting, remember to follow the timing outlined on the agenda so people (topic leaders) stay on time.

Key Takeaways

- Running meetings effectively is a skill you can learn!
- All meetings take time, effort, and energy to prepare, run, and review.
- Remember to define the meeting purpose, decide the meeting type, set and send an agenda, set and enforce ground rules, engage participants, end the meeting with joy and gratitude, and send something out afterwards.

It may be evident, but a good reminder nonetheless is that to have an effective meeting, participants must be engaged. Dr. Sharpe offered some excellent tips on engaging even the most introverted participants, such as "I want to hear from you, Lisa and Juan, so I will be asking for your input in a few minutes ..." Finally, end the meeting on time, with an action plan in those final 10 minutes you have allocated on the agenda.

After the meeting, it's valuable to send a follow-up message to participants. This could include positive reflections, action items, a summary of the meeting, or formal minutes that can be generated using AI. Providing feedback or sharing reflections after the meeting is also an important way to effectively address the outcome of the meeting.

Dr. Sharpe finished his session by reviewing best practices in virtual meetings, which are all too familiar to those of us in a post-pandemic world, including using technology correctly, maintaining ground rules, and ensuring participant engagement. A noticeable difference for effective virtual meetings, however, is the wait time that must be allowed for audience response. It is better to wait longer virtually than in person: 10 seconds at least.

Some miscellaneous tips shared at the end of the session included: recognizing that one-on-one meetings still have the aforementioned rules; acknowledging high-functioning teams often spend more time thinking about non-work-related topics, so consider an ice breaker or something else fun to discuss as a team at the start of the meeting; offering food or snacks; and ending your meeting with joy, gratitude, or praise.

By studying these tips and tricks, practicing these approaches, and experiencing meetings again and again, you too can run effective meetings. If you would like to try any or all of these tips but need greater buy-in from your group, just invoke Dr. Brad Sharpe and his excellent session at Converge 2025. Tell your colleagues, "Dr. Brad Sharpe said we should do this!" and you too will run more effective meetings. ■

Dr. Burns

Dr. Burns is an academic hospitalist, associate professor, director of continuing medical education, and the vice section chief for faculty development in the division of hospital medicine at the University of New Mexico School of Medicine in Albuquerque, N.M.

SESSION SUMMARY

The Wholly Frail—Choose Your Own Surgical Adventure

Presenters: Ciandra D'Souza, MD, MPH, Kunjam Modha, MD, FACP, SFHM, Heather Nye, MD, PhD, FACP, SFHM, and Jenny Shen, MD, FHM

Summary Author: Mehraneh Khalighi, MD

This workshop presented participants with three case scenarios of older adults needing surgical interventions, including inpatient management after traumatic rib fracture, vascular surgery for chronic lower extremity osteomyelitis with underlying malnutrition and failure to thrive, and femoral neck fracture with newly discovered heart murmur concerning for aortic stenosis.

The aim of the workshop was to engage participants in discussion around the many challenges presented in the vignettes and to use available risk assessment tools to choose from different management options. The cases highlighted the importance of identifying the presence of frailty, functional dependence, malnutrition, and cognitive impairment in older adults by using validated risk assessment tools and applying age-friendly concepts in making management decisions.

Frailty is a multidimensional syndrome characterized by decreased physiological reserve, reducing recovery from stressors, including surgery. It is associated with increased postoperative morbidity and mortality. Additionally, the presence of low functional status before surgery is an indicator for postoperative complications such

Dr. Khalighi

Dr. Khalighi is the director of the preoperative medicine clinic at Veterans Affairs Puget Sound Health Care System and a clinical associate professor of medicine in the division of General Internal Medicine at the University of Washington in Seattle, Wash.

as increased length of stay and long-term mortality. Presurgical malnutrition is associated with poor wound healing, surgical site infection, and wound dehiscence, among other complications. Several validated frailty and nutritional assessment tools are available to identify patients at risk for poor postoperative outcomes. Preoperative optimization of functional and nutritional status may improve outcomes after surgery, but there is no clear consensus on the type, timing, or duration of interventions.

The vignettes describing traumatic rib fracture and vascular surgery highlight the significant role hospitalists play in recognizing frailty and applying the age-friendly "4Ms" framework, focusing on what Matters, Medication, Mentation, and Mobility to optimize the care of the complex geriatric surgical patient. By asking, "What matters to you?" hospitalists can elicit patient and family priorities and play an integral part in facilitating shared decision making, which has been shown to increase patient understanding, satisfaction, and accuracy of risk prediction and better align the patient's healthcare goals with realistic outcomes. Additionally, caregiver and family insights into the patient's baseline functioning and mentation should be considered when making treatment choices. Seeking accurate medication reconciliation from these caregivers or family members ensures appropriate medication management and decreases the risk for delirium and other iatrogenic complications. Finally, assessing mentation and managing delirium by addressing pain adequately, avoiding inappropriate medications, and encouraging early mobility further decreases the risk for complications.

The vignette on femoral neck fracture in an elderly patient with concern for aortic stenosis underlines the hospitalist's role in facilitating interdisciplinary collaboration for appropriate risk assessment, shared decision-making, and preoperative optimization to improve patient outcomes and patient satisfaction.

In this case, the newly discovered heart murmur is concerning for aortic stenosis and should be evaluated before surgery to determine the severity of valvular dysfunction and assess for left ventricular systolic function. Asymptomatic patients with severe aortic stenosis and preservation of over 50% of left ventricular ejection fraction have similar postoperative outcomes as patients without aortic stenosis and can undergo surgery safely. However, symptomatic patients and those with left ventricular dysfunction or extremely severe aortic stenosis (i.e., peak velocity over 5 m/s or mean pressure gradient over 60 mmHg) are at higher risk for postoperative morbidity and mortality and require careful risk assessment including possible preoperative balloon valvuloplasty or minimalist transcatheter aortic valve replacement to decrease the risk or non-operative management.

Finally, although surgical intervention within 24 hours of a femoral neck fracture is ideal to decrease mortality, it carries a 10% rate of mortality at 30 days and up to 30% at one year. The benefits of surgery, such as increased mobility and pain control, should be carefully weighed against the risks of venous thromboembolism, pneumonia, stroke, myocardial infarction, immobility, delirium, and mortality. Underlying factors such as institutional residence and dependent functional status prior to surgery are poor predictors of postoperative outcomes and are associated with increased rates of mortality, postoperative delirium, and surgical intervention. These individuals may not benefit much from surgery to improve mobility, especially if they have manageable pain levels. Discussion with the surgeon on details of the hip fracture (i.e., displaced vs. nondisplaced fracture) can identify less invasive procedures or non-operative alternatives in patients at substantial risk for complications. ■

Key Takeaways

- The presence of preoperative frailty with functional decline and malnutrition is associated with elevated risk for poor postsurgical outcomes and mortality.
- Obtaining collateral information from the patient's support system for careful medication reconciliation, avoiding potentially inappropriate medications and considering non-pharmacologic interventions, can decrease the risk of postoperative morbidity, including delirium in elderly patients with frailty.
- The shared decision-making framework facilitates identification of the patient's health care priorities and effective communication of risk assessment to address mismatch between the patient's health care goals and realistic outcomes.

SESSION SUMMARY

Lessons Learned From 20 Years as an Expert Witness in PHM Malpractice Cases

Presenter: Jack M. Percelay, MD, MPH, FAAP, MHM

Summary Author: Leah N. Jones, MD

This presentation was part of the pediatric track at SHM Converge 2025 in Las Vegas. Jack M. Percelay, MD, MPH, FAAP, MHM, clinical professor of pediatrics at Stanford Healthcare Tri-Valley Hospital in Pleasanton, Calif., discussed key components of a malpractice case, 10 takeaway points for clinicians to protect themselves against unwanted litigation, and what it entails to be a medical expert witness.

Dr. Percelay began the presentation by delineating between harm, negligence, and causation. Next, he explained that the "standard of care" definition, which is "the level of medical care the average provider would provide," is the basis on which medical malpractice litigation is brought against an individual.

Dr. Percelay's Top Ten Lessons Learned were described with additional detail as follows:

1. It can happen to anyone. People are generally overwhelmed, and things can be missed by anyone. Do not think you are immune to being sued.
2. You do not have to be brilliant, but you need to be good. Be a good practitioner by doing the basic items consistently.
3. Document, document, document. Beware of the copy and paste. Document the discussions and the little things that happen between the clinician and the patient.
4. Be diligent and follow through on all things. If you order it, follow through. Have a sound system for follow up.
5. Communicate effectively. With both families and other practitioners, communicate and be approachable.
6. Know yourself, including what you tend to do and your weaknesses. If you know there is a skill set you struggle to execute well, acknowledge where you are and find ways to improve.
7. Ask for help. Develop a system or group of people you can ask for help.
8. Create a culture that welcomes challenges. Use patient sign out to challenge and verify. Don't just pass issues along, ask questions.
9. An audit trail exists, and it will be pursued. Protect all conversations, acknowledging that there is always a paper trail.
10. Preserve confidentiality. Develop a way to protect confidentiality.

For those interested in becoming an expert witness for malpractice cases, he offered additional advice cautioning that a retrospective bias is one of the biggest hurdles when evaluating a case.

Dr. Percelay provided the following step-by-step process to move through a case:

1. Limit details on first contact, just look at the general scenario
2. Have another person prepare the files for review, so that you can read everything fresh, in chronological order, without knowing what happens in the case
3. Take your time going through the case
4. Create your preliminary opinions without outside influence from others
5. If you need more information, ask before any discussions with the attorneys
6. Discuss your findings with the attorneys, then see what side they represent

As you prepare to present your opinion in writing or orally, he cautions you to be thorough and to take additional time if needed. Once you deliver your message, it is important to be succinct and direct in your opinion. Protected or confidential work product is different based on the state, and it is important to know what is expected of you and your work product based on where you are located. While in court, it is important to be steady, calm, and not be angry or confrontational. Dr. Percelay concluded with the reminder that your expertise is valid and valuable. ■

Dr. Jones

Dr. Jones is a clinical associate professor of pediatrics at the University of Missouri Kansas City and a pediatric hospitalist at Children's Mercy Hospital, both in Kansas City, Mo., and a digital media fellow for the Journal of Hospital Medicine.

SESSION SUMMARY

Point-of-Care Ultrasound for the Big and Small

Presenter: Shelia Swartz, MD, MPH

Summary Author: Patricia Tran, MD, MS, FAAP

At SHM Converge 2025, Shelia Swartz, MD, MPH, associate professor at the Medical College of Wisconsin in Milwaukee, shared practical insights into the use of point-of-care ultrasound (POCUS) to enhance pediatric inpatient care. She emphasized ultrasound's dual role in expediting clinical decision making and re-engaging learners and families at the bedside.

This session highlighted the increasing relevance of ultrasound as a tool to make abstract clinical assessments visible and immediate. Throughout the talk, case-based examples were used to demonstrate how ultrasound can be applied in real-world scenarios to improve diagnosis and management without requiring advanced imaging skills.

Cases and applications

Lung Pathology: A 10-year-old patient with pneumonia was used to show how ultrasound differentiates simple effusions, complex empyema, and lung consolidation. In real time, POCUS helps determine whether urgent intervention like chest tube placement is needed or if a patient can safely await further imaging or specialist evaluation.

Bronchiolitis Management: An 18-month-old with persistent respiratory symptoms and an inconclusive chest X-ray demonstrated how lung ultrasound can provide clues to disease severity and trajectory. As lung disease progresses, ultrasound findings transition from A-lines to confluent B-lines and eventually to subpleural consolidations.

Dr. Tran

Dr. Tran is an assistant professor of clinical pediatrics at the University of Illinois College of Medicine, and a pediatric hospitalist at OSF St. Francis Children's Hospital, both in Peoria, Ill. She is deputy editor of digital media for the Journal of Hospital Medicine and pediatrics editor for The Hospitalist.

Lumbar Puncture Support: Two spinal cases illustrated ultrasound's utility across age groups. In a four-day-old neonate with a failed lumbar puncture (LP), ultrasound was used to detect the presence of fluid before reattempting LP, preventing unnecessary trauma. In a 15-year-old with suspected pseudotumor cerebri, ultrasound helped identify the spinal midline and interspinous space, improving procedural success, which is particularly useful in patients with elevated BMI.

Bladder and Foley Assessment: A 16-year-old patient with hematuria and urinary retention after Foley placement demonstrated how bedside bladder ultrasound can quickly detect catheter malfunction due to clot obstruction, prompting timely flushing of the catheter.

Soft Tissue Imaging: Ultrasound was presented as a quick and effective tool to differentiate cellulitis, lymphatic swelling, and abscesses. In neonates with mastitis, ultrasound helped track improvement over time, reinforcing medical management decisions without unnecessary interventions.

Throughout the session, Dr. Swartz stressed that POCUS is accessible to hospitalists without formal radiology training. However, success requires hands-on practice and familiarity with normal and abnormal patterns. She encouraged the use of visual aids, consistent probe marker orientation, and saved images to build credibility and facilitate interdisciplinary communication.

The session concluded with a discussion on credentialing, billing, and malpractice considerations. Notably, a review of pediatric malpractice cases suggested that failure to use POCUS appropriately, rather than misinterpretation, was a more common medicolegal issue. Clear documentation and consistent skill development were emphasized as essential for safe practice.

POCUS was presented not just as a technical skill, but as an important bridge between clinical reasoning, patient-centered care, and team-based teaching. ■

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Key Takeaways

- POCUS is a highly practical tool for bedside diagnosis and decision making across common pediatric presentations.
- Applications include lung assessment, hydration status, lumbar puncture guidance, bladder evaluation, and soft tissue imaging.
- Hands-on practice and consistent image interpretation are crucial for developing and maintaining proficiency.
- Hospitalists are encouraged to integrate ultrasound use routinely into patient care rather than reserving it for high-stakes scenarios.
- Credentialing, documentation, and interdisciplinary communication are important for the safe and sustainable integration of ultrasound into pediatric hospital medicine.
- Early partnerships with radiology and administrative teams can support credentialing and billing efforts.

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