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Hope in Tough Times

Lessons for hospitalists

By Leif Hass, MD

Scanning the labs of the woman I am admitting from the emergency department, I see a calcium of 12. “Oh no,” the thought jumps to the front of my mind, “This might be from a recurrence of her breast cancer.”

We are trained to look for abnormalities and see the possible worst outcome. We need to have this mindset if we are to prevent that worst outcome. Uncovering all potential bad outcomes is an essential skill, yet it is simply a more intentional form of a human being's natural negativity bias.

As our country enters a time of uncertainty, I find this worst-case-scenario mindset is not serving me well. Will my patients lose vaccine insurance coverage? Will some states struggle to retain enough OB/GYNs to serve their populations?

Along with sometimes relentless ruminations about our country and the world, in my moments of anxiety, I get a visceral sense of what a plethora of studies support: Hope is essential for human flourishing and without it, we wither.

Reflecting on it for a second, I should have a deeper understanding of hope. Because in a way, aren't we in the business of hope? But I'm not sure I know exactly what hope is. And what is our relationship to it?

Psychologist William Miller calls hope a “vital component of our psychological capital.” We need it to persevere in a life with inevitable challenges. Decades of research suggest being hopeful leads not only to a higher quality of life but also to more resilience, creativity, and better problem-solving skills.

As physicians, hope is fostered largely through our treatments—that is our fundamental task. In an unsettled world, that model of providing hope breaks down. There are no simple prescriptions for what ails the world when we are facing political, social, and environmental issues where we have so little agency.

For me, hope was not part of my formal training curriculum. Only after decades of practice have I started to think about hope as an emotional and intellectual process and to talk explicitly to my patients about it.

Hope can be defined as “motivation to persevere toward a goal or end state, even if we're skeptical that a positive outcome is likely.” I've come to see it as something more complex; this definition feels



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static. Life is ever-moving, and as a result hope should be fluid, more of a dynamic mindset for approaching life.

I had a lesson on this the other day, seeing the grace with which a patient faced the end of his life. I said to him, “Mr. R, as we talked about the other day, it appears your cancer has progressed. I am so sorry. This means we need to talk about what we can hope for from here.”

“Well, Dr. Hass, I have been holding our hope for a cure, but thinking about it the last few days, honestly what I want out of life now is to dance with my daughter at her wedding next month.”

I replied, “It brings tears to my eyes thinking about it and I promise you we will do all we can to make it happen.”

True hope requires adaptability. The only thing constant in life is change, so we need a vision of hope with aspiration towards a goal, but also flexibility as our situation changes.

Life is always moving forward and small hopes with simple desires punctuate our days, but hope must amp up in the face of fear. Fear is an intense hardwired emotion to point out threat. There is little to prevent fear from alarming us when the appropriate stimulus arises. What we do next in the face of this threat requires more complex thinking. And while hope springs eternal, hope needs nurturing.

What qualities of mind are needed to foster a healthy response to

Continued on page 7

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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 READMISSION¹⁻³

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.

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.

THE ONLY
 **NIH** RECOMMENDED COVID-19
TREATMENT OPTION

included for adult patients hospitalized for COVID-19⁴

- Not requiring supplemental O₂ and
- Requiring low- or high-flow O₂

Turn the page for details

VEKLURY® REDUCED DISEASE PROGRESSION AND RECOVERY TIME, AND DEMONSTRATED READMISSION OUTCOMES ACROSS A BROAD RANGE OF COVID-19 SEVERITY¹⁻³

Disease progression²

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 data³



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 characteristics³

- **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 considerations³

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.

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.

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/ce-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>



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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 >10 x 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 ($\geq 5\%$ 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 $\geq 3\%$ of subjects receiving VEKLURY in Trials NIAID ACTT-1, Study 5773, and/or Study 5774, respectively, were ALT increased (3%, $\leq 8\%$, $\leq 3\%$), AST increased (6%, $\leq 7\%$, n/a), creatinine clearance decreased, Cockcroft-Gault formula (18%, $\leq 19\%$, $\leq 5\%$), creatinine increased (15%, $\leq 15\%$, n/a), eGFR decreased (18%, n/a, n/a), glucose increased (12%, $\leq 11\%$, $\leq 4\%$), hemoglobin decreased (15%, $\leq 8\%$, $\leq 3\%$), 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 overdose 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



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Hope

Continued from page 2

fear? Fear pounces upon us from the amygdala. To cultivate hope we must draw upon diverse cognitive skills. Critically, we need a desire for change—and then we must cultivate steadiness of mind or equanimity in the face of the challenge ahead. We need the ability to focus calmly so we bring curiosity and critical thinking to our situation to formulate our plan. Lastly, we need the drive to work against adversity to give our plan the chance of success.

Psychologist Charles Snyder proposed a model for a hopeful mindset with two components: Pathway thinking involves planning a route to our desired outcome. Agency thinking requires an enduring belief that our goals can be achieved despite potential barriers. In tough times, we can feel demoralized, and both can be hard to come by.

This is where another key modulator of hope comes in—community. Sometimes we just need the human connection to find hope. Even when I have no curative treatments to offer, and death is inevitable, just holding a hand and committing to “facing this together” provides my patients some solace. Simply being with someone can provide hope against the fear of isolation.

Hope, like other emotions, can be contagious. Together people can support, motivate, brainstorm, and strategize, thereby developing pathway thinking and fostering agency thinking. In fact, there is a form of group psychotherapy that uses this idea to help people move through life’s challenges. In Hope Therapy, people come together to



listen, plan, and create a support system. Individuals leave the session with a hopeful approach to their struggles and others to call on to bolster them as they move forward.

In tough times, modest hopes with small goals, approached collectively, can build a community ready to address its larger challenges. Every day with our patients we do this: we create small teams; we find a treatment pathway; and our compassion and expertise support our patients’ agency. Each time we enter a room is an opportunity to create a collective sense of hope, even at times in the face of inevitable grief and loss.

To heal the country, the next step involves working with neigh-

bors to develop hope while working on something small and local we care about in our communities, whether that be a religious group, a park, or a social organization. As physicians we are natural leaders and should consider finding ways to contribute outside the hospital. Not only is hope a way forward for the individual, but research also suggests hope promotes tolerance and conflict resolution, which is crucial at times of wide social divisions.

As hospitalists, we seek to provide comprehensive person-centered care; providing hope is a way to move our care beyond simply giving drugs and durable medical equipment. Explicitly bringing a hope mindset to our

encounters and passing this on to our patients does require a little time. We need to ask questions: Where do you find joy? What are the biggest challenges you face? What are you hoping for in the next phase of your life? Our interdisciplinary teams can help us in this process, but when we lead, the impact will be much greater. Hope improves compliance, self-efficacy, recovery, and even life expectancy. In these conversations, we will undoubtedly find information that will help in diagnostic and therapeutic processes too. Importantly, the connections created will benefit both the patient and the physician. My most memorable moments as a hospitalist have come not from diagnostic “zebras,” but from moving conversations at the bedside.

Hope is future-facing, a liminal space, a threshold, and an emotion that keeps us moving forward with intentionality, enthusiasm, and curiosity. At times, we can almost literally feel hope lifting our body toward our goals, buoying us up, and pulling us forward.

Hope is also a mindset and a practice that encourages us to be our best selves as we work towards making a better future. Maria Popova, blogger and essayist, says, “These days I am less certain I will see the rosy outcome I would like, but I am more determined to meet the future with the best version of myself.” As healers, we should bring hope to the bedside. Let our conversations guide our patients toward this hope mindset. As a team, creating a discharge prescription for hope should be one of our goals in hospital medicine. ■



Get Published!

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.



Don't Miss Out on SHM Converge 2025

By Gopi Astik, MD, MS,
FACP, SFHM

At this time of the year, my dedication to my New Year's resolution is dwindling, and the weather here in Chicago is leaving a lot to be desired. During times like this, I find looking forward to something is what keeps me sane. SHM Converge 2025, SHM's annual conference, is in Las Vegas this year from April 22 to April 25 and is definitely something to look forward to. If you are already registered or are considering joining us, let me share a few reasons why you should join us for the largest event in hospital medicine.

My experience with SHM's annual conference

I remember my first SHM annual conference in 2016 like it was yesterday. After working for a few years to cover for colleagues attending the conference, I FINALLY had the chance to go. I took pictures of the large SHM sign and was so excited about the tote bag. What really struck me, though, was that I was surrounded by thousands of people, from all over the country, who did the same job. I had so many questions, but even though I'm an extrovert, figuring out where to start was daunting. I looked at the schedule at least 10 times because I couldn't decide what sessions to go to.

Despite my timidity, I still learned so much. The atmosphere lends itself to meeting new people who you sit near or who are part of your table during a workshop. I was surprised how easy it was, especially if I teamed up with a colleague. We challenged each other to meet one or two people per day but far exceeded that with very little effort. These contacts have now become my network of external colleagues, mentors, and sponsors who I reach out to frequently.

Why should you attend SHM Converge?

Attending SHM Converge offers invaluable opportunities for networking, skill enhancement, and knowledge sharing with your colleagues. It provides a unique platform to connect with peers, industry leaders, and potential collaborators, fostering professional relationships that can lead to future career advancements. The Annual Conference Committee worked diligently to create a program of workshops, keynote speeches, and panel discussions, allowing attendees to stay updated on the latest topics, technologies,



and best practices in hospital medicine. Furthermore, the dynamic environment encourages creative thinking and inspiration, enabling clinicians to return to their workplaces with fresh ideas and perspectives.

More clinical content this year—thanks to your feedback!

You know those evaluations you fill out at the end of the conference, and you wonder if anyone reads them? Well, we do! The first thing we do when we start planning the conference for the next year is review the comments in the evaluations. We solicit feedback from those at the conference too, so look for committee members with an Annual Conference Committee Member ribbon on their lanyards and share your feedback or ideas. The feedback we receive the most is for more clinical content. We've added more clinical sessions to cover the general updates in topics like pneumonia, gastrointestinal, and hepatology but also specific topics like heart failure management, cardiac biomarkers, and management of immunotherapy. As a geriatrician, I'm excited about the updates in delirium management.

This year, we look forward to welcoming keynote speaker Sandeep Jauhar, MD, PhD, a practicing cardiologist with a PhD in experimental physics. He is also an award-winning author and contributing opinion writer for

The New York Times. His session, "Burnout and Wellness: How Hospital-Based Physicians Are Coping in 2025," will be another can't-miss event on the schedule.

Something we celebrate about SHM Converge is that almost all sessions are based on proposals submitted by you! Each proposal is independently reviewed by at least three members of the Annual Conference Committee or other delegates from specific SHM committees. After independent review, the scores and reviews are adjudicated by the committee to ensure we have important topics covered along with new and timely topics. We're often looking for people to present clinical topics so if you have an interest, I suggest submitting a proposal for 2026. If you choose to submit a proposal, spend time putting it together. What can be accomplished in an hour? How is the session organized? Why is this topic important to all hospitalists? We also look for opportunities to feature junior faculty who have given the same talk at a local or regional conference—this is another tip for those hoping to speak at SHM in the future. Applications will open next month.

Bring on the competition!

What's a conference without some healthy competition? I'm always amazed by the content at the research, innovation, and clinical vignettes competition and look forward to hearing about posters during the conference and at



Dr. Astik is an assistant professor of hospital medicine at Northwestern University Feinberg School of Medicine and medical director at Northwestern Medical Hospital, both in Chicago, and the 2025 Converge Course Director.

the finals. Look ahead at poster content and plan to attend specific posters just like you plan content. I also strongly recommend going to support your colleagues who are presenting. Standing there alone to present is awkward and vulnerable—everyone needs a hype squad!

The second annual MED-TED competition is another session I'm so excited about. This is an opportunity for junior faculty to present short chalk talks to a panel of judges (and a big crowd) to receive feedback and the opportunity to give an invited talk—at SHM 2026! Last year's winner, Dr. Tyler Larsen, will be giving the talk, "Teaching Snapshots: Leveraging Clinical Images to Improve Physical Diagnosis."

Shark Tank is another fan-favorite session where people present project ideas to a panel of esteemed judges. It's a great way to hear about project ideas and you can learn so much from the questions and feedback from judges. We hope you will attend some of these sessions!

What are you waiting for?

There's so much more amazing content at the conference including point-of-care ultrasound, leadership, quality improvement, and many, many more topics. Plus, Las Vegas is always a good time with restaurants, shows, and great weather to enjoy in the evenings. Scan the QR code below to register and we hope to see you there! ■



JHM Thinks Outside the Box with Innovations Corner and Point-Counterpoint

Part 1 in a series about the *Journal of Hospital Medicine's* publishing opportunities

By Thomas R. Collins

Realizing that patients cared for at rural and critical-access hospitals struggle with access to interventional endoscopy procedures at tertiary care centers, a Minnesota hospital began a bold project in 2021: The hospitalist team began offering round-trip procedures in which patients would be transported to St. Cloud Hospital, have the procedure performed, and be transported back to their local hospital, in some cases 100 miles away, that same day.

The project has been a success, but thanks to a new feature in the *Journal of Hospital Medicine* (*JHM*), the effort hasn't stopped there: It is the topic of one of the reports in the journal's Innovations Corner, its newest article type.¹ The articles include an easy-to-follow visual depiction of the project that allows ideas to be quickly conveyed to administrators, should they consider rolling out such a program of their own.

Innovations Corner joins the Point-Counterpoint article series in which an important hospitalist topic is assessed from two opposing perspectives rather than as a standard article. Such features present well-documented and well-researched topics in digestible and untraditional ways in order to best serve readers, *JHM* editors say.

"Innovations Corner encourages a more engaging experience for our readers, making it easy for them to stay informed and inspired in our rapidly evolving field," said *JHM* editor-in-chief, Samir Shah, MD, professor of pediatrics at the University of Cincinnati. "The point-counterpoint format introduces readers to contrasting perspectives, sparking critical thinking by presenting well-supported arguments from different viewpoints—a dynamic that traditional reviews and commentaries lack."

Submissions for the Innovations Corner and Point-Counterpoint can be sent through *JHM's* website, which has a "no hassle" process designed to be simple and streamlined, allowing



Dr. Sata

Journal of Hospital Medicine®

free-format submissions and then later guidance on manuscript formatting, if needed.

Suchita Shah Sata, MD, SFHM, deputy editor at *JHM* who oversees the Innovations Corner series and is an associate professor of medicine at Duke University in Durham, N.C., said the articles are a way for hospitalists leading improvement initiatives to showcase their work in an increasingly competitive publishing environment.

"There is a great market for multi-center research collaborations and large-scale quality improvement research, and the publishing bar for many of the existing journals that publish QI [quality improvement] work has gotten pretty high—it's rare for single-center, hospital-based innovations to meet that publication mark compared to other existing larger scale projects," Dr. Sata said. "At the same time, hospitalists around the country are doing essential work locally, innovating to improve care for their patients at their own institutions and own health systems."

It's a way for other hospitalists and centers to learn of problem solving they might be able to implement themselves, she said.

"Other hospitals and systems across the country are experiencing similar problems and can learn from the successes and challenges that other teams have experienced."

In the same-day round-trip interventional endoscopy project in Minnesota, hospitalists reported that 84 patients benefited from the service over 20 months, with very few needing admission to St. Cloud Hospital after their procedures and none needing transfer back to St. Cloud once the trip was complete.¹ But researchers said that communication with the anesthesiology team, ambulance service, and support from advanced practice providers and nurses was crucial to success.

The piece, as Innovations Corner articles do, includes not only a visual abstract but also a QR code that can be used to connect readers quickly to the study author by email if they have more questions.

"It helps other places to say, 'We can do this, we should do this, I know people who have done it, let's scan the QR code and email the author,'" Dr. Sata said. "This is not impossible even if it sounds like a really big lift and it's good for our patients.' And as hospitalists, we are the ones leading that innovation and bringing our innovation care forward."

Another piece reported on a project at Johns Hopkins that found the best way to offer feedback to residents to cut down on wasteful lab testing, was through individual communication in the middle of the academic year, rather than in groups or at the beginning or toward the end of the year.²

"Every hospital has struggled with the idea of excessive lab testing and we know it's a problem—the question is how do you fix it?" Dr. Sata said. "And they actually fixed it and studied it and found a way to time that feedback."

She said she looks for projects that are relevant and generalizable.

"What really excites me when I see papers submitted to us are the ones that immediately strike us as, wow, that's a problem that so many other places probably are dealing with and this is a really unique solution or a unique process that's implemented to try to solve this problem," she said. "It could be replicable on a broader scale and not just something that relies on the immediate local culture."

Dr. Sata said she was drawn to the feature, which she has overseen since its inception in April 2024, in part because she had spent the prior year as a digital media editorial fellow at the journal, and the idea of a series that incorporates a visual abstract design was appealing.

She said she also liked the idea of encouraging innovating hospitalists to publish their work.

It can be, she said, "daunting to think about publishing this work, and the intimidation of it prevents a lot of people, including me, from even trying. And so that was another avenue. We want

to find a home that is friendly to authors and also high-quality, peer-reviewed science."

The Point-Counterpoint series takes a similar outside-the-box approach to presenting hospitalists with valuable data and discussion.

Zahir Kanjee, MD, MPH, a deputy editor at *JHM*, hospitalist at Beth Israel Deaconess Medical Center, and assistant professor of medicine at Harvard



Dr. Kanjee

Medical School, both in Boston, said he was drawn to the idea of a topic discussed from different angles and has been overseeing Point-Counterpoint since April 2022, just after it was launched.

"I was interested in the idea of really engaging with the topic from both sides and working with a group of authors who had different perspectives on a topic that was relevant to all of us," he said. "It was fun to get to learn both perspectives and it was a neat opportunity to dive into something that we don't always think about or don't always examine."

The aim of the series, he said, is to approach and debate a topic "in a scholarly and evidence-based manner in a way that is easy to read and fun to read and engaging."

In a Point-Counterpoint on whether to continue to use the SOAP—subjective, objective, assessment and plan—method for chart notes, one side argued that SOAP has outlived its usefulness, contributed to note bloat and even inhibited clinical thinking, while the other argued it still serves many purposes, including helping with patient safety, communication, and assisting clinical reasoning.³

Despite the detailed arguments, the piece has a fairly breezy feel and even touches of humor.

Dr. Kanjee said he leaves the authors free to write how they want, and this can lead to more engaging pieces.

"I think people's passion for the topics tends to drive the tone," he said. "People will approach me often with ideas of things that they're passionate about and want to write about and want to discuss and want to dive into, and I think that that passion and excitement translates into an

engaging article.”

The styles of the articles can vary, he said.

“Some writers want to do things a little bit more formally, some writers feel a little bit more comfortable being more whimsical, and I think either of those is fine as long as the topic is interesting, relevant, and the articles engaging to the readers,” he said.

He said he looks to publish

articles with diversity in thought, demographics, practice settings, and geography. Sometimes, there is a separate team of writers for the point and the counterpoint. But sometimes, the same authors take on both sides, “which some folks feel gives them a little bit more freedom to comment on things and write about things,” he said.

“What I definitely have seen and experienced myself is people thinking about things in a new

way” and “really seeing the other side’s perspective,” he said.

Some of the Point-Counterpoints have led to robust discussions in *JHM* Chats on the X social media platform.

“It’s been really nice,” Dr. Kanjee said, “to see a community engage around these topics and really discuss and think more critically about our field and about the care that we provide.” ■

Tom Collins is a medical writer in South Florida.

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Technology

As Wearable Monitors Proliferate, Hospitalists Weigh How to Use Them

By Thomas R. Collins

Charumathi Raghu Subramanian, MD, a hospitalist and second-year clinical informatics fellow at the University of California San Francisco School of Medicine in San Francisco, remembers a patient in her care who was wearing a continuous glucose monitor (CGM), a little disc that adheres to the arm, where a tiny, embedded filament measures, with the help of a smartphone app, interstitial blood sugar, considered a reliable proxy for blood sugar.



Dr. Subramanian

These CGMs are typically worn by diabetics as well as health aficionados in the course of their daily lives to help them better understand how their eating, exercise, and sleep habits affect their blood sugar. But once patients are admitted to the hospital, of course, they continue to produce data, posing a question of how they’re to be used.

Dr. Subramanian’s patient saw, via the CGM, that their blood sugar was falling, and alerted her “before they had symptoms.”

“It definitely alerted us earlier than the needle check,” she said.

Romil Chadha, MD, MBA, MPH, FACP, SFHM, chief medical informatics officer for UK HealthCare at the University of Kentucky in Lexington, Ky., has had similar favorable experiences, but said there is another side of the coin, as well.



Dr. Chadha

His division once had a patient with a CGM who followed the glucose level closely and thought the hospitalist staff was not keeping it sufficiently under control.

“You all,” Dr. Chadha recalls the patient telling the hospital staff, “don’t know what you are doing because I can manage my blood sugars at home much better than this.” In this case, the levels were not falling into a problematic range, and it was likely a case of shared decision making and goal setting, requiring a conversation with the patient. Dr. Chadha pointed out that the patient wasn’t at fault for paying attention to the data.

What to do with the data

As wearable devices—such as CGMs, smartwatches, and rings—become more common in helping people track every health indicator from glucose levels to oxygen levels to heart rate to steps to sleep hours, they inevitably end up not just in living rooms, bedrooms, and gyms, but also in hospital rooms. Hospitalists caring for the patients wearing them are not always certain what to do—if anything—with the data they are incessantly producing.

Typically, there is no regulation overseeing the devices, said Mihir H. Patel, MD, MPH, MBA, SFHM, a hospitalist and medical director for virtual medicine at Ballad Health in Johnson City, Tenn., where he also chairs the inpatient clinical informatics council. He is the current chair of SHM’s Health IT Special Interest Group.



Dr. Patel

“These wearable devices, like smartwatches or Fitbit health trackers, have become widespread because they are now accessible to the general population,” Dr. Patel said. “However, the critical question is whether these devices are U.S. Food and Drug Administration (FDA)-approved for inpatient use. In most cases, they are not.”

With online testimonials promoting the value of tracking glucose levels, CGMs are becoming one of the most common devices, with the most potential for having a tangible impact on patient care.

Their use has fallen into a gray area, with the FDA saying it would not object to the use of CGMs in the inpatient setting, in response to questions about whether they might be a tool to limit unnecessary interactions to prevent the spread of COVID-19. But this was short of a traditional approval for the devices in this setting.

Dr. Patel said hospitalists may use data from CGMs, but with limitations. While a patient may still require fingerstick blood glucose checks, for example, the frequency may be reduced. But CGM data is never the sole basis for critical treatment decisions, he said.

“Hospitalists do rely on this data, but it’s essential to have a backup or more precise method when necessary,” he said. “You don’t remove the CGM sensor. Rather, you use it as a supplementary data source. Patients can monitor their glucose levels and report them to the nurse, which can be valuable for ongoing care.”

In a 2022 study, researchers at Lahey Hospital and Medical Center in Burlington, Mass., compared point-of-care and lab glucose readings with simultaneous readings from CGMs, across 808 total comparisons in 28 patients with COVID-19. They found that there was a 13.9% average difference between the point-of-care and CGM readings, a 10.9% average difference between the lab and CGM readings, and an average of a 13.2% difference overall, leading the researchers to conclude that using a CGM is a “reasonable alternative to standard of care,” with proper protocols and safeguards in place, for reducing hospital staff exposure. However, they said further study was needed to validate CGMs for safety, accuracy, and efficiency.¹

For specific conditions, such as diabetic ketoacidosis (DKA), there is no substitute for fingerstick blood glucose testing, Dr. Patel emphasized, because there are well-defined guidelines for treating DKA that require validated and accurate blood glucose readings.

He added that “if a patient is hospitalized for a condition like chest pain and you just need routine blood glucose monitoring as you would for any patient with diabetes, you could reasonably rely on CGM data for preliminary information.”

In some cases, Dr. Subramanian said, CGMs could be used to reduce the number of sticks a patient would need, particularly the midnight-to-2-a.m. sticks.

“I think when someone has a CGM, we can be even more reassured and just let them sleep,” she said.

Possible advantages to monitoring devices

Stephanie Murphy, DO, FHM, physician implementation and transformation lead with Medically Home, which contracts with healthcare systems to start and expand their hospital-at-home programs, said that monitoring devices that patients wear might provide an extra data point a physician could use to help tweak their evaluation and management of a patient being cared for in the post-acute setting. She emphasized that hospital-at-home programs are under the same facility bylaws as the traditional brick-and-mortar hospitals with which they’re associated, limiting how much they can be



Dr. Murphy

incorporated into care.

“If a patient brought it forward and said, ‘Oh my gosh, I’m noticing this,’ would you react to it? Potentially,” she said.

Dr. Murphy said CGMs could be an advantage mostly in post-acute programs.

“Often, patients are averse to pricking themselves three, five times a day even, but they’re a whole lot less averse to taking a phone and scanning their arm,” she said. “So, I think there’s a ton of utility in CGM in particular,” more so than other types of wearable monitors such as smartwatches.

The remote patient monitoring (RPM) technology that a patient uses while receiving hospital-at-home care does not follow a patient to a brick-and-mortar facility, should a patient need to go there. It is “like a patient going from a telemetry unit and transferring to a floor,” in which new monitoring technology is used.

Hospitalists say that Apple watches and other smartwatches, despite their ubiquity, tend to figure in less often to the work that they do. But sometimes, they can, Dr. Patel said.

If a patient is in the hospital for, say, gastritis, they would probably not be on hospital telemetry to track heart activity. But if they happened to have a fast heartbeat while there, a smartwatch could potentially be helpful, he said, because it might have stored some information about heart rate and rhythm during the episode.

“Something is better than nothing, I would say, but it is FDA-not-approved so I cannot 100% make a diagnosis based on that,” he said. “But you can at least start investigating based on that.” Perhaps an EKG could be ordered after it seems the patient had had some sort of heart incident, or maybe the patient is kept for another 24 hours, or maybe telemetry monitoring is started.

The patient’s role

Dr. Subramanian said she has not encountered smartwatches much in her practice, but when she does they usually involve younger patients, in their 30s and 40s, while older patients she sees as inpatients mostly do not wear them, although she can imagine smartwatches having a role. She has also encountered the Oura ring, although it did not figure into the care in the inpatient setting.

Dr. Chadha said the use of wearables, including smartwatches, usually depends on the patient bringing the devices and their data to the physicians’ attention, just like other parts of a patient’s medical history.

“The hospitalist is dependent on the patient to get anything out of that,” he said. “It is not very different than a patient telling (a doctor), ‘These are my five medications that I take over the counter, this is the surgery that I had five years ago.’”

At his center, a policy on endocrine consultation says that data from CGMs and insulin pumps should be used only as a complement to point-of-care data, and not as supplemental data with equal standing.

Subha Airan-Javia, MD, an associate professor of clinical medicine at the Perelman School of Medicine in Philadelphia, who was previously associate chief medical informatics officer for Penn Medicine in Philadelphia, focusing on inpatient technology, said that most hospitalists have not yet made it standard practice to incorporate wearable device data into their care routines, but that this is largely due to a lack of integra-



Dr. Airan-Javia



tion of that data into our clinical technology systems.

“I suspect that most hospitalists do not know when their patients have a wearable device,” she said. “It is not yet a part of our repertoire to regularly ask a patient things such as, ‘Do you have an Apple watch? Do you regularly check your heart rate? Have you looked at your pulse ox levels on your Apple watch? Have you ever been alerted to an irregular heart rate? Do you use a glucose monitor?’”

Future of wearables in medicine

The rate of change is slow, but it is happening, Dr. Airan-Javia said. Insulin pumps, for example, used to be disconnected when a patient was admitted to the hospital, but at her hospital, the policy was changed several years ago and now they are left on and used in care, she said. Learning to incorporate these data is more work at first, but it was worth it for better outcomes, she said. Patients still get pricks for glucose checks, but less insulin sticks, if any, because they’re well-controlled, she said.

Dr. Airan-Javia imagines a system in which a smartwatch’s data are line items in a patient’s vitals, right along with data from telemetry devices, and ideally even overlaid with the same data from telemetry so they can be easily viewed together, with the source of the data clearly identified.

“We absolutely have an information overload problem in general in medicine, but with good design, I think we can make it useful in the right situations,” she said.

She said the devices are “a huge untapped resource.” She said there’s an opportunity to have data added into hospital technology without hospitalists having to remember to ask about it but said that will probably take quite a bit of time, “not because it’s technically not feasible but rather because of the red tape that it takes to make any changes in electronic health records.” But a good starting point would be to encourage hospitalists to inquire about the device “and make it almost a part of the review of systems.”

Dr. Patel said that the value of the data from patient’s personal devices will increase as they’re integrated into the electronic health record system.

“For instance, you could review a patient’s

blood oxygen saturation readings from the past few days or their heart rate history. This data can help inform clinical decisions,” he said.

He said that hospitalists can even identify potential conditions like atrial fibrillation or sleep apnea based on sensor data, but that a more definitive and accurate test would be required for a final diagnosis during hospitalization.

“As more device-generated data becomes available, there will likely be a shift toward more personalized treatment plans, with hospitals leveraging this information to tailor interventions to individual patients,” he said.

Dr. Subramanian said there are too many major hurdles for these devices to become central to patient care in the near future. They would need FDA approval, and security and privacy concerns have to be overcome.

“There’s so much that is going to need to be figured out,” she said. Still, she sees them as potentially more useful than they are now. For instance, a recent systematic review in *JAMA Network Open* found that wearing devices that measure physical movement boosted the activity levels of patients in the hospital. Most other outcomes were not found to have changed, but with more thoughtful implementation they could boost outcomes, including length of stay and readmission rates, she said.²

Dr. Chadha acknowledged that wearable monitoring devices “make life both easier and [more] difficult for hospitalists.”

But he added, “I think most of this is a positive step. The challenge is the integration, the IT, the regulation, the patient consent, and the display format. I think configuring the tools rather than resisting them would be my thing.

“I see them as more positive,” he said. “What I do today is not what I did 15 years ago and is not what I’ll be doing in 10, 20 years.” ■

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Understanding the Inflation Reduction Act's Impact on Prescription Drug Costs

Perspectives from a physician and pharmacist

By **Arunab Mehta, MD, MEd, FACP, FHM,**
and **Stephanie Parton, PharmD, BCPS**

Prescription drug costs in the U.S. are among the highest in the world, surpassing those in other high-income nations by more than two and a half times. In 2023, the U.S. healthcare system's total drug expenditure soared to an unprecedented \$722.5 billion, driven by increased spending per prescription, higher drug utilization, and the ongoing development of new medications.¹ The financial strain from these rising costs is felt across all sectors of healthcare, including patients, payers, prescribers, and policymakers. A 2024 Kaiser Family Foundation national poll revealed that 55% of Americans are concerned about drug affordability, with 21% admitting they skipped filling a prescription due to cost, opting instead for over-the-counter alternatives.²

The root of the U.S.'s high prescription drug prices lies in its unique system, which allows pharmaceutical manufacturers to set their own prices for products. Unlike other advanced nations where national health insurance systems negotiate or cap drug prices based on their therapeutic value, the U.S. has historically lacked mechanisms for such price regulation. For instance, in England and Wales, the National Institute for Health and Care Excellence uses a cost-utility threshold of £20,000 to £30,000 (\$25,000 to \$40,000) per quality-adjusted life year to determine whether a new drug should be covered under the National Health Service (NHS).³ Drug companies' ability to maintain such high prices in the U.S. is due to two factors: protection from competition and negotiating power.

Among public payers, Medicare covers approximately 67 million adults, most aged 65 years and older, for outpatient (Part D) and inpatient (Part B) drug costs. Medicaid, the federal- and state-funded health insurance program for low-income individuals, covers prescription drug costs for another 72 million Americans.⁴ Other public payers include the Veterans Health Administration, the Department of Defense healthcare system, state prison systems, and the federal employee health benefits program. Prior to 2022, Medicare and Medicaid were prevented by federal law from leveraging their purchasing power to secure lower drug prices while still required to provide broad coverage for therapeutic medications.

The Inflation Reduction Act: a turning point

In August 2022, the Biden-Harris Administration introduced the Inflation Reduction Act (IRA) as a landmark measure to curb drug costs and expand benefits for Medicare beneficiaries. A cornerstone of the IRA is the Medicare Drug Price Negotiation Program, which for the first time in U.S. history empowers the federal government to negotiate prices for certain high-cost drugs without generic or biosimilar competition.

The IRA includes provisions projected to save Medicare beneficiaries approximately \$1.5 billion annually in out-of-pocket expenses once fully im-

plemented. The first round of negotiations in 2023 targeted 10 drugs that collectively accounted for 20% of Medicare Part D's gross prescription drug costs and \$3.9 billion in out-of-pocket expenses for beneficiaries.⁵ These medications, which treat conditions such as diabetes, heart failure, cancer, and autoimmune diseases, will have negotiated prices implemented by 2026.

The scope of negotiations will expand over time:

- **2026:** 10 Part D drugs
- **2027:** 15 Part D drugs
- **2028:** 15 additional Part D and Part B drugs
- **2029 and beyond:** 20 additional Part D and Part B drugs annually

The 2022 Inflation Reduction Act's prescription drug provisions include: establishing the Medicare Drug Price Negotiation Program, requiring drug companies to provide Medicare with rebates if drug prices rise faster than inflation, capping yearly out-of-pocket spending for Medicare Part D enrollees to \$2,000, limiting monthly insulin cost to \$35 for Medicare Part D enrollees, limiting cost sharing for adult vaccines covered under Medicare Part D, expanding low-income subsidy program under Medicare Part D to 150% of the federal poverty level, and getting rid of the "donut hole" coverage gap for patients starting this year.

These selections will focus on medications with the highest Medicare spending, ensuring that savings benefit the greatest number of beneficiaries. The Congressional Budget Office (CBO) estimates that the drug negotiation provisions will save Medicare \$98.5 billion over 10 years (2022 to 2031).⁶ See Table 1.

Physicians' view: ethical alignment with practical concerns

From the physician's perspective, the IRA represents a significant step toward reducing healthcare inequities. By improving medication affordability, the IRA promotes better medication adherence, which is critical for managing chronic conditions like diabetes, heart disease, and hypertension. Patients are more likely to fill and take prescribed medications when they are affordable, reducing the risk of complications and hospitalizations. We see patients who have chronic obstructive pulmonary disease who can ill afford their inhalers and have recurrent exacerbations due to the inability to get adequate inhalers to control their symptoms. Given the recent introduction of price caps, some companies have voluntarily introduced price caps for their inhalers before one is enforced on them.

Multiple inhalers now are price-capped at \$35:

- Atrovent HFA (ipratropium bromide HFA) inhalation aerosol
- Combivent Respimat (ipratropium bromide and albuterol) inhalation spray
- Spiriva HandiHaler (tiotropium bromide inhalation powder)
- Spiriva Respimat 1.25 mcg (tiotropium bromide) inhalation spray
- Spiriva Respimat 2.5 mcg (tiotropium bromide) inhalation spray
- Stiolto Respimat (tiotropium bromide and olodaterol) inhalation spray



Dr. Mehta



Ms. Parton

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- Striverdi Respimat (olodaterol) inhalation spray
- Airsupra (albuterol and budesonide)
- Bevespi Aerosphere (glycopyrrolate and formoterol fumarate) inhalation aerosol
- Breztri Aerosphere (budesonide, glycopyrrolate, and formoterol fumarate) inhalation aerosol
- Symbicort (budesonide and formoterol fumarate dihydrate) inhalation aerosol
- Advair Diskus (fluticasone propionate and salmeterol inhalation powder)
- Advair HFA (fluticasone propionate and salmeterol inhalation aerosol)
- Anoro Ellipta (umeclidinium and vilanterol inhalation powder)
- Arnuity Ellipta (fluticasone furoate inhalation powder)
- Breo Ellipta (fluticasone furoate and vilanterol inhalation powder)
- Incruse Ellipta (umeclidinium inhalation powder)
- Serevent Diskus (salmeterol xinafoate inhalation powder)
- Trelegy Ellipta (fluticasone furoate, umeclidinium, and vilanterol inhalation powder)
- Ventolin HFA (albuterol sulfate inhalation aerosol)

However, there could be some potential challenges consequently.

Impact on Innovation: Pharmaceutical companies argue that price controls could discourage investment in research and development, slowing the pipeline for new therapies. While the CBO estimates only a modest impact—13 fewer new drugs out of 1,300 over the next 30 years—we worry that any delay in innovation could affect their ability to offer cutting-edge treatments.

Administrative Burdens: Price negotiations may lead to stricter insurance formularies and increased requirements for prior authorizations. We already face substantial administrative workloads, and additional hurdles could detract from patient care.

Despite these concerns, most physicians sup-

Table 1. Prices representing Wholesaler Acquisition Cost (WAC) based on a 30-day supply

DRUG NAME	COMMONLY TREATED CONDITIONS	AGREED-TO NEGOTIATED PRICE FOR 30-DAY SUPPLY FOR CY 2026	LIST PRICE FOR 30-DAY SUPPLY, CY 2023	DISCOUNT OF NEGOTIATED PRICE FROM 2023 LIST PRICE
Januvia	Diabetes	\$113.00	\$527.00	79%
Farxiga	Diabetes, heart failure, chronic kidney disease	\$178.50	\$556.00	68%
Jardiance	Diabetes, heart failure, chronic kidney disease	\$197.00	\$573.00	66%
Fiasp; Fiasp FlexTouch; Fiasp PenFill, Novolog, Novolog FlexPen, Novolog PenFill	Diabetes	\$119.00	\$495.00	76%
Enbrel	Rheumatoid arthritis, psoriasis, psoriatic arthritis	\$2,355.00	\$7,106.00	67%
Stelara	Psoriasis, psoriatic arthritis, Crohn's disease, ulcerative colitis	\$4,695.00	\$13,836.00	66%
Xarelto	Prevention and treatment of blood clots, prevention of stroke secondary to nonvalvular atrial fibrillation	\$197.00	\$517.00	62%
Eliquis	Prevention and treatment of blood clots, prevention of stroke secondary to nonvalvular atrial fibrillation	\$231.00	\$521.00	56%
Entresto	Heart failure	\$295.00	\$628.00	53%
Imbruvica	Blood cancers	\$9,319.00	\$14,934.00	38%

port the IRA's goal of making life-saving medications accessible to all patients, particularly those in vulnerable populations. Lowering drug costs aligns with the broader ethical mission of healthcare to reduce disparities and improve outcomes for underserved communities.

Pharmacists' role: advocates for affordability and access

Pharmacists, who often serve as the first point of contact for patients navigating prescription costs, are also optimistic about the IRA's potential benefits.

From a pharmacist's perspective, the IRA will offer millions of Americans essential cost savings by lessening out-of-pocket spending for prescription medications, as we commonly encounter patients who express concern for medication affordability in addition to other life necessities. This leads to reduced medication compliance. For example, a newly diagnosed heart failure patient with reduced ejection fraction would be expected to start at least four to five medications, some of which are brand-name only. Assuming the patient is not in a coverage cap, their monthly heart failure medication copays alone will be over \$100. If this copay is unfeasible, the care team will be faced with a challenging decision and likely need to defer starting guideline-recommended therapies, ultimately impacting the patient's overall mortality risk. Therefore, the implementation of the \$2,000 out-of-pocket yearly prescription-drug cap, monthly insulin price caps, eliminating the coverage gap, and the Medicare Drug Price Ne-

gotiation Program provisions will help relieve financial burdens and improve medication access and health outcomes across the country.

Drug shortages are a common occurrence in the healthcare system and impact clinical decision making daily. Another provision that has a beneficial impact on patients is the implementation of the Medicare Prescription Drug Inflation Rebate Program designed to offset the rise in drug prices secondary to ongoing drug shortages. This program will require pharmaceutical companies to pay Medicare rebates if Medicare Part B or Part D prescription drugs or biosimilar prices increase faster than the rate of inflation.

Yet, some concerns remain.

Supply Chain Challenges: Price negotiations could lead pharmaceutical companies to prioritize the production of more profitable drugs, potentially causing shortages of less lucrative but equally critical medications.

Greater price transparency under the IRA can help pharmacists provide more accurate guidance to patients, reducing confusion and fostering trust.

The road ahead

The IRA's provisions for drug price negotiations have the potential to save billions for both patients and the healthcare system. However, the future of these reforms is uncertain, particularly in the context of shifting political landscapes. The Act, passed through budget reconciliation, could be repealed or revised under a new administration.

For hospitalists, the IRA presents an opportunity to advocate for patients' financial well-being while addressing systemic barriers to medication access. As the number of negotiated drugs expands, hospitalists will need to stay informed about formulary changes and collaborate with pharmacists to ensure seamless transitions for their patients.

While challenges remain, the IRA represents a critical step toward a more equitable healthcare system—one where life-saving medications are within reach for all who need them. ■

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How Hospitalists Can Learn from Diagnostic Errors and Successes

Clinical reasoning, interpersonal connection, self-reflection, feedback, and self-care matter

By **Opeoluwa Olayinka, MD, Venkat Gundareddy, MD, SFHM, and Susrutha Kotwal, MD, MEHP, SFHM**

Hospitalists are at the forefront of inpatient care and are well-positioned to reduce diagnostic errors while promoting diagnostic excellence.

Diagnostic errors, defined as “the failure to (a) establish an accurate and timely explanation of the patient’s health problem(s) or (b) communicate that explanation to the patient,” result from failures in meeting standards of excellence.¹⁻³ Approximately 250,000 diagnostic errors occur in hospitals across the U.S. each year.⁴

Diagnostic excellence lies at the opposite end of the diagnostic error spectrum. It’s the process of accurately and precisely explaining a patient’s health problems and concerns.² To achieve diagnostic excellence, it’s crucial to learn from both errors and successes in patient care; this includes learning from experts and colleagues, seeing numerous disease presenta-

tions, and gaining valuable clinical experience.^{1,5}

Over time, clinicians accumulate useful insights from both diagnostic errors and diagnostic successes. These clinical insights or lessons are valuable for healthcare practitioners striving for diagnostic excellence. In a qualitative study published in the *Journal of General Internal Medicine*, hospitalists at five independently administered hospitals in the Mid-Atlantic region of the U.S. from February to June 2022 were interviewed to identify and characterize the clinical lessons they learned from diagnostic errors and successes in patient care.⁶

In this article, we elaborate on these lessons, provide narrative quotes from the study, and describe challenges encountered by hospitalists for the broader hospital medicine community to reflect upon.

Lesson #1: Develop excellence in clinical reasoning skills

Clinical reasoning includes the ability of the clinician to



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gather and synthesize information and generate hypotheses to make a diagnosis and management plan for the patient.⁷ Hospitalists described lessons learned from all aspects of the clinical reasoning process. Some lessons related to the

clinical reasoning process are further elaborated below.

The importance of basic bedside skills: “A patient had been referred with fever, unexplained cranial nerve deficits, and altered mental status. We had to figure out what

Key Points

1. The pursuit of diagnostic excellence requires learning from both errors and successes in patient care.
2. Key lessons learned and challenges encountered by experienced hospitalists are described with their stories.
3. Consider discussing these lessons and challenges among hospitalists' groups to reflect upon and grow as we all strive for diagnostic excellence in our patient care.

was going on and on the physical exam, there was black eschar in the nose. In a sort of eureka moment, I knew exactly what the patient had—rhinocerebral mucormycosis. It was not a good outcome, but I was able to provide closure to the family.”

The inability to use tests appropriately led to an error: “We had a patient on our service being followed with serial X-rays for non-specific ileus. The patient didn't really look ill, and it wasn't until later in the patient's course that a [CT] scan showed a perforation and the patient ended up dying. As hospitalists, we have cut down on unnecessary tests but knowing when it's appropriate to get more tests rather than watchfully waiting is also critically important.”

The value of humility is learned through experience: “You have to be humble enough to know that you will make errors in diagnosis and management. Sometimes it's because you don't know and other times it's because you become complacent and you're not thinking about those things. But over time, you have to learn from those mistakes.”

Lesson #2: Connect with patients, families, and colleagues to tap into their insights

Insights from patients, family members, and other care team members help us consider and arrive at diagnoses that otherwise would not be thought of.

A hospitalist described how listening to a colleague was advantageous in getting to the correct diagnosis: “It's not only important to listen to patients but also what other members on the team are telling. No one had been able to figure out the diagnosis for a patient as her complaints were vague. The physical therapist who saw her mentioned she complained of her legs being heavy, which made me think of weakness. I sent her for an imaging of her head which revealed a gigantic meningioma.”

Another hospitalist highlighted the value of assessing family members' viewpoints: “It's important to hear the patient's story from multiple perspectives. I picked up a patient with *E. coli* bacteremia with no source. He was seen by infectious disease and the plan was to stop IV antibiotics after a week. However, his wife told me he was having a lot of neck pain. She further raised concerns that he had been able to walk prior to coming to the hospital but now was becoming increasingly bed-bound. We hadn't considered his wife's concerns. An MRI showed an epidural abscess.”

Lesson #3: Use reflection to continuously learn and challenge diagnoses

Self-reflection on the diagnostic process often helped hospitalists improve their diagnostic skills.

A specific example was shared by a hospitalist: “I think self-reflection is very important; should I be open to other diagnostic possibilities? This takes time to build. I was caring for a patient who had been seen by ophthalmology for a lesion in his retina that was thought to be due to cancer. Things got worse quickly, and it wasn't making sense anymore that it was a met. It ended up being *Nocardia*. I think it's important to not just trust the sub-specialist but be able to collaborate if something is making you uneasy, to not anchor on the diagnosis, and to reflect on new information.”

The value of slowing down to reflect is highlighted by this comment: “We had a child with trisomy 21 who had surgery for annular pancreas but wasn't tolerating feeds. X-ray showed air through most of her intestine except for her rectum. She ended up having Hirschsprung's in addition to the annular pancreas. Some hosts can have multiple things and challenging yourself to slow down to run through the differential is a good way to remind yourself of the possibilities.”

Lesson #4: Commit to a growth mindset and actively seek feedback

Actively seeking feedback and committing to a growth mindset were frequently used by hospitalists to improve their diagnostic skills.

A hospitalist commented on specifically getting feedback from patients: “It's important to reach out to patients after they go home. I call them to check how they are doing because in hospital medicine we don't get feedback. Just because we never hear from patients doesn't mean that we were correct in our diagnosis/management. It may be that they are still not feeling well or could have gone to another hospital. I think this is relatively easy to do and provides us with a wealth of information.”

The importance of having a coach is elaborated: “We all have blind spots in our practice. The only way for us to be made aware of them would be through feedback. Having a coach who looks at

our work and gives us feedback is tremendously important to help us improve.”

Another hospitalist remarked on consistently growing as a clinician: “Your education never stops as a clinician. It's that growth mindset. When somebody is giving you feedback, if you get angry and defensive, you're never going to learn. Being open to feedback is very important.”

Lesson #5: Prioritize wellness

Personal wellness was deemed an important component to improve the diagnostic process. Gaining inspiration from outside of medicine and learning to cope with stress aided hospitalists in being better diagnosticians.

Several described lessons learned from outside medicine, such as through reading and practicing mindfulness: “I read a lot of things beyond medicine to understand myself as a leader and to better work with others. I think having a broad interest and being fairly well-read allows us to be better conversationalists. And being a better communicator allows us to get meaningful information from the history to help with the diagnosis.”

“When things are very chaotic, being able to center oneself and be present in the moment is really helpful. We get multiple messages, and it is easy to get overwhelmed and make errors. Before I go to see a patient, I will take five seconds to take a few deep breaths and tell myself I will concentrate on this patient and the family, and really listen to what they are telling me. This will put me in a better state to make a correct diagnosis.”

Challenges hospitalists encounter

Several hospitalists also shared experiences about challenges faced in patient care.

These challenges were described in various forms such as bias contributing to a delayed diagnosis: “A middle-aged woman presented to the emergency department for the fourth time with significant pain in her arm. It wasn't being addressed. Finally, an MRI showed cancer. There was a tendency to dismiss her complaint. You do an X-ray there's no fracture, so that must be a woman's nerves.”

Another hospitalist reported a culture of “not wanting to

admit errors,” and a culture that promoted perfection without acknowledging mistakes: “I think the expectation is to be perfect and anything less is not okay. Any kind of deficiency is very difficult for people to discuss and acknowledge. I think it'd be good to start with the idea that nobody's perfect. We all make mistakes.”

The hospital is always busy, and clinicians explained that covering many patients interferes with their ability to thoughtfully consider all diagnostic possibilities: “We all preach at the altar of clinical care, but we also know how hectic it can be and how unpredictable it can be. That's because it's challenging. It is unfathomable how a physician can admit 10 new patients in a 12-hour shift and do that safely and effectively. It's dangerous, so to minimize diagnostic errors the answer is to try to control the patient care volumes so that they're not excessive.”

Additionally, burnout was described by participants as a burden that represents a major barrier to improving as a clinician: “If you're burnt out, you don't enjoy your work, you can't think straight, you're stressed out at work. Even a very good hospitalist who would not normally make an error could make serious errors if they're burnt out.”

Conclusion

The path to achieving diagnostic excellence is paved by the lessons we learn from both our diagnostic errors and diagnostic successes. In this educational piece, we have further delved into the key lessons learned and challenges encountered while dealing with errors and successes in patient care by hospitalists who were interviewed as part of a qualitative research study.⁶ These findings may be useful as a blueprint for hospitalists and organizations striving to achieve excellence in patient care. ■

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Does AI Portend Sudden Transformations for Hospitalists?

Insights from Dr. Robert Wachter

By Larry Beresford

Hospital medicine pioneer Robert Wachter, MD, MHM, chair of the department of medicine at the University of California San Francisco (UCSF), has tackled some of the big, transformative topics in health care in his published books.

These include medical errors and the search for solutions (“Internal Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes,” in 2005); rollout of the electronic health record (“The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine’s Computer Age,” in 2015); and, coming up in about 18 months, the place for artificial intelligence (AI) in medicine in a new work tentatively titled “A Giant Leap: How AI Is Transforming Healthcare—and What That Means for Our Future.”



Dr. Wachter

At the 28th annual UCSF Management of the Hospitalized Patient conference, founded by Dr. Wachter and held in San Francisco in October, he devoted a keynote address to describing AI’s looming “Hemingway moment” for hospitalists. In Ernest Hemingway’s 1926 novel, “The Sun Also Rises,” a character is asked to explain how his bankruptcy came about, and he replies, “Two ways. Gradually, then suddenly.”

Healthcare, particularly in the hospital, has seen gradual advances in applications of AI, although more slowly than in many other industries. But it may soon see changes coming at great speed, Dr. Wachter said.

He is largely upbeat about what AI can do, although aware of the darker possibilities, even eventually for the jobs of physicians. “In a few years, I’d say, healthcare will be transformed [by AI], mostly for the better... in ways that will be exciting, a little scary, a little disorienting, but much more quickly than we’re used to.”

Computer tools can now do a variety of tasks they couldn’t do before, such as making predictions and diagnoses, summarizing huge amounts of data and text, and producing videos and pictures. “AI can connect something that it reads in the chart with an image of an echocardiogram, do multi-modal work, and then communicate that in ways that feel like natural language, like it’s talking to you or the patient. That’s all new.”

For now, the tools that are ready for medical prime time mostly work in a single mode, such as using language or using discrete data, he said. But over time, the computer will pick up and learn from all the senses that humans use. The electronic health record (EHR) manufacturing giant Epic and its competitors are now partnering with AI companies to integrate such tools into their systems.

What is AI?

Artificial intelligence refers to a set of computer systems that can perform tasks that previously required human intelligence, such as learning from experience. It also describes machine learning and natural language processing. Dr.



Wachter contrasted AI before and after November 30, 2022, the date when OpenAI rolled out its landmark AI tool ChatGPT, “where you could interact with it, and it would get back to you in an almost conversational tone.”

Generative AI, which can create new content, is rapidly being improved upon. He suggested that hospitalists should try to get comfortable practicing with ChatGPT and finding out what it’s good at—and not.

For himself, Dr. Wachter uses ChatGPT 4o and similar tools several times a day to search for information and get answers to questions that would take a lot longer to investigate without it. He offered examples, such as asking for a summary of the published writings of an expert he was planning to interview for his book and a summary of the literature on healthcare bias associated with AI.

In his talk, Dr. Wachter revisited one of medicine’s previous big transformations, from paper medical charts to the digital world of the EHR, which offers a lot of lessons about digital transformation in healthcare and its unanticipated consequences. The EHR transformation happened fairly quickly, but only after the federal government opted to invest \$30 billion to get hospitals and physicians to computerize.

“And obviously it worked,” Dr. Wachter said. In 2008 fewer than one in 10 hospitals had an EHR; by 2015 fewer than one in 10 did not. But this transformation often didn’t go smoothly, with doctors feeling demoralized as they became expensive data entry clerks.

“EHR enabled a lot of outside entities to make us do stuff that’s incredibly time-consuming.” To make all that data entry worthwhile, he said,

“Maybe I should get useful decision support or guidance to make me a better clinician.” But in many cases, there was remarkably little useful return from the EHR.

Dr. Wachter cited Erik Brynjolfsson, a professor at Stanford University in California, where he directs the Digital Economy Lab, who identified the productivity paradox of information technology.¹ The paradox, Brynjolfsson observed in 1993, is it often takes several years for industries to start realizing the promised productivity gains of a new technology. The key to unlocking this productivity paradox, Dr. Wachter said, is not just implementing new and improved technology, which takes a while to mature.

Organizations also need to remodel themselves—a process that Brynjolfsson calls complementary innovation—to allow them to take full advantage of new digital tools. “We just took the EHR and put it into our workflow,” Dr. Wachter said. As a result, the doctor’s note in the EHR looks like a piece of paper filed under a tab, just as it did in the paper chart. In this case, the system failed to take advantage of the potential for new models and paradigms. Will generative AI avoid those pitfalls?

AI in practice

Some of AI’s documented achievements to date include the ability to pass medical board exams, convey perceived empathy to patients and families, briefly summarize important information from extensive hospital charts, write prior authorization requests, and enhance billing processes.

“I think digital scribes are coming soon to hospitals. People are already using them,” Dr. Wachter said. AI predictive tools, such as for sepsis or cardiac arrest or hospital bed availability, haven’t been that great—yet. “We’re beginning to see precision medicine, which has been around the corner for 30 years. When you order anti-platelet agents at UCSE, the EHR will look at the patient’s genetic predictors for which one they’re likely to respond to and give you some guidance.”

There are also a host of ethical issues raised by AI, which are far from resolved. These include disparities and biases that get imported into AI products, along with privacy, security, and legal concerns. There has been a propensity for what are called “AI hallucinations,” where it produces something that sounds reasonable but is completely fabricated. These are happening less with newer systems. “The AI of today is the worst it’s ever going to be,” he said.

Human vigilance will continue to be needed over important medical decisions guided by AI, but humans can become complacent by relying on AI. “Humans will be tasked with being safety bulwarks—which is inherently unsafe,” Dr. Wachter said.²

“I think in areas that are high stakes, like diagnoses or appropriate treatments, the human will be the final arbiter for a considerable period of time. Partly because of medical/legal risk, but partly because we don’t know how to send a bill to anyone unless there’s a human attached to it. But I think you’re going to start seeing more real-time decision support that will be highly relevant to hospitalists rolling out in the next couple of years.”

The future of AI

During his keynote presentation and then in a subsequent Zoom interview with *The Hospitalist*, Dr. Wachter demonstrated how he uses his AI by speaking a problem into his smartphone connected to GPT software and asking for its help. “I’m a doctor, and I’m about to go in and talk to a patient,” he posed. That hypothetical patient was a 37-year-old woman with a new diagnosis of breast cancer with two positive lymph nodes. She has two small children. “I want to tell her exactly what the diagnosis was and give her some sense of the prognosis, but also leave her with hope.” Dr. Wachter explained. “Can you help coach me on this conversation?”

The disembodied voice responded in seconds with a five-step process for how to approach a hospitalized patient newly diagnosed with breast cancer in a way that has compassion and precision. “It’s so important to approach this with empathy and clarity,” it said. “First, create a private and comfortable setting.”

Then start by gently explaining the diagnosis, using clear and compassionate language, GPT advised. Provide information at a measured pace, in small, digestible amounts. Be honest about the seriousness of the diagnosis, acknowledge its emotional impact, and express the doctor’s commitment to supporting her. Offer emotional support, resources, and next steps.

In his talk, Dr. Wachter acknowledged that much of the potential for AI can be unknown and scary, adding that it’s hard to predict the future of medicine in a world dominated by AI. “I guess my bottom line is that we’re all trying to navigate somewhere between ecstatically excited and terrified.”

He leans toward the excited part. For the next 10 or 15 years, “I think we’re actually going to have something of a golden era in medicine, where a lot of the current tasks that don’t involve practicing at the top of our license, that don’t really take the training and the intellectual firepower of physicians, particularly hospitalists, will be taken off our plates. Or at least we’ll get help with them, and it will allow us to do the things that we are uniquely situated to do better and safer and more efficiently,” he said.

How long that golden era will last, Dr. Wachter doesn’t know. “I’m worried about what medicine is going to look like 30 years from now, and who’s going to have a job.” He has a daughter and a son-in-law now in medical residency training. What will be their future? But in some ways, he said, physicians are better protected than most other professions. “If they don’t have jobs, who else will?” ■

Larry Beresford is an Oakland, Calif.-based freelance medical journalist.

Disclosure: Dr. Wachter is on the board of directors for The Doctors Company; Second Wave Delivery Solutions; Third Wave Rx; The Josiah Macy Foundation; and Lucian Leape Institute of the Institute for Healthcare Improvement; and on scientific advisory boards for Commure; Cural Health; Forward Health; Notable; and Roon.

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How Can We Cultivate Happiness in Medicine?

By Nikhil Sood, MD, and Marjorie Bessel, MD

Case

A 45-year-old hospitalist, a familiar face in the system for the past decade, tragically took his own life. His colleagues and staff admired him, and he always had a pleasant working personality. However, he had been struggling lately. This bright and excellent physician went from being a well-respected clinician to being laid off. Who should we blame: The system? The workload? The toxic work environment? Job dissatisfaction? The clinician's personality? Or something else?

In 2023, the nationwide clinician burnout rate exceeded 50% for physicians and advanced practice practitioners (APPs).¹ Burnout costs the U.S. healthcare system roughly \$5 billion annually due to reduced clinical productivity and increased physician turnover.² So much so that the U.S. Surgeon General issued a 2023 advisory report raising the alarm on this public health risk. Burnout not only threatens the health and well-being of the individual clinicians impacted (physicians have the highest suicide rate of any profession) but also results in poorer quality of care for our patients. Physicians who are burnt out are twice as likely to commit a medical error.³ The link between burnout and errors is not confined to individuals at the extremes of the burnout spectrum; it's a continuum.⁴

Burnout has led to early physician retirements and clinicians leaving the profession, resulting in an unprecedented physician shortage and access challenges. This jeopardizes our ability to meet the community's needs and fulfill our mission of making healthcare more accessible to improve quality of life. The question is, how can we, as a healthcare system, tackle this issue head-on? The solution lies in collaboration. It's not about finding the best solution, but rather working together to implement and foster a culture of collaboration to make a difference and empower our healthcare professionals.

CHIM

In 2019, before the COVID-19 pandemic hit, Banner Health began concerted efforts to promote

well-being by introducing the Cultivating Happiness in Medicine (CHIM) strategy. We continued these efforts throughout the pandemic. Arizona was twice the world's hottest hot spot for COVID-19, but we continued and extended well-being programs to physicians and APPs. This included encouraging social activities appropriately tailored to meet public health guidelines. This unwavering commitment to combat burnout during the most challenging times, alongside physicians and APPs, was a courageous step to combat the burnout crisis.

The CHIM strategy is a comprehensive, evidence-based approach, driven by clinicians, that supports wellness from an individual and organizational perspective. By engaging, inspiring, and empowering them to live their best day in medicine, connect with their purpose, and achieve their career goals through intentional growth and development, CHIM aims to usher in a positive transformation in the healthcare landscape. We believe engaging the team and asking for opinions is essential before starting such a significant initiative. Before launching any work, our Physician and APP Experience and Development Team conducts a listen, learn, plan, and act cycle to ensure we capture the clinician's voice in our plans and activities.

Pillars of CHIM

The CHIM strategy incorporates the Swensen Model to support wellness from a holistic, evidence-based perspective. The six dimensions of the strategy include the following (see Figure 1):

- Design: Creating organizational systems that address the human

needs for meaning, purpose, and autonomy in work

- Leaders: Developing leaders who will collaborate and engage with physicians and APPs as trusted partners and practice participative management by involving them in problem-solving and decision making
- Social Community: Creating opportunities for physicians and APPs to build relationships with their colleagues and cultivate community and camaraderie
- Individual Wellness and Well-being: Promoting resources and programs that help physicians and APPs develop healthy habits such as mindfulness, resiliency, exercise, sleep, nutrition, mental and emotional health, and more
- Second Victims: Reducing preventable harm and supporting staff members involved with a preventable adverse patient event (second victims) by providing emotional and psychological support, addressing the root cause, and establishing a fair and just culture
- Pebbles: Removing sources of workflow, process, operational frustrations, and inefficiencies that act as the "pebble in your shoe"

Strategies in CHIM

The CHIM model uses various strategies. It is led by a system physician and APP steering committee to oversee our work and ensure we create valuable resources and effective tactics to support our clinicians. The strategies are discussed below.

1. Clinician Experience Project (CEP)

The CEP uses app-based video content that can contribute to excellence in healthcare.⁵ It uses a "micro-learning" approach in which clinicians spend five to 10 minutes per week learning practical coaching tips. Examples of topics include bringing cheerfulness to work, team positivity, effective communications among teams, end-of-life care, patient experience, partnering with a nurse, efficient rounding, quality and safety, value-based care, telehealth, conveying respect for each other as team members as well as patients, how to approach goals of care, and end-of-life discussions. These videos can also be shown in team



Dr. Sood



Dr. Bessel

Dr. Sood is a hospitalist at Banner Gateway Medical Center in Gilbert, Ariz., affiliated with MD Anderson Cancer Center in Houston, Texas. Dr. Bessel is Banner Health's chief clinical officer. She has a hospitalist background and was recently recognized as one of Modern Healthcare's 50 most influential executives for 2024.

meetings to engage the clinical team in learning and development. Figure 2 summarizes some of the common topics in CEP.

Clinicians can share insights with their colleagues by commenting on videos, collaborating with hospital leadership, and implementing effective organizational and policy changes. We have been using CEP since 2019. It has revolutionized patient care and improved healthcare workers' mental well-being on issues that matter in daily patient care and workflow.

2. Professional development and leadership development programs

Evidence-based research shows that investing in a person's personal and professional development can decrease burnout. We have been doing individual one-to-one clinician coaching, group coaching, self-guided virtual individual development, and a physician peer support program to encourage professional development. The goal is to offer a confidential, listening ear and support for physicians and APPs struggling with challenges. Additionally, we have a robust physician and APP leadership development program, with programs for those clinicians interested in leadership, first-time leaders, mid-level leaders (Leadership Development Program), resident leaders (Leadership Development for Residents), and advanced leaders through our Advanced Leadership Program.

3. New provider onboarding

Onboarding is critical in physician and APP retention, as practitioners with a good onboarding experi-

ence are more likely to stay for at least three years and are three times more likely to feel a solid commitment to their employer. We support the physician and APP from hire to retire, beginning with new provider onboarding, where we create a pre-boarding checklist and provide onboarding guides for each business line. This ensures a smooth start for new clinicians and equips them with the resources and support for success. We have a live, new provider, onboarding event to connect with essential stakeholders and resource teams and a warm welcome photo and video day.

4. Reward and recognition for our providers

We support and promote rewards and recognition for our practitioners and team members. Our MVP (Most Valuable People) program and the system's annual Doctors' Day and APP Week recognize, reward, and encourage team members who provide exceptional care. Our annual survey bundle comprises engagement, culture, safety, and burnout questions, taken anonymously by all stakeholders, that give open feedback about the health system, mentors, and organization leaders. These simple initiatives work immensely well to encourage a positive culture in the workplace. The aim is to build resilience in clinicians, reduce burnout, and allow them to bring their best selves to work.

5. CHIM social community events

Social community is one of the six pillars of the CHIM holistic, multi-faceted strategy. Sharing a meal is an evidence-based tactic that fosters community and improves team camaraderie, engagement, and trust. Moreover, it's an opportunity for our clinicians to support one another as peers by sharing their experiences as providers with someone who's been in similar situations and knows their challenges. We promote using social community events, a structured yet easy process for physicians and APPs to connect, share a meal or fun activity, access CHIM resources, and discuss well-being to support the social community pillar.

Since its inception in 2018, funding has been offered twice yearly, but more recently every quarter, to any Banner physician or APP willing to host a gathering of their peers, share a fun meal or activity, lead a CHIM discussion, and complete a simple registration form or post-event documentation process. Social Community improves team engagement and helps build relationships among team members. It is an opportunity for clinicians and leadership to support one another as peers by sharing their experiences as providers with someone who shares

Cultivating Happiness in Medicine Activities

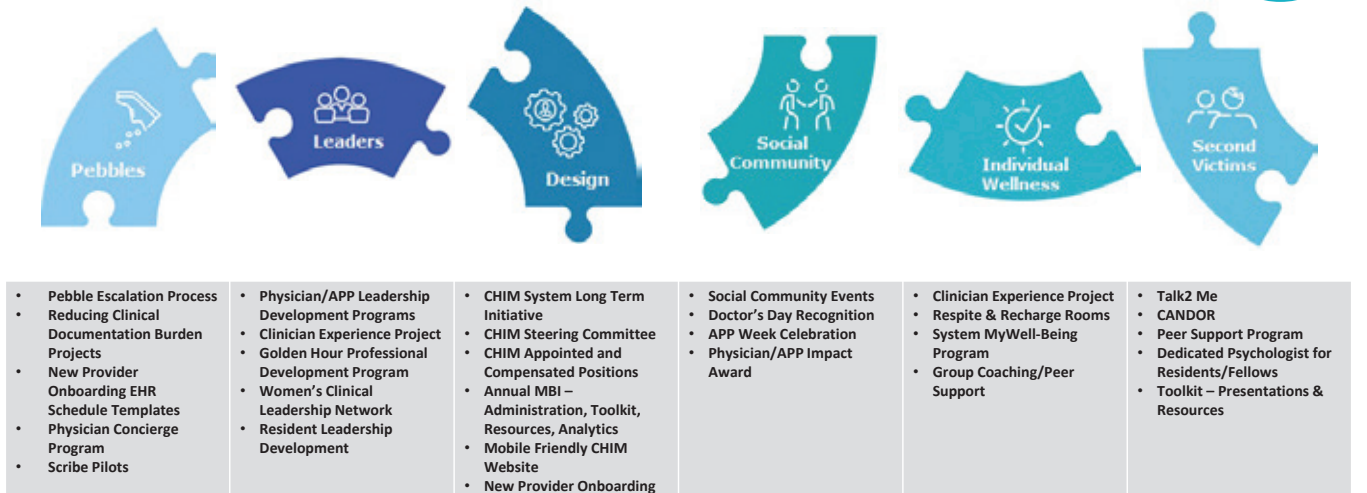


Figure 1: CHIM pillars and activities

Clinician Experience Project (CEP) Is designed to Address Today's Challenges



Popular CEP Content		
Growth Mindset	Physician/Nurse Partnership	Quality & Safety Behaviors
Self-Awareness	Communication	Value Based Care
Team Positivity	Wellness/Wellbeing	Telehealth
Patient Experience Tactics	End of Life Care	Access

Figure 2: CEP includes videos, toolkits, facilitator guides, and slides for discussing various aspects of the healthcare system

Mt. CHIM: Our strategy to support physician & APP well-being

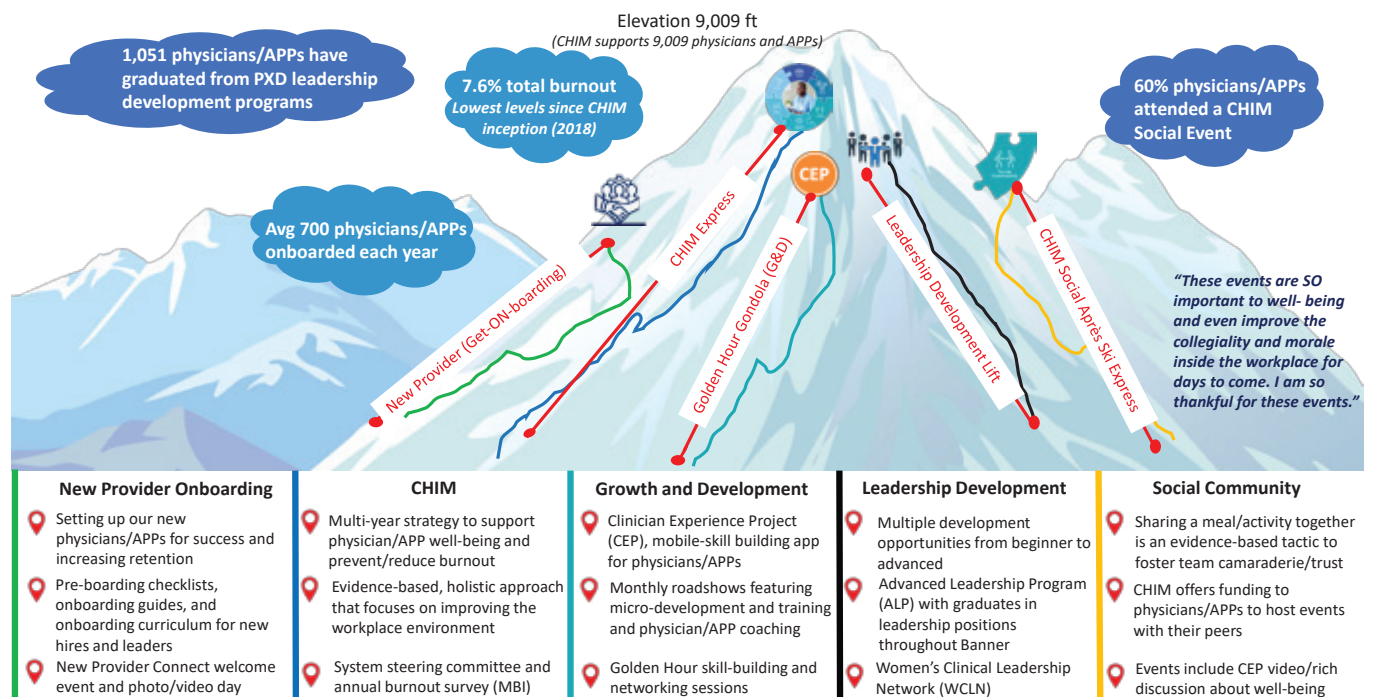


Figure 3: A winter-themed expo at Banner Health where physicians and APPs received a “lift ticket” to ski “Mt. CHIM” and learned how CHIM supports clinicians from hire to retire

their challenges. We summarize all of this in Figure 3.

CHIM results

Burnout: The culmination of the

CHIM and Physician and APP Experience and Development Team's work resulted in a record-low 7.6% total burnout for physicians and APPs per a Maslach Burnout Inventory survey in 2023 (the lowest

since CHIM's inception in 2018 and well below the industry average of 9.9%). At Banner, we believe the business case for addressing physician burnout is multifaceted. It includes costs associated with

KEY OPERATIONAL QUESTION

turnover, lost revenue associated with decreased productivity, financial risk, and threats to the organization's long-term viability due to the relationship between burnout and lower quality of care, decreased patient satisfaction, and problems with patient safety. As a result, reducing physician and APP burnout has significant, tangible results for the organization, our clinicians, and our patients. According to the latest estimates, our organization has saved \$6.1 million in burnout reduction alone (not including reductions in turnover) since 2021.

Retention: Additionally, the collective CHIM activities in 2023 contributed to an improvement in physician retention and a reduction in physician and APP turnover from 2022 to 2023, resulting in an estimated organizational savings of \$13 million. The 2023 CHIM spend was \$625,000, which is less than the turnover cost of just one physician leaving the organization (\$800,000), representing a monumental value added and return on investment.

CHIM social community events: Getting physicians to engage in any activity, let alone one that's wholly voluntary, is challenging. In 2023, a record 60% of Banner physicians and APPs participated in a CHIM social community event,

Quiz:



What is a common organizational strategy to prevent burnout and promote excellence in healthcare?

- a. Employee wellness programs
- b. Encourage social gathering among stakeholders
- c. Motivate team members and recognition of their efforts
- d. Encourage using CEP to watch small videos on various contents
- e. All of the above

Correct answer: E. All of the above. A few great strategies have been suggested to handle burnout. Investing in employees and their wellness is a great start. Encouraging social gatherings can greatly affect team members' overall morale. Further, motivating, rewarding, and recognizing their efforts can increase their productivity and help them give their best. CEP videos have been beneficial.

demonstrating that many physicians and APPs felt the CHIM social community events were a valuable use of their time. Furthermore, this means that more than 2,500 physicians and APPs enjoyed a fun activity, supported their wellness, and cultivated the happiness needed to reconnect them to their purpose and flourish in medicine. With the CHIM strategy, we've reduced burnout, increased engagement, and increased CEP usage among our team members.

Practicing and achieving excellence

As a result of our 2023 CHIM

work, Banner Health was recognized as a 2023 American Medical Association Joy in Medicine organization. We believe we received this prestigious honor due to our investment in CHIM, which helped reduce burnout and achieve competencies in the AMA's strict criteria, including burnout assessment, organizational and leadership commitment, efficiency of practice environment, and teamwork. Our work has captured both local and national attention. Other organizations have met with us to learn our best practices, and we've been featured nationally in presentations and leading publications.⁵

Locally, we've helped lead the way as a core organization member with the Well-Being Collaborative of Arizona, a group of 62 organizations across Arizona working collectively to improve the well-being of health professionals in our community. In 2023, our physicians and APPs told us they want to feel valued, appreciated, and connected to their purpose, and to have a sense of belonging, as in "I belong here." This is how we can achieve excellence in health care and cultivate happiness in medicine. ■

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Chapter Spotlight: Arizona

Rising from the (almost) ashes, just like the fabled Phoenix

By Richard Quinn

The Arizona chapter of SHM faced a challenge in 2021 when its founding hospitalists saw their practice shift from inpatient medicine to primary care. At that point, many of the members of the chapter were leaving, which could have been the end of the local chapter.

Enter the new class, including now Vice President Lisa Simmon, MD, MBA, CHC-QM, SFHM.

“We went from a group of experienced SHM leaders to having a brand-new leadership team,” said Dr. Simmon, medical director of care coordination at Banner-University Medical Center Phoenix.

It’s working, as the chapter is now flourishing.

First step: events.

“We were looking at it like, we want to keep this chapter going,” Dr. Simmon said. “Slowly, we did. The first year I was secretary, we only had two events. One was virtual because it was during COVID-19. I found some speakers at SHM Converge who I thought gave an awesome talk on docu-

mentation, so I said why don’t we bring them in and we can do it virtually? And then we just kept moving forward and growing.”

What’s the motivation for Dr. Simmon, who will be president-elect of the chapter this year?

“There’s a really great opportunity to meet people and to network,” she said. “I like meeting other people from other hospital systems and knowing what the other systems are like. Knowing what resources they have. You can do better for your patients by knowing people outside of your hospital system and being able to leverage other resources that you might not have.”

Admittedly, the chapter had some struggles with the turnover of its board. But where some might see that as a negative, Dr. Simmon takes pride in the new perspectives brought to bear. For instance, the new board changed the length of terms to bring in even more fresh faces.

“Let’s get other people more opportunity for leadership if they want to do it, that’s number one,” she said. “And number two, let’s not burden ourselves where you’re locked in for two years, and if your life changes or something, you’re leaving the chapter high and dry.”

The chapter’s first continuing medical education (CME) event was focused on opioids.

“We did a free opioid CME which

got our physicians and advanced practice practitioners 2.5 CME hours, which is great,” Dr. Simmon said. “In the state of Arizona, every two years, when you re-up your medical license, you need to have three hours of CME education on opioids. That was like, rockstar for us to be able to provide.”

Filling a need like that is a goal for the chapter—and not just for CME. The chapter held a session on ethics, for example.

“How often do we have conversations about ethics? Or saying no to patients?” she said. “How do you say no to patients? It’s not just, here’s a lecture on cardiology. Let’s do something super practical. Come have dinner and learn something.”

Late last year, the chapter held what Dr. Simmon called a “mix and mingle,” and it plans more of those simply to bring healthcare workers together.

“There was no education,” Dr. Simmon said. “It was just, come and meet people. One of our board members is from Indian Health Services, and he brought one of his partners. We’ve had more pediatric hospitalists show up. We’ve had a couple of nocturnists, and those guys are hard to get out for anything! We have had some med students and some residents. We’re really trying to push, “Hey, let’s bring in people from across the board.”

It’s part of Dr. Simmon’s continuing focus to “break out of this just-adult-hospital-medicine silo.”

“I’m a physician advisor technically in my full-time job, and I only do clinical medicine like once a month,” she said. “I’ve pushed my other physician advisor colleagues to come to events, too, because they’re a part of hospital medicine. We’re embedded in the hospital. So, I think this team is really focused on showing that it goes beyond just adult hospital medicine...I’ve been at community and academic hospitals in my system, so I reach out to all my partners in my other hospitals. And we have some really great members in our community-based hospitals. We’re literally trying to get anyone and everyone to participate.”

Dr. Simmon and her board aren’t satisfied yet, though. She wants to build the chapter up to four events a year, to the point that hospitalists and hospital medicine-related subspecialties around the state start thinking, “Oh, yeah, there’s an event coming up!”

“The biggest thing is, we, as a chapter and an executive team, really just want to see the chapter continue to grow and thrive and be present,” Dr. Simmon said. “We want to make sure we’re here for the duration and here for other people for the duration.” ■

Richard Quinn is a freelance writer in New Jersey.

SIG Spotlight: Hospital at Home

The evolution and changing of a skillset

By Richard Quinn

Everyone knows the concept of hospital at home care. It's institutional-level medical treatment delivered in the confines of a Cape Cod or a two-bedroom apartment, either in person or through telemedicine. What fewer practitioners know, as the concept continues to grow, is how best to structure said care. That's where SHM's Hospital at Home Special Interest Group steps in to help.

"The whole goal is, we want to bring this model of care to the clinicians," said SIG vice chair Tuyet-Trinh "Trini" Truong, MD, FACP. "We truly believe in this high-value model of care and want to see it expand further by bringing it to the wider medical community. And there's no better clinical community that would have the potential to accelerate this model forward than SHM because we, hospitalists, are forward thinkers, change makers, and innovators."

Dr. Truong, chief medical officer of Mount Sinai at Home for Mount Sinai Health System in New York, says the goal is also to recruit more people to the model.

"We want people to be aware, but also to have this model of care at their institution," she said. "And a lot more. It's a community for all of us to learn from each other."

SIG chair Stephanie Murphy, DO, FHM, said that education around the concept is particularly important as hospitals at home evolve.

"It's not necessarily new skills as much as it's evolution and changing of a skillset that many hospitalists already have," she said. "You're talking about the nuance of taking acute care into the home, which I think is a real opportunity for patients, of course, because they love the experience. For practitioners,



Dr. Truong

it gives us the opportunity to meet these patients in a different way and have more meaningful interactions with them. I think that training and understanding allow the physicians and the advanced practice practitioners practicing in the model to really get that full experience, if you will."

Dr. Truong adds that earlier-career physicians are already embracing the care model, as they see it as a change agent. Medical students and residents can rotate through hospital at home, just like they spend time on cardiology or pulmonary electives.

"I am not much worried about the buy-in aspect of the new generation because I think that in medicine, there aren't very many new things, per se," she said. "But hospital at home is truly innovative and can really transform healthcare."

Dr. Murphy, physician implementation lead for Boston-based Medically Home, says she's proud of a launch event that featured Michael Maniaci, MD, of the Mayo Clinic, leading a session dubbed "What is Hospital at Home, and Where is Hospital at Home Going?"

"We did this to generate some of that excitement, but also to start creating that community," she said. "During that event, we took a survey to try to understand the members of our SIG and where are they coming from. Are they contemplating potentially having a program? Or are they like Dr. Maniaci or Trini or myself, where they've already had a program and they just want to learn more and have that group of colleagues to share practices with?"

What the SIG learned is that it's drawing from all of those pools, so they planned another event, a panel discussion around non-Centers for Medicare and Medicaid Services-waiver programs. Another planned event is for "new-ish programs."

"We have some that are literally going to be within six months of opening their doors, and we have one that is a little over a year old," Dr. Murphy said. "And largely the purpose there is to start having conversations with that pre-consultative group on, if you want to do this, how can you do this? What are some learnings from

those who just opened their doors that have either set themselves up for success or some potential pitfalls?"

Dr. Murphy says that having structured events is as important as having friendly coffee klatches to share information.

"We're really trying hard to create both formal and informal events for education and knowledge sharing, but also to have that ability to create that home for hospitalists to network, meet each other, and have that support that we know hospitalists uniquely bring each other," she said.

Dr. Truong also wants any practitioners to reach out with questions, particularly as healthcare is at a "unique" point in history.

"We are very passionate about this," she said. "If anyone wants to learn more about this, just ping us. Just reach out to us by email, LinkedIn, or any way. I would also challenge folks to think, 'How many times in their practicing medical career would they get to do something absolutely transformative, completely innovative?' This is the time." ■

Richard Quinn is a freelance writer in New Jersey.

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