

February 2024
Vol. 28 | No. 2

p5

EDUCATION
Leveraging tech in
communication

p12

PRACTICE
MANAGEMENT
Med board complaints

p14

EDUCATION
Debriefing after
unexpected death/code

the Hospitalist[®]

shm[®]
the-hospitalist.org

✕ f in @SocietyHospMed



**Celebrating Black
hospital medicine
professionals**

p10



IN THE LITERATURE

Johns Hopkins

p7

Drs. Woodruff,
Pahwa, Niranjana-
Azadi, Coursen,
Leventhal, Asmar,
Rose, Latifi, and Dalal

INTERPRETING
DIAGNOSTIC TESTS

D-dimer's role in diagnosing PE

p16

Drs. Chockalingam,
Flegenheimer, and
Baduashvili explore

VISIT US
ONLINE FOR
EXCLUSIVE
CONTENT



IN THE NEXT ISSUE...

**National Hospitalist
Day, Converge preview**

Post Std
U.S. Postage
PAID
Kent OH
Permit #1151

THE Hospitalist
WILEY PERIODICALS LLC
C/O The Sheridan Press
PO Box 465
Hanover, PA 17331



For patients hospitalized with COVID-19,¹

HELP REDUCE DISEASE PROGRESSION AND SHORTEN RECOVERY TIME^{1,2}

INDICATION

VEKLURY is indicated for the treatment of COVID-19 in adults and pediatric patients (≥ 28 days old and weighing ≥ 3 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.

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 $>10\times$ 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 ($\geq 5\%$ all grades) was nausea.
- The most common lab abnormalities ($\geq 5\%$ 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.

ECMO=extracorporeal membrane oxygenation.

In the ACTT-1 overall study population, patients experienced



Median 10 days with VEKLURY vs 15 days with placebo; recovery rate ratio: 1.29 (95% CI, 1.12 to 1.49), $P < 0.001^{1,2}$

- Recovery was defined as patients who were no longer hospitalized or hospitalized but no longer required ongoing COVID-19 medical care

Significantly greater likelihood of improvement in clinical status, a key secondary endpoint¹

- Patients were 54% more likely to have improved clinical status on Day 15 vs placebo; odds ratio for improvement: 1.54 (95% CI, 1.25 to 1.91)

Helped reduce progression to more severe disease, an additional secondary endpoint¹⁻³

- 7% absolute reduction in incidence of new noninvasive ventilation or high-flow oxygen with VEKLURY (17%, n=307) vs placebo (24%, n=266) in patients who did not receive either at baseline (95% CI, -14 to -1)
- 10% absolute reduction in incidence of new mechanical ventilation or ECMO with VEKLURY (13%, n=402) vs placebo (23%, n=364) in patients who did not receive either at baseline (95% CI, -15 to -4)

Adverse reaction frequency was comparable between VEKLURY and placebo¹

- All 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%)

ACTT-1 was a randomized, double-blind, placebo-controlled, phase 3 clinical trial in hospitalized 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. Secondary endpoints included clinical status of patients on Day 15 as assessed on an 8-point ordinal scale and incidence of new high-flow oxygen requirement or new mechanical ventilation or ECMO.¹

*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).

IMPORTANT SAFETY INFORMATION (cont'd)

Dosage and administration (cont'd)

• 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 following page.

References: 1. VEKLURY. Prescribing Information. Gilead Sciences, Inc.; 2023. 2. Beigel JH, Tomashek KM, Dodd LE, et al; ACTT-1 Study Group. Remdesivir for the treatment of COVID-19—final report. *N Engl J Med*. 2020;383(19):1813-1826. doi:10.1056/NEJMoa2007764 3. Beigel JH, Tomashek KM, Dodd LE, et al; ACTT-1 Study Group. Remdesivir for the treatment of COVID-19—final report. Supplementary appendix. *N Engl J Med*. 2020;383(19):1813-1826. Accessed May 24, 2022. https://www.nejm.org/doi/suppl/10.1056/NEJMoa2007764/suppl_file/nejmoa2007764_appendix.pdf



VEKLURY, the VEKLURY Logo, GILEAD, and the GILEAD Logo are trademarks of Gilead Sciences, Inc., or its related companies.
© 2023 Gilead Sciences, Inc. All rights reserved. US-VKYP-0455 08/23

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 (≥28 days old and weighing ≥3 kg), who are:

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

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

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

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

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

Treatment Duration:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Clinical Trials Experience: The safety of VEKLURY is based on data from three Phase 3 studies in 1,313 hospitalized adult subjects with COVID-19, one Phase 3 study in 279 non-hospitalized adult and pediatric subjects (12 years of age and older weighing at least 40 kg) with mild to moderate COVID-19, four Phase 1 studies in 131 healthy adults, and from patients with COVID-19 who received VEKLURY under the Emergency Use Authorization or in a compassionate use program. The NIAID ACTT-1 study was conducted in hospitalized subjects with mild, moderate, and severe

COVID-19 treated with VEKLURY (n=532) for up to 10 days. Study GS-US-540-5773 (Study 5773) included subjects hospitalized with severe COVID-19 and treated with VEKLURY for 5 (n=200) or 10 days (n=197). Study GS-US-540-5774 (Study 5774) was conducted in hospitalized subjects with moderate COVID-19 and treated with VEKLURY for 5 (n=191) or 10 days (n=193). Study GS-US-540-9012 included non-hospitalized subjects, who were symptomatic for COVID-19 for ≤7 days, had confirmed SARS-CoV-2 infection, and had at least one risk factor for progression to hospitalization treated with VEKLURY (n=279; 276 adults and 3 pediatric subjects 12 years of age and older weighing at least 40 kg) for 3 days.

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

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

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

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

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

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

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

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

Pregnancy

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

Lactation

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

Pediatric Use

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

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

Geriatric Use

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

Renal Impairment

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

Hepatic Impairment

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

OVERDOSAGE

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

214787-GS-014



VEKLURY is a trademark of Gilead Sciences, Inc., or its related companies. All other trademarks referenced herein are the property of their respective owners.

© 2023 Gilead Sciences, Inc. All rights reserved.

EDITORIAL STAFF

Physician Editor

Weijen W. Chang, MD, FAAP, SFHM
Weijen.ChangMD@baystatehealth.org

Pediatric Editor

Anika Kumar, MD, FAAP, FHM
KumarA4@ccf.org

Editor

Lisa Casinger
lcasinger@wiley.com

Coordinating Editors

Alan Hall, MD
The Future Hospitalist

Keri Holmes-Maybank, MD, FHM
Interpreting Diagnostic Tests

Art Director

Chris Whissen

Copy Editor

Peri Dwyer Worrell

EDITORIAL ADVISORY BOARD

Ramesh Adhikari, MD, MS, SFHM
Khaalisha Ajala, MD, FHM
Weijen W. Chang, MD, FAAP, SFHM
Rob Craven, MD, FACP, CHCQM-PHYADV, SFHM
Patrick Desamours, MSPA, PA-C, MBA, CHCQM, SFHM
Ilaria Gadalla, DMSc, PA-C
Amanda Green, MD, FACP, HMDc, CPPS, FHM
Venkat P. Gundareddy, MBBS, MPH, SFHM
Andrea R. Hadley, MD, FAAP
Semie Kang, DO, MS, FHM
Anika Kumar, MD, FAAP, FHM
Ponon Dileep Kumar, MD, MBA, FACP, FAAPL, CPE

Arunab Mehta, MD, MEd
Nkemdilim Mgbokjwe, MD
Kunjam Modha, MD, FACP, SFHM
Shyam Odeti, MD, MS, FAAP, FHM
Aditi Puri, MD, MS
Isha Puri, MD, MPH, FHM
Jennifer K. Readlynn, MD, FHM
Christopher J. Russo, MD, FAAP
Tanveer Singh, MD, MBBS
Lauren Spaeth, DO
Kate Wimberly, MD
Yuting Ye, MD

PUBLISHING STAFF

Publishing Director

Lisa Dionne Lento
ldionnelen@wiley.com

Associate Director, Advertising Sales

Tracey Davies
tdavies@wiley.com

ADVERTISING STAFF

Display Advertising

Senior Account Managers
Stephen Donohue
sdonohue@wiley.com
MJ Drewn
mdrawn@wiley.com

Classified Advertising

Associate Director of Sales
Allister Crowley
acrowley@wiley.com

THE SOCIETY OF HOSPITAL MEDICINE

Phone: 800-843-3360
Fax: 267-702-2690
Website: www.hospitalmedicine.org

Chief Executive Officer

Eric E. Howell, MD, MHM

Director of Communications

Brett Radler
bradler@hospitalmedicine.org

Social Media & Content Specialist

Kristen Munoz
kmunoz@hospitalmedicine.org

SHM BOARD OF DIRECTORS

President Kris Rehm, MD, SFHM
President-Elect Flora Kisuule, MD, MPH, SFHM
Treasurer Chad T. Whelan, MD, MHSA, SFHM
Secretary Efrén C. Manjarrez, MD, FACP, SFHM
Immediate Past President Rachel Thompson, MD, MPH, SFHM

Board of Directors

Bryce Gartland, MD, SFHM
Kierstin Cates Kennedy, MD, MSHA, FACP, SFHM
D. Ruby Sahoo, DO, MBA, FACP, SFHM
Ann M. Sheehy, MD, MS, SFHM
Mark W. Shen, MD, SFHM
Darlene Tad-y, MD, SFHM
Robert P. Zipper, MD, MMM, SFHM

SHM'S DIVERSITY AND INCLUSION STATEMENT

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

INFORMATION FOR SUBSCRIBERS

Print subscriptions are free for members of the Society of Hospital Medicine. Free access is also available online at www.the-hospitalist.org. If you are an SHM member and have a subscription inquiry, contact 800-843-3360 or email customerservice@hospitalmedicine.org. If you are not an SHM member and receive The Hospitalist, contact Wiley Periodicals LLC at 800-835-6770 (U.S. only) or email at cs-journals@wiley.com.

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

The Hospitalist (ISSN 1553-085X) is published monthly on behalf of the Society of Hospital Medicine by Wiley Periodicals LLC, 111 River Street, Hoboken, NJ 07030-5774. Postmaster: Send all address changes to The Hospitalist Wiley Periodicals LLC, c/o The Sheridan Press, PO Box 465, Hanover, PA, 17331. Printed in the United States by Sheridan of Ohio, Brimfield, OH.

Copyright ©2024 Society of Hospital Medicine. All rights reserved. No part of this publication may be reproduced, stored, or transmitted in any form or by any means and without the prior permission in writing from the copyright holder.

All materials published, including but not limited to

original research, clinical notes, editorials, reviews, reports, letters, and book reviews, represent the opinions and views of the authors, and do not reflect any official policy or medical opinion of the institutions with which the authors are affiliated, the Society of Hospital Medicine, or of the publisher unless this is clearly specified. Materials published herein are intended to further general scientific research, understanding, and discussion only and are not intended and should not be relied upon as recommending or promoting a specific method, diagnosis, or treatment by physicians for any particular patient. While the editors, society, and publisher believe that drug selections and dosages and the specifications and usage of equipment and devices as set forth herein are in accord with current recommendations and practice at the time of publication, they accept no legal responsibility for any errors or omissions, and make no warranty, express or implied, with respect to material contained herein. Publication of an advertisement or other discussions of products in this publication should not be construed as an endorsement of the products or the manufacturers' claims. Readers are encouraged to contact the manufacturers with any questions about the features or limitations of the products mentioned.

The Society of Hospital Medicine is an independent professional medical and scientific society that does not guarantee, warrant, or endorse any commercial product or service.

Communication Everywhere All at Once

The art of leveraging technology

By Kelsey Perry, MD, Jilian R. Sansbury, MD, FACP, FHM, Alan M. Hall, MD, FAAP, SFHM, and Ethan Molitch-Hou, MD, MPH, SFHM

In medical school and residency, the emphasis on medical knowledge often overshadows other equally important aspects of effective patient care. At some point, the hard realization hits that just knowing and understanding the literature is not enough. Without medical knowledge matched to excellent communication skills, our knowledge is unavailing. Strong communication skills are foundational to ensure a multidisciplinary care plan is carried out by consultants, nurses, social workers, and physical therapists. High-quality communication between the care team, patients, and their caregivers can prevent medical errors and decrease readmissions. Unfortunately, in the busy, stressful life of a hospitalist, our day-to-day tasks can take precedence over the basic and powerful notion of being a good listener.

With technological advances, modern communication practices have added more opportunities and associated challenges. Video calls are now routinely used to communicate with patient's families, and patients have direct access to their medical records in real time. Electronic health records (EHRs) have integrated chat features with resultant workplace communication now at risk of mimicking casual texting patterns. As technology changes, the practice for inpatient providers must adapt, and the fundamentals of communication and careful listening must remain.

Video calls at the bedside

It's estimated that 90% of communication lies in the nonverbal and paraverbal components—how we use body language, gestures, facial expressions, and the tone and volume of our voices.¹ Nonverbal communication can significantly impact patient satisfaction, outcomes, and the likelihood of adherence to the recommended care plan.² Communicating information to patients should resemble a conversation we have with loved ones. We must confer empathy, show interest in a patient's story or questions, and ensure we are patient and avoid interrupting.¹

Technology has both helped and hampered this ability as we have been pushed to spend more time with the EHR and less with the patient.³ As hospitalists, we often try to multitask, calling our patients and caregivers on the phone and updating our patient's families while writing notes.⁴ This can lead to distracted conversations and less engagement and active listening. The use of video calls has grown exponentially with the COVID-19 pandemic. Video calls have been shown to reduce loneliness and isolation for the geriatric population and improve connections between patients and mental-health providers.^{5,6}

During the pandemic, many hospitals expanded the use of tablets on the wards to allow for video calls for consultants and family members. Some EHRs have integrated the feature, as have smartphone apps for physicians, like Doximity. Helping a patient set up a video call to connect to their family can be invaluable, providing the connection needed to allow for the nonverbal and paraverbal



Dr. Perry



Dr. Sansbury



Dr. Hall



Dr. Molitch-Hou

Dr. Perry is an internal medicine-pediatrics resident at Indiana University in Bloomington, Ind. Dr. Sansbury is the transitional-year program director, internal-medicine associate program director, chair of the department of medicine, and medical director of the Grand Strand Health Education and Simulation Center at Grand Strand Health in Myrtle Beach, S.C. Dr. Hall (@AlanHall_UKHM), is an associate professor and hospitalist in internal medicine and pediatrics at the University of Kentucky College of Medicine in Lexington, Ky., where he also serves as the assistant dean for curriculum integration. Dr. Molitch-Hou (@EthanMH3), is an assistant professor, director of hospital medicine sub-intern rotation, and co-director of the Care Transition Clinic at the University of Chicago Medical Center in Chicago.



elements of communication. When it comes to breaking bad news, it can allow for the needed silence to let families process and permit physicians to watch for nonverbal cues to ensure understanding. Video calls can be made in a patient room to allow for a hold or pat on the shoulder that a distant family member cannot provide.

Open access to health information

Though this existed well before COVID-19, the pandemic embroiled us in a world where disinformation became as prevalent as good information and people became self-proclaimed experts by doing their own, sometimes limited, research.⁷ The medical community responded with sarcastic memes about confusing a Google search with a medical degree. As access to information has expanded over the last two decades, the amount of information patients bring to encounters has increased and is likely to grow more as artificial intelligence enhances patient research.

Good communication with patients and families involves integrating their input and ideas. Taking time to listen, even when the information challenges your care plan, is key to building a trusting relationship. We must avoid being adversarial and instead focus on slowing down, showing genuine empathy, and sharing our expectations for patient care with patients and family members.

Previously, patients did not have easy access to their medical records. With advancing technology and federal legislation, patients now can quickly view their lab results (sometimes before the clinician), including those flagged as

abnormal.⁸ Health systems must partner with patients to find ways to ensure certain diagnoses (i.e., cancer) are not discovered by a patient alone when viewing results with limited context. We must advocate for continued direct communication in the timely delivery of bad news. Harm can also come when patients read notes that have stigmatizing language such as “difficult” or “non-compliant.”⁹ Clinicians must refine the language used in notes to eliminate stigma and understand more about why certain labels are short-sighted. We must presume that all of our notes are being read by our patients and their family members.

Secure messaging

Though it’s easy to forget in the era of constant notifications, secure messaging has been viewed favorably by hospitalists as an improvement in clarity and efficiency.¹⁰ Secure messaging on a pediatric hospitalist service resulted in a 59% decrease in communication failure between nurses and residents but was accompanied by increased messaging rates.¹¹ Secure messaging provides many benefits but has drawbacks including lack of standardization, confusion on whom to contact, and risk of alert fatigue.

Successful communication in the era of secure messaging relies on clear rules of engagement about whom to get in contact with and when and how to do so. Health care systems must establish conventions, with all stakeholders involved in patient care providing input. Specifying approaches for urgent- or emergent-care needs is imperative. Alternative communication options must remain, including pagers, phones, and/

or overhead paging to provide a backup and an emergent response system. Clear pathways and expectations on communication type can promote efficiency while ensuring closed-loop communication. When clinicians go off service, there should be standard practice to change the contact person and make the outgoing clinician unavailable to avoid communication delays.

It is too easy to be informal in secure messaging which can lead to miscommunication and multiple unneeded messages back and forth. Messaging must follow existing standards, such as Situation, Background, Assessment, and Recommendation (SBAR) or other validated communication tools. Clinicians should set an example by using one message in an SBAR format rather than multiple fragments that increase alert fatigue. High-quality direct communication on multidisciplinary rounds, recognizing quickly when a return to the bedside is needed, and clarifying complex issues verbally (by phone or in person) can decrease the messaging burden.

For now, we encourage hospitalists to understand the importance of communication, with a distinct focus on how to leverage technology to help us, including how to videoconference to update families, how to ensure the medical record is patient-focused and patient-friendly, and how to secure-chat professionally. Technology will continue to change rapidly, and hospitalists will often be at the forefront to see its potential to improve care while also appreciating its flaws and shortcomings. As technologies advance, we must stay up-to-date to ensure that the changes of the future positively impact outcomes for our patients and assure a heightened sense of

pride in our day-to-day careers extending far beyond checking the boxes of our future HospitalistGPT-created to-do lists. ■

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

References

1. Ranjan P, et al. How can doctors improve their communication skills? *J Clin Diagn Res.* 2015;9(3):JE01-04.

2. Choudhary A, Gupta V. Teaching communications skills to medical students: Introducing the fine art of medical practice. *Int J Appl Basic Med Res.* 2015;5(Suppl 1):S41-44.

3. Asan O, et al. More screen time, less face time - implications for EHR design. *J Eval Clin Pract.* 2014;20(6):896-901.

4. O’Leary KJ, et al. How hospitalists spend their time: Insights on efficiency and safety. *J Hosp Med.* 2006;1(2):88-93.

5. Noone C, et al. Video calls for reducing social isolation and loneliness in older people: a rapid review. *Cochrane Database Syst Rev.* 2020;5(5):CD013632. doi: 10.1002/14651858.CD013632.

6. Molfenter T, et al. Use of telehealth in mental health (MH) services during and after COVID-19. *Community Ment Health J.* 2021;57(7):1244-51.

7. Levy N. Bad beliefs: Why they happen to good people. Oxford (UK):Oxford University Press;2022. <https://www.ncbi.nlm.nih.gov/books/NBK577958/>. doi:10.1093/oso/9780192895325.001.0001. Accessed December 31, 2023.

8. Krasowski MD, et al. Variation in results release and patient portal access to diagnostic test results at an academic medical center. *J Pathol Inform.* 2017;8:45. doi: 10.4103/jpi.jpi_53_17.

9. Sun M, et al. Negative patient descriptors: Documenting racial bias in the electronic health record. *Health Aff (Millwood).* 2022;41(2):203-11.

10. Przybylo JA, et al. Smarter hospital communication: Secure smartphone text messaging improves provider satisfaction and perception of efficacy, workflow. *J Hosp Med.* 2014;9(9):573-8.

11. Hansen JE, et al. Reducing interdisciplinary communication failures through secure text messaging: A quality improvement project. *Pediatr Qual Saf.* 2018;3(1):e053. doi: 10.1097/pq9.000000000000053.

Johns Hopkins University School of Medicine

Medical Research Reviews

By Amelita Woodruff, MD, Amit Pahwa, MD, SFHM, Ashwini Niranjan-Azadi, MD, SFHM, Julie Coursen, MD, Kara-Grace Leventhal, MD, Margueritta El Asmar, MD, Michael Rose, MD, MPH, Niloofar Latifi, MD, and Sonia Dalal, MD

Johns Hopkins University School of Medicine, Baltimore

IN THIS ISSUE

1. Adult hospitalizations from immigration-detention facilities
2. Virtual care team increases the number of patients with CHF on GDMT during hospitalization
3. Fewer COPD exacerbations and pneumonia hospitalizations with LABA-LAMA inhalers compared to ICS-LABA in COPD
4. No clear benefit to the use of haloperidol for ICU delirium
5. Transcatheter repair of secondary mitral regurgitation improves outcomes
6. Abatacept and infliximab may improve mortality in patients hospitalized with COVID-19 pneumonia
7. Risk stratification of patients with HF in the ED coupled with close outpatient follow-up reduces mortality and CV rehospitalization
8. Risk for CKD progression after AKI

By Amelita Woodruff, MD

1 Adult hospitalizations from immigration-detention facilities

CLINICAL QUESTION: What are the causes of hospitalizations from immigration-detention facilities and what is their relative morbidity?

BACKGROUND: Over the last three decades, an exponential increase in detained individuals has overwhelmed the capabilities of immigration jails and prisons to attend to people's basic health needs, prevent the spread of infectious diseases, and address the well-known psychiatric impacts of immigration detention and incarceration. Despite mortality case reports, little is known about this vulnerable population's morbidity or other health outcomes.

STUDY DESIGN: Cross-sectional study

SETTING: Federal and privately owned hospitals in Texas and Louisiana between 2015 and 2018

SYNOPSIS: Analysis of U.S. Immigration and Customs Enforcement's (ICE's) payer designation and geospatial identifiers found 887 hospitalizations of adults aged 18 and older attributed to immigration facilities. Hospitalizations from ICE custody were largely related to infectious disease (179, 24.7%) and psychiatric disease (145, 20.3%). Meanwhile, hospitalizations from U.S. Customs and Border Protection custody were predominantly related to trauma and toxic exposure (17, 17.0%), heat exposure, syncope and rhabdomyolysis (16, 16.0%), infectious diseases (16, 16.0%), and obstetric presentations (16, 16.0%). Seventy-two (8.1%) hospitalizations required ICU admission and 175 (19.5%) required intermediate ICU, higher than expect-



Dr. Woodruff

ed as morbidity is generally lower among new immigrants than U.S.-born individuals. This analysis focuses on Texas and Louisiana since a significant portion of detained immigrants are in these states. This period chosen covers both Democratic and Republican administrations. Limitations to this analysis include it being cross-sectional; therefore, no causality can be claimed. Additionally, this study does not reflect modern comorbidities and structural changes related to COVID-19.

BOTTOM LINE: Top causes of hospitalizations of immigration-center detainees were found to be infectious and psychiatric, among many other comorbidities, highlighting the fact that ongoing advocacy is needed to ensure that policymakers aim to mitigate the medical risks of immigration detention by improving access to medical and psychiatric care in facilities.

CITATION: Nwadiuko J, Diaz C, et al. Adult hospitalizations from immigration-detention in Louisiana and Texas, 2015-2018. *PLOS Glob Public Health*. 2022;2(8):e0000432. doi: 10.1371/journal.pgph.0000432.

Dr. Woodruff is a hospitalist and director of diversity, equity, and inclusion at Johns Hopkins Hospital, and an assistant professor of medicine at Johns Hopkins University School of Medicine in Baltimore.

By Amit Pahwa, MD, SFHM

2 Virtual care team increases the number of patients with CHF on GDMT during hospitalization

CLINICAL QUESTION: Can a virtual care team increase the number of patients with chronic heart failure (CHF) on goal-directed therapy during hospitalization?

BACKGROUND: Maximizing goal-directed medical therapy (GDMT) in patients with CHF

with reduced ejection fraction improves mortality. However, on discharge, 40% of patients are on a beta blocker, angiotensin-converting enzyme inhibitors (ACE inhibitors), or angiotensin II receptor blockers (ARBs), and mineralocorticoid receptor antagonists. The study team piloted a virtual care team to optimize the intensity of medications for patients with CHF who were hospitalized for other reasons.



Dr. Pahwa

STUDY DESIGN: Randomized control prospective trial (by birth month)

SETTING: Three hospitals in a Boston health care system

SYNOPSIS: The study team enrolled patients with a history of CHF with reduced ejection fraction (<40%) who were hospitalized for any reason from October 2021 to June 2022 in a non-ICU setting. They excluded patients who spent time in ICU, required circulatory support, were diagnosed with acute coronary syndrome or stroke, had recent surgery, or were hypotensive. A virtual care team of physicians and pharmacists reviewed patients' charts in the study group to maximize quadruple therapy. They made recommendations in a progress note and paged the treating team. The primary outcome was change in a GDMT score. Secondary was new initiations or up-titrations. Safety outcomes were hypotension, bradycardia, acute kidney injury, or hypokalemia. There were 107 encounters (83 patients) in the intervention group and 145 encounters (115 patients) in the usual-care group. The mean age was 69 years with 66% of the patients being men and 73% white. The median hospital stay was six days in both groups. About 25% in each group were hospitalized for heart failure exacerbations. The mean GDMT score was 1.1 in the intervention group compared to 0.4 in usual care ($P < 0.001$). The intervention group had twice as many initiations ($P = 0.001$) or up-titrations ($P = 0.002$) as the usual care. There were no significant differences ($P = 0.30$) in safety events (28% versus 21%), the most common being hypotension.

BOTTOM LINE: A virtual care team can safely provide input on the optimization of a patient's medications for chronic heart failure.

CITATION: Bhatt AS, Varshney AS, et al. Virtual care team guided management of patients with heart failure during hospitalization. *J Am Coll Cardiol*. 2023;81(17):1680-93.

Dr. Pahwa is director of the internal medicine sub-internship, at Johns Hopkins Hospital and associate professor of pediatrics at Johns Hopkins University School of Medicine in Baltimore.

By Julie Coursen, MD

3 Fewer COPD exacerbations and pneumonia hospitalizations with LABA-LAMA inhalers compared to ICS-LABA in COPD

CLINICAL QUESTION: Is a long-acting beta agonist and long-acting muscarinic antagonist (LABA-LAMA) inhaler combination better than an inhaled corticosteroid and long-acting beta agonist (ICS-LABA) combination to improve clinical outcomes in patients with chronic obstructive pulmonary disease (COPD)?



Dr. Coursen

BACKGROUND: Clinical guidelines recommend LABA-LAMA over ICS-LABA in COPD patients but randomized clinical trials have shown mixed data on clinical outcomes comparing these maintenance combination inhalers.

STUDY DESIGN: Large retrospective cohort study

SETTING: National insurance database

SYNOPSIS: From a national insurance database, 30,216 pairs of COPD patients were identified as starting maintenance combination inhalers with either LABA-LAMA or ICS-LABA. Those with a prior diagnosis of asthma were excluded. LABA-LAMA showed improved clinical outcomes compared to ICS-LABA with a 20% reduction in first pneumonia hospitalization and an 8% reduction in moderate or severe COPD exacerbation. No difference was found in patients with higher eosinophil counts. Limitations included only one year of follow-up time. These results were overall consistent with findings from the 2016 FLAME trial.

BOTTOM LINE: A large retrospective cohort study demonstrated fewer COPD exacerbations and pneumonia hospitalizations for COPD patients initiated on LABA-LAMA as opposed to ICS-LABA for new start of maintenance combination inhalers.

CITATION: Feldman WB, Avorn J, et al. Chronic obstructive pulmonary disease exacerbations and pneumonia hospitalizations among new users of combination maintenance inhalers. *JAMA Intern Med.* 2023;183(7):685-95.

Dr. Coursen is a hospitalist at Johns Hopkins Hospital and an assistant professor of medicine at Johns Hopkins University in Baltimore.

By Kara-Grace Leventhal, MD

4 No clear benefit to the use of haloperidol for ICU delirium

CLINICAL QUESTION: Does the use of haloperidol versus placebo for delirium in ICU patients improve mortality and increase the chance of hospital discharge at 90 days?



Dr. Leventhal

BACKGROUND: Haloperidol is the most commonly used medication for delirium in ICU patients but was not found to be effective in prior clinical trials. The goal of this trial was to determine if the use of haloperidol for delirium in ICU patients, compared to a placebo, would lead to a greater number of days alive and out of the hospital.

STUDY DESIGN: Blinded, placebo-controlled, randomized, controlled trial

SHORT TAKES

By Ashwini Niranjan-Azadi, MD, SFHM

Continuous versus intermittent meropenem administration in critically ill patients with sepsis: The MERCY randomized clinical trial

Double-blind randomized control trial of 607 critically ill patients with sepsis or septic shock in 31 ICUs in Croatia, Italy, Kazakhstan, and Russia were randomized to intermittent or continuous administration of meropenem. Continuous administration did not improve all-cause mortality over intermittent administration (47% versus 49%), nor did it increase the emergence of extensively resistant or

pan-drug-resistant bacteria (RR, 0.96; 95% CI, 0.81-1.13) at 28 days.

CITATION: Monti G, et al. Continuous vs intermittent meropenem administration in critically ill patients with sepsis: The MERCY randomized clinical trial. *JAMA.* 2023;330(2):141-51.

Use of nonstigmatizing language is associated with improved outcomes in hospitalized people who inject drugs

A retrospective medical record review of 328 discharge summaries of patients with infectious complications of opioid use disorder noted stigmatizing language was common (67%). Use of best-practice language was associated with increased odds of addiction treatment (AOR, 4.11; 95% CI, 1.89-8.93) and addiction fol-

low-up care (AOR, 2.31; 95% CI, 1.30-4.09).

CITATION: Carpenter JE, Catalanotti J, et al. Use of nonstigmatizing language is associated with improved outcomes in hospitalized people who inject drugs. *J Hosp Med.* 2023;18(8):670-6. doi: 10.1002/jhm.13146.

Effect of hemodiafiltration or hemodialysis on mortality in kidney failure

A randomized control trial of 1,360 patients in Europe to conventional high-flux hemodialysis versus high-dose hemodiafiltration with a 30-month median follow-up shows a reduction in death from any cause in high-dose hemodiafiltration group (HR, 0.77; 95% CI, 0.65-0.93).

CITATION: Blankestijn PJ, Vernooij RWM, et al. Effect of hemodiafiltration or hemodialysis on mortality in kidney failure. *N Engl J Med.* 2023;289(8):700-9.

Dr. Ashwini Niranjan-Azadi is a hospitalist at Johns Hopkins Hospital and an assistant professor of medicine at Johns Hopkins University School of Medicine in Baltimore.

By Margueritta El Asmar, MD

5 Transcatheter repair of secondary mitral regurgitation improves outcomes

CLINICAL QUESTION: Does transcatheter mitral valve repair of secondary mitral regurgitation improve hospitalization rates and mortality in patients with refractory symptoms despite maximal medical therapy?



Dr. Asmar

BACKGROUND: Patients with left ventricular cardiomyopathy and secondary mitral regurgitation have an increased risk of heart failure hospitalizations and reduced survival. Previously, the COAPT Trial showed safety and improved outcomes of transcatheter repair using MitraClip at two years. This study assessed outcomes after a five-year follow-up.

STUDY DESIGN: Open-label randomized-controlled trial

SETTING: Multicenter study across 78 centers in the U.S. and Canada

SYNOPSIS: 614 patients with ischemic or non-ischemic cardiomyopathy and ejection fraction 20% to 50% with both moderate-to-severe or severe secondary mitral regurgitation by TTE and NYHA II or greater functional status were randomized to undergo guideline-directed medical therapy with or without transcatheter mitral valve repair. Those who underwent transcatheter repair were noted to have an average annual hospitalization rate of 33.1% compared to 57.2% in controls (HR, 0.53; 95% CI, 0.41-0.68). Sim-

ilarly, five-year mortality in those who received the intervention was 57.3% compared to 67.1% in controls (HR, 0.72; 95% CI, 0.58-0.89).

BOTTOM LINE: Transcatheter secondary mitral regurgitation valve repair in symptomatic patients despite guideline-directed therapy decreases hospitalization rates and mortality on five-year follow-up.

CITATION: Stone GW, Abraham WT, et al. Five-Year follow-up after transcatheter repair of secondary mitral regurgitation. *N Engl J Med.* 2023;388(22):2037-48.

Dr. El Asmar is a hospitalist at Johns Hopkins Hospital and an assistant professor of medicine at Johns Hopkins University School of Medicine in Baltimore.

By Michael Rose, MD, MPH

6 Abatacept and infliximab may improve mortality in patients hospitalized with COVID-19 pneumonia

CLINICAL QUESTION: What immunomodulatory drugs should we use in hospitalized patients with COVID-19 in addition to corticosteroids?

BACKGROUND: Inflammation is a key driver of morbidity and mortality in patients with COVID-19. The RECOVERY trial first demonstrated the efficacy of corticosteroids in hospitalized patients with COVID-19 who required supplemental oxygen. Subsequent trials have shown additive benefit in select patients for the IL-6 inhibitors tocilizumab (RECOVERY; REMAP-CAP) and sarilumab (REMAP-CAP), as well as with the Janus kinase inhibitors baricitinib (ACTT-2; COV-BARRIER; RECOVERY) and tofacitinib (STOP-COVID), leading to their inclusion in national guidelines. Other unique immunomodulators have not shown clear benefits. Little data exist for adding two or more immunomodulatory agents to corticosteroids.

STUDY DESIGN: Multicenter, randomized, double-blinded, placebo-controlled trial

SETTING: Hospitalized patients (including ICU patients) in the U.S. and Latin America

SYNOPSIS: 1,971 hospitalized adults with COVID-19 pneumonia between October 2020 and December 2021 (Omicron wave) were randomized to receive abatacept (T-cell inhibitor), cenicriviroc (monocyte and macrophage inhibitor), infliximab (TNF-alpha inhibitor), or placebo, in addition to standard of care. More than 90% of patients received corticosteroids and remdesivir, but fewer than 5% received IL-6 or Janus kinase inhibitors.

No agents significantly improved the primary outcome of median time to recovery. Abatacept (11.0% versus 15.1% (OR, 0.62; CI, 0.41-0.94) and infliximab (10.1% versus 14.5% (OR, 0.59; CI, 0.39-0.90), but not cenicriviroc (13.8% versus 11.9% (OR, 1.18; CI 0.72-1.94), improved all-cause mortality at day 28, a pre-specified key secondary endpoint.

This study further supports adding another immunomodulatory agent to corticosteroids when treating hospitalized patients with COVID-19 pneumonia. Which agent is best and if multiple agents should be used remains unknown. Stronger evidence supports the use of either IL-6 inhibitors or Janus kinase inhibitors;

abatacept or infliximab are unlikely to become recommended on par with these treatments.

BOTTOM LINE: Abatacept and infliximab should not replace IL-6 or Janus kinase inhibitors as the recommended non-corticosteroid immunomodulators for treating hospitalized patients with COVID-19 pneumonia.

CITATION: O'Halloran JA, Ko ER, et al. Abatacept, cenicriviroc, or infliximab for treatment of adults hospitalized with COVID-19 pneumonia: A randomized clinical trial. *JAMA.* 2023;330(4):328-39.

Dr. Rose is a hospitalist at Johns Hopkins Hospital and an assistant professor of medicine and pediatrics at Johns Hopkins University School of Medicine in Baltimore. Disclosure: He received consulting fees from 20/20 GeneSystems regarding COVID-19 testing.

By Niloofar Latifi, MD

7 Risk stratification of patients with HF in the ED coupled with close outpatient follow-up reduces mortality and CV rehospitalization

CLINICAL QUESTION: In patients presenting to the emergency department (ED) with heart failure (HF) symptoms, are patient outcomes affected by the use of a risk stratification tool to guide the need for admission or discharge with close outpatient follow-up?

BACKGROUND: ED physicians often rely on clinical judgment to determine if patients presenting with heart failure symptoms need hospital admission or can be safely discharged with outpatient plan follow-up. Lack of access to timely outpatient care is a barrier to safe discharge planning from the ED and can lead to higher rates of hospitalization.

STUDY DESIGN: Step-wedged, cluster-randomized trial

SETTING: 10 academic and community hospitals in Canada

SYNOPSIS: 5,452 patients with the clinical diagnosis of HF presenting to the ED with acute heart failure symptoms were enrolled. Nursing home residents and patients with an inability to follow up outpatient were excluded. The intervention arm used the Emergency Heart Failure Mortality Risk Grade for 7- and 30-day mortality to triage patients to low, intermediate, and high risk. Low-risk patients were either discharged from the ED or underwent fewer than three days of observation before discharge with close follow-up appointments with cardiology. High-risk patients were admitted. Clinicians used their judgment on disposition for intermediate-risk patients.

Composite co-primary outcome of all-cause mortality or cardiovascular (CV) hospitalizations in the control versus intervention group was 14.5% versus 12.1% (HR, 0.88; 95% CI, 0.78-0.99) at 30 days and 56.2% versus 54.4% (HR, 0.95; 95% CI, 0.92-0.99) at 20 months. Among patients with early discharge, 27% of patients in the high-risk group were discharged in the control group compared to 19% in the intervention group. The intervention and control groups had similar rates of early discharge for low-risk patients. As the study included two interventions (risk stratification and outpatient follow-up), it is unclear which component was the main driver of the results.

BOTTOM LINE: Implementation of a risk-stratification tool to aid in determining disposition for patients with heart failure in the ED coupled with close outpatient follow-up reduces composite CV re-admission or mortality by 12% at 30 days and 1.8% at 20 months.

CITATION: Lee DS, Straus SE, et al. Trial of an Intervention to improve acute heart failure outcomes. *N Engl J Med.* 2023;388(1):22-32.

Dr. Latifi is a hospitalist at Johns Hopkins Hospital and an assistant professor of medicine at Johns Hopkins University School of Medicine in Baltimore. Disclosure: She prepares article reviews for Oakstone Practical Reviews in Hospital Medicine and has previously reviewed this article, which has been revised to meet our requirements.

By Sonia Dalal, MD

8 Risk for CKD progression after AKI

CLINICAL QUESTION: Is acute kidney injury (AKI) associated with subsequent worsening of renal function trajectory in patients with chronic kidney disease (CKD)?

BACKGROUND: Prior research has indicated that AKIs may lead to long-term renal function decline, and this has led to changes in clinical practice, funding, research focus, and even public health initiatives. However, those studies had methodologic limitations such as inadequate control for differences between patients with or without an AKI, and insufficient consideration of pre-AKI estimated glomerular filtration rate (eGFR), proteinuria, or eGFR slope.

STUDY DESIGN: Multicenter prospective cohort study

SETTING: U.S.

SYNOPSIS: This study evaluated 3,150 racially and ethnically diverse CKD patients using a linear mixed-effects regression model that adjusted for factors, such as pre-AKI eGFR and proteinuria, to assess post-AKI eGFR trajectory with measurements at annual study visits. There were 612 episodes of AKI among 433 patients in a 3.9-year median follow-up. After adjusting for pre-AKI factors, AKI was not independently associated with worsened kidney function. The findings suggest that decline in renal function after AKI is more likely attributable to pre-AKI factors and, thus, the focus should shift towards early treatment of CKD and proteinuria. Limitations included a lack of evaluation of the etiology of AKI or use of nephrotoxic medications after AKI, and a small number of severe AKI cases.

BOTTOM LINE: Mild to moderate AKI may have limited effect on subsequent renal function trajectory in patients with CKD.

CITATION: Muir AN, Hsu JY, et al. Risk for chronic kidney disease progression after acute kidney injury: Findings from the chronic renal insufficiency cohort study. *Ann Intern Med.* 2023;176(7):961-8.

Dr. Dalal is co-director of hospital education programs at Johns Hopkins Hospital and an assistant professor of medicine at Johns Hopkins University School of Medicine in Baltimore. ■



Dr. Rose



Dr. Latifi



Dr. Dalal

Celebrating Black HM Professionals

Examining their journeys in hospital medicine

By Lisa Casinger

In honor of Black History Month, we're highlighting four members of the Society of Hospital Medicine (SHM) who are making a positive impact on the lives of their patients, colleagues, students, and communities. Despite having different career paths, their stories share common threads.

Teaching, inspiring, and championing the next generation of doctors

TaLawnda Bragg, MD, FACP, internal medicine residency program director and an internal medicine hospitalist at Corewell Health in Grand Rapids, Mich., and associate clinical professor of medicine at Michigan State University College of Human Medicine, was inspired to become a hospitalist after seeing her father suffer with sickle cell disease and thalassemia. She was impressed with the care he received in the hospital, and the doctors who helped him recover became her role models. "I didn't know much about hospital medicine back then," said Dr. Bragg. "But to see my dad so ill, and then get better; the people in the hospital were miracle workers. Having hospital-based physicians who can navigate the acute-care world, swiftly build rapport with patients and their families, and diagnose and treat their acute illnesses through the lens of quality and safety, is priceless for patients and their families during these vulnerable times of being hospitalized."

Witnessing the care her dad received was the catalyst that led her down the health care path. Having amazing mentors throughout her residency kept the idea of hospital medicine at the forefront. Combining teaching, learning, mentoring, and collaborating—all the things she enjoys, which happen to be the principles hospitalists embody—steered her down the academic hospital-medicine path.

"Every day I get to learn, teach, mentor, and have a hand in training the next generation of physicians," Dr. Bragg said. "I think about the type of doctors it took to get my dad well. Witnessing that as a family member—physicians taking time, being trustworthy and culturally intelligent, and recognizing that structural deter-

minates of health put people on uneven footing—made me want to have a role in educating medical students and training resident doctors to be just like that."

As the program director for internal medical residency where she teaches about 45 residents and interacts with hundreds of students rotating through internal medicine, Dr. Bragg considers it her duty to stress those vital, valuable skills. "It brings me joy and hope for the future of medicine," she said.

She credits her team—the "best team ever"—for helping to make sure Corewell Health residents get the best educational training experience possible, which helps her thrive in her career. Because of this work, she sees promise in the next generation of physicians. "When you think of who physicians used to be, that's not who our patients need now. They need the new-age physicians, the ones involved in the communities. We need to know the people we serve; we need to meet them where they are and partner with them on their health journeys," Dr. Bragg said.

Thriving is more than surviving, and that's why she stresses the importance of physician well-being. Dr. Bragg tells her residents that while they're super and amazing, they're not superhuman. "You can't pour from an empty cup," she said. "We're better for our patients and communities if we maintain our health. Physicians are human beings who need the same care, regard, and TLC that patients need. We're turning out better physicians but how do we preserve this noble profession? Resilient?—I hate that word—we're plenty resilient. Instead, how can we change what's expected of physicians and the environment in which we practice so that our profession is sustainable and doesn't deplete us? The pandemic made things more obvious, but working and being burned out, but working anyway, was always there. The pandemic just made the importance of well-being more obvious and more of a critical necessity. That has to remain a priority."

Dr. Bragg is aware that fewer than 5.7% of all physicians are Black, and 2.7% are Black females.^{1,2} She believes the shortage of Black health care practitioners is a national problem and wants her colleagues to "protect us at all costs." She wants colleagues to realize that Black physicians "are in a constant state of self-repair, bleeding from a million different paper cuts," and their experiences as minority physicians can be very different.

People aren't used to seeing

Black physicians, let alone Black female physicians, so it's not at all uncommon for patients to assume she's a service worker, second-guess her diagnosis, treatment, and competency, or ask where she's from. What she sees ranges from subtle microaggressions to flat-out racism: requesting another (white) physician—fortunately, there's zero tolerance for racism and discrimination at Dr. Bragg's institution.

"Listen to our stories. Learn from us," Dr. Bragg said. "I want to be heard. We need our team members to be allies. To do that you have to listen." The best things colleagues can do are to be supportive and realize there are experiences that Black physicians deal with because of racial biases, and to be an advocate so they feel supported.

For Black hospitalists just beginning their careers, Dr. Bragg says, get connected. She says it's not uncommon to feel isolated as a Black physician, but you have to be open and let people get to know you. "Most Black hospitalists will find themselves as one or one of a few in their practice. Because of that, it's very unlikely that you'll find a senior Black hospitalist to be your mentor," she said. "But somebody hired you; somebody believes in you and wants you to succeed. Find the person. It's important to have someone who will have your back, especially if adversity arises. You need your people to support you."

Dr. Bragg says she's fortunate to be a mentoring physician and to have had many mentors who still support her. At her institution, she says when a new Black doctor joins the hospital she and other Black physicians will send an email letting them know, essentially, that they're not alone. "We're a small community; we have to take care of each other," she said. "It's an important responsibility—it will assure our survival in this area. It really is about making connections and what you can do for the next generation. Take time with Black medical students; try to help set them up for success. Be willing to be a mentor. It takes being open and brave."

It's also important to understand that patients need to see Black practitioners. Dr. Bragg's been a hospitalist for 15 years and a program director for eight and she still sees Black patients in their 80s and 90s who tell her they've never had a Black doctor before. "People of color have not seen themselves in the people who care for them," she said. And they need to.

What could be done to make hospital medicine more equitable and more accessible to Black practitioners? Dr. Bragg has some

ideas. "We have to stop hoping Black practitioners will find us. We need to be active in the recruitment process, develop pipeline programs, buy ads, attend minority-medical-student organization conferences as recruiters, and sponsor Black medical students' membership in professional societies. At my institution, we go to conferences and make connections with medical students. It seems simple, but we have to show them we appreciate them; we're here and we need you."

And, while admissions of Black students into medical school have increased, they're the slowest-growing demographic of doctors ever.³ "Early involvement, mentorships, and collaboration can be our superpower," Dr. Bragg said. "How can we collaborate with medical schools, high schools, even middle schools? Black students need to see Black physicians, so they know it's an option for them. We need to be engaged in our communities."

A transradiant mindset guides this PA

Patrick Desamours, MSPA, PA-C, MBA, CHC-QM, SFHM, is the director of APP operations in hospital medicine at US AcuteCare Solutions in Westminster, Md. His journey to becoming a physician assistant (PA) started during clinical rotations where he experienced diverse disciplines, but was particularly drawn to the acuity, diversity, and teamwork of hospital medicine. After passing his board, he worked at a hospital in Baltimore where he began experiencing the complexity of hospital medicine beyond medicine. He joined SHM to enhance his experience and grow professionally, investing in documentation, billing, and quality education.

Mr. Desamours attributes his ability to flourish and be successful to his wife's support, networking with other hospital medicine professionals, caring for patients, and his positive mindset. "My wife helps me thrive beyond measure," he said. "We started our careers around the same time. Our stressful days at work became normal conversations over dinner. She believes in me, and my ability, and her support and prayers keep me going daily."

Networking with others, he says, you meet people who make you feel like you've chosen the wrong profession and others who become family—both are needed



Dr. Bragg



Mr. Desamours

for growth. He approaches every challenge with a “transradiant mindset—a mental frame of my goals and values with a laser-like focus that propels me toward my objectives.”

In our current climate of misinformation and increased occupational violence, Mr. Desamours hopes his colleagues understand that sometimes Black practitioners have to work twice as hard to prove their credibility. “We’re often misidentified and misunderstood,” he said. “I wish they would realize that passion is not aggression, and being a bit louder isn’t inappropriate. There’s nothing more demoralizing than microaggressions.”

Mr. Desamours advises Black hospital medicine professionals just starting their careers to embrace their identity, set goals and objectives for their career path, define their success and happiness, build resilience, and deal with conflict with love and grace. “America is still grappling with issues of race, colorism, gender, political affiliations, etc.,” he said. “These are obstacles for you to make a difference in your career. Everyone has prejudices and biases; raise yourself above them. Patient care is your top priority; don’t let anyone or anything interfere with that. You have a life to save—that is a higher calling than any insult you could receive.”

When it comes to making hospital medicine more equitable and accessible to Black practitioners, Mr. Desamours believes that everyone is equal and that it’s time to give people the ability to have the full human experience. “We should treat people with dignity. With all fairness, many people live their entire lives around people who look like them and they want to be around those people. This is commonality; commonality is not racism,” he said. “These people deserve to have adequate education to help them understand that there’s a bigger world outside theirs. This is where implicit bias training, diversity and inclusion programs, transparent hiring practices, and cultural competency training can be very powerful if implemented properly. These efforts enhance equity and accessibility for Black hospitalists.”

Pediatric hospitalist advises being your authentic self

Ekua Cobinna, MD, is a pediatric hospitalist at Loma Linda University Children’s Hospital and an assistant professor of pediatrics at Loma Linda University in Loma Linda, Calif.



Dr. Cobinna

She was born in Accra, Ghana, to

a family of academics and raised to have a can-do attitude. Growing up, she always knew she wanted to work with children. She immigrated to the U.S. in 1996 and obtained her undergraduate and medical degrees from Creighton University in Omaha, Neb. She naturally gravitated toward pediatrics and completed her pediatric residency at Loma Linda University Children’s Hospital.

During her residency, Dr. Cobinna enjoyed inpatient patient care, but there was no dedicated hospital-medicine service at the time. “Pediatric hospital medicine was in its infancy and not as common,” she said. “I heard about pediatric hospitalist work while searching for a job. I was very intrigued, which started my journey as a pediatric hospitalist with a small private group in the Phoenix Metro area.” She later returned to academic medicine at Loma Linda University Children’s Hospital, where she was a founding member and is now associate division chief for hospital medicine of its rapidly growing pediatric hospitalist team. The team has grown from seven to more than 30 physicians in the last five years.

Dr. Cobinna credits her family, especially her mother, and her upbringing as the primary cornerstone of who she is. She was raised to believe there was no limit to what she could do if she put her mind and hard work into it. “However, in my professional journey, I have had countless mentors from different backgrounds (most of whom did not look like me) who were invested in my success and guided my growth in this challenging field,” she said.

Being a Black female physician has many challenges that she initially attributed to being a resident during her training. She wishes she had some mentorship in this area during her training. “As a Black female physician, the challenges are both invisible and super visible, as described by Cecil Reed in his Book, ‘Fly in the Buttermilk,’” Dr. Cobinna said. “We face ‘hyper scrutiny’ and often must be hyper-vigilant in navigating what Cody Stanford referred to in The Lancet as a version of the Goldilocks dilemma: ‘They are either insufficient and unsuitable, or boastful and overdone – never just right.’” She’s grateful for friends, family, and colleagues who are pioneering and spearheading thoughtful conversations to foster first awareness and cross-cultural relationships.

Dr. Cobinna advises Black hospitalists who are just beginning their careers to be “Be patient, open-minded, and your authentic self. Put your best foot forward, work hard, and the sky is the limit.”

She believes there are several ways to make hospital medicine more equitable and accessible to Black hospitalists. These include

investing in education around awareness of inequities, increasing the diversity of physicians (via recruitment efforts), and funding scholarships to improve research in healthcare equity (both physician- and patient-facing). Additionally, she suggests engaging with a younger generation of physicians, coaching and mentoring them, and placing early-career physicians in leadership positions to facilitate consistent growth in the program. Being intentional about highlighting Black physicians doing amazing work at their institution and beyond is also crucial.

According to Dr. Cobinna, funding pipeline programming to support future generations of hospitalists and physicians overall is critical to long-term stability.

“Diversity and inclusion are not simply buzzwords in today’s society; they are essential pillars that should be embraced within every aspect of our lives, including health care. Fostering diversity and promoting inclusion is crucial for providing equitable access to and delivery of quality care,” she said. “An orchestra comprises various instruments, each unique in tone and character, coming together harmoniously to create something beautiful. Similarly, diversity and inclusion in health care bring together individuals from different backgrounds, experiences, and perspectives to create a harmonious, inclusive, and effective health care system.”

Caring for patients in rural areas

Bryan Dawkins, MD, is vice president of hospital services of Elite Medical Services and a family physician and faculty member in inpatient family medicine in the family-medicine residency program at Lakeside Medical Center, which is an acute-care teaching hospital in rural Belle Glade, Fla.



Dr. Dawkins

Dr. Dawkins was inspired to become a hospitalist because of his upbringing in Jamaica and his move to the U.S. when he was 10 years old. He credits his parents, who were devoted to education and community service, for instilling in him a passion for medicine. He attended Howard University in Washington, which not only provided him with a strong medical education but also fostered a sense of identity and purpose as a Black practitioner.

Currently, he’s working as a hospitalist and faculty member of a family-medicine residency in Belle Glade, a rural and underserved area of South Florida, where he is

dedicated to improving accessible health care.

He attributes his success as a hospitalist to a combination of factors including unwavering support from his family, belief of mentors in his potential, and a strong sense of community. “These interconnected factors not only advanced my professional journey but also played a significant role in fostering a sense of belonging in a field where diversity is often lacking,” Dr. Dawkins said.

For colleagues who may not share the same experiences, Dr. Dawkins wants them to recognize the valuable perspectives and insights that Black health care professionals bring to the table. “Our diverse backgrounds enrich patient care, allowing for a more comprehensive and culturally sensitive approach,” he said. “Acknowledging and valuing these differences can lead to a more inclusive and effective health care system.”

“To my fellow Black hospitalists in the early stages of your careers, I advise staying true to your roots and the passion that led you to pursue medicine,” Dr. Dawkins said. “Seek out mentors who understand and appreciate your unique journey, and don’t hesitate to be a trailblazer. Embrace challenges as opportunities for growth and development, recognizing that your presence in this field is not only necessary but transformative.”

To ensure equitable access to hospital medicine for Black practitioners, Dr. Dawkins believes it is essential to address systemic issues contributing to inequality. Initiatives such as mentorship programs, diversity and inclusion training, and increased representation in leadership roles can create a supportive and inclusive environment. “Advocating for policies that promote equal opportunities and eliminate bias in hiring and promotions is critical for lasting change,” he said. “Through collective efforts, the goal is to make Black History Month not only a time for reflection but a catalyst for meaningful change in the medical field.” ■

References

- Boyle P. What’s your specialty? New data show the choices of America’s doctors by gender, race, and age. Association of American Medical Colleges website. <https://www.aamc.org/news/what-s-your-specialty-new-data-show-choices-americas-doctors-gender-race-and-age>. Published January 12, 2023. Accessed December 30, 2023.
- Rivero E. Proportion of Black physicians in U.S. has changed little in 120 years, UCLA research finds. News release. University of California, Los Angeles website. <https://newsroom.ucla.edu/releases/proportion-black-physicians-little-change>. Published April 19, 2021. Accessed December 30, 2023.
- Medical school enrollment more diverse in 2021. News release. Association of American Medical Colleges website. <https://www.aamc.org/news/press-releases/medical-school-enrollment-more-diverse-2021>. Published December 8, 2021. Accessed December 30, 2023.

- Tips (and a bit of common sense)
- Don't drink and drive. Ever. Take an Uber. Phone a friend. Do whatever is needed to avoid a DUI.
 - Document well. Make sure your daily notes meet local and national standards of documentation.
 - Don't self-prescribe or prescribe medications for friends or family. If you do so in an emergent situation, clearly document why in progress note format.
 - Don't hide anything from the medical board, including arrests, medical staff investigations, and more.
 - If you're under investigation, please do everything the board asks of you promptly.
 - Always document in real time for prescriptions you're writing for family or friends—and be sure to save those documents. I've seen where someone created a Word document after the complaint was initiated and the medical board could see when the document was created and modified.
 - Do not voluntarily resign or withdraw your privileges from a hospital if you are under active investigation by their medical staff. Some hospitals, in their medical staff bylaws, state that doing so will cause a complaint automatically to proceed to their state medical board.
 - Remember that once a public order is published by a state medical board, it will be seen in other states where you have a license. Those states can do their own investigation into the matter. Surrendering your license in one state to avoid an investigation will only prompt other states to investigate.
 - I've seen a complaint about an unrelated and minor issue that led to the subpoena and review of prescriptions sent to local pharmacies. That review led to the discovery that the physician in question was self-prescribing, and prescribing for family members, various controlled substances. Never prescribe controlled substances outside of your traditional medical practice.



How to Handle Medical Board Complaints and Investigations

Transparency and communication are key

By Robert A. Craven, MD, FACP, CHCQM-PHYADV, SFHM

First, a disclaimer: I am not an attorney, and this is not intended to be legal advice. Any specific questions or concerns you may have should be directed to your legal counsel. The recommendations in this article are my own opinions and do not represent those of SHM, McLeod Health, or any other entity.

Few things cause panic in a doctor's life like a phone call or letter from a state medical board. That initial call or letter can tarnish reputations and threaten and potentially end careers. I recently responded to a post on a popular physician forum on social media concerning a physician who had a complaint filed against her to her state medical board. I mentioned that I review complaints for my state medical board and offered my free advice, which she gladly welcomed. Soon after, I received a handful of requests from other physicians across the country going through similar situations, which led to the realization that this is a large and frequent issue that can be incredibly stressful for

the physician in question and their family.

Please keep in mind that state medical boards exist for one specific reason—to protect the citizens of their state from haphazard and/or dangerous medical care. They do not exist to protect physicians. Each state's medical board operates differently and independently based on its bylaws, which are formed and regulated by the state legislature, not the state medical board. You can usually find your state's bylaws on its website. The state medical board enforces these laws but cannot create or change them. Some states post physician board orders publicly while others do not.

Recently, there has been a push for more transparency and better communication between different state medical boards, especially after the highly publicized Dr. Christopher Duntsch (aka "Dr. Death") case in Texas, where a fellowship-trained spine surgeon was eventually arrested and convicted of aggravated assault and injury to an elderly person in 2015, after years of bad patient outcomes, some of which were seemingly intentional. Dr. Duntsch was sentenced to life in prison in 2017. The



Dr. Craven

Dr. Craven is the vice president of case management, physician advisor, and hospitalist at McLeod Health, in Florence, S.C. He's also a member of The Hospitalist's editorial board.

case received national attention and shined a light on loopholes in medical board processes that allow potentially dangerous physicians to move from one hospital to another unchecked. Some state medical boards have changed their policies and procedures in response to this case to take physi-

cian complaints more seriously.

Types of complaints and investigations

Medical board complaints and investigations come in different forms and each category is addressed differently. There are criminal investigations like arrests and DUIs, complaints sent directly to the board—usually from patients, other practitioners, pharmacists, or nurses—and medical malpractice cases where a payout occurred.

If you practice medicine long enough, you'll likely know another physician who has been arrested. I've seen numerous stories unfold among my colleagues over the years, including DUIs, solicitation of prostitution, domestic violence, and failure to pay child support. Some medical boards run daily reports on arrest records within their state, checking names and dates of birth for potential matches to their licensed physicians. If one is found, the board initiates an investigation. However, most states do not actively look for physician misbehavior. Instead, they expect the physician to self-report any arrest. Those who don't could face serious consequences should the board later discover the infraction. In criminal situations, it is best to hire an attorney and be forthcoming to the medical boards where you are licensed. Typically, physicians' criminal or behavioral issues are handled by a specific committee on the medical board. Depending on the results of the charges, the medical board will follow their bylaws on how best to proceed.

It's important to remember that anyone can generate a formal complaint against a physician with a state medical board, including patients, patients' family members, nurses, pharmacists, colleagues, and hospital medical executive committees. While some states do not accept anonymous complaints, there are several states that either allow them or are heading in that direction.

The process

Most state medical boards follow a similar process once a complaint is filed. Initially, the physician in question will receive notice of the complaint, usually by phone call or letter. They will be given the opportunity to explain themselves via a written letter, a phone call, or a teleconference. Some states end the investigative process altogether and dismiss the complaint based entirely on the physician's response to the complaint, so the content of the response is crucial.

In this scenario, many physicians consider hiring an attorney. Whether or not legal representation is necessary, in my opinion,

depends on the circumstance. If no harm occurred to the patient and the complaint seems trivial, I would not recommend getting an attorney. Instead, if you're the doctor in question, you should craft a thorough and well-written response letter to the medical board that explains your side of the story. I recommend the response be shared with others, preferably those who are familiar with this process. Also, it's imperative that a response is error-free, so a good proofreader is essential.

If you feel the complaint has legitimacy or there was harm, whether there was causation or not, I recommend hiring an attorney to help you through this process. Keep in mind that many medical malpractice insurance policies include coverage for this scenario. Also, if you're employed by a hospital or health care system, they often have in-house legal counsel who would prefer to be involved before you contact your medical malpractice insurer. If you are hesitant to contact your in-house legal counsel for privacy reasons, please realize some medical staff bylaws require you to let your medical executive committee know if you have received any medical board complaints.

It is difficult to estimate how many of these complaints are dismissed without a formal investigation, but it is the majority. If not, the medical board will typically have the case reviewed by one or more peer experts like me. As an internal-medicine-trained hospitalist, I frequently review cases for my medical board that involve the practice of hospital medicine. The medical board will subpoena all relevant records, including prescription history, and send these to the reviewing physician(s) in addition to the written statement of the physician in question and the initial complaint. The reviewing physician will typically focus on three questions:

1. Was there a deviation from the standard of care?
2. Was there harm to the patient because of this deviation?
3. Did the physician's documentation meet the minimum standard as defined by that state's medical bylaws?

The reviewer writes a report based on their assessment and sends it to the medical board, where it's reviewed by the committee that handles complaints. They then vote on how best to proceed. This typically yields three possible results: proceeding with a formal complaint, which is a legal proceeding; issuing a letter of caution, which can be public or confidential depending on the state; or the dismissal of the complaint.

Dismissal is self-explanatory and does not get reported to the federal database or go on your per-

manent record. A letter of caution might have a different title and be publicly posted depending on the state. This occurs more frequently than a formal complaint and does stay on your record. A formal complaint usually requires additional action by the physician in question. This is where disciplinary action or remediation typically occurs. The physician in question will likely be given the options to either accept the board recommendations regarding education, fines, etc., or proceed with a series of hearings. Some states have a panel hearing available where the physician's case will be presented to a group, mostly made up of physician peers (like me). This panel will then decide whether the physician is guilty of the claims brought against them. If so, the physician in question will have to either proceed with the board's recommendations or proceed with a formal hearing in front of the actual medical board.

Decisions at this level include complaint dismissal (which is unlikely if the complaint has made it this far), mandatory education or remediation, license suspension, or license revocation. Some states will not allow doctors who have had their licenses previously revoked to work in their state. It is typically easier for everyone in-

volved if you can resolve the issue without proceeding to a hearing. Keep in mind these steps vary from one state to another, so it's extremely important to familiarize yourself with your state's policies and procedures.

Medical malpractice cases are typically referred to your state medical board after the civil proceedings have been completed and if there has been a payout made in your name, whether through a pre-trial settlement or a jury verdict. Some states will require you to disclose when you're named in a suit, but most only require notification if you're named in a payout.

Again, it would benefit you to familiarize yourself with your state's expectations in this scenario. Typically, the same legal counsel that represented you during your malpractice case would also represent you before your medical board.

Medical board complaints and their subsequent investigations can be scary, but remember that everything is reviewed by a peer physician who is not on the medical board. They should give you the benefit of the doubt. Try to use the tips in this article to keep these reviewers—and your state medical board—on your side. ■

Get the Latest Data at Your Fingertips!

"I use the SoHM Report for everything from looking at productivity, compensation, and scope of practice to operational structure for other practices. I love how it provides information on where we could be as a group or highlights areas to focus on as leaders."

~Romil Chadha, MD, MPH, SFHM

Use the 2023 *State of Hospital Medicine* Report to help make informed decisions in the coming year as hospitalists and healthcare systems continue to navigate the future of the specialty. **Order Today at hospitalmedicine.org/sohm**

Debriefings After an Unexpected Hospital Death or Code

Helping trainees—and hospitalists—move forward

By Larry Beresford

Hospitalist and palliative-care physician Kencee Graves, MD, FACP, recalls participating on a difficult code-team response while still a new medicine intern at the University of Utah, where she is now chief medical officer for inpatient health. This case was her first death on duty.

The patient was a woman in her 40s brought in by ambulance after an unexpected cardiac arrest in the community. “It was awful because her family was out in the hall waiting and watching. It was just this overall very traumatic experience,” Dr. Graves said. “We were ultimately unsuccessful in resuscitating her on a second attempt, despite a lot of effort. And for those of us who were in a learning position, residents, and interns, we were all a little shell-shocked.”



Dr. Graves

She continued, explaining that the next morning the attending came into the hospital and said, “For today’s didactic session, we’re going to talk about what happened last night.’ It still amazes me how cathartic that experience was, having that talk. I remember thinking that taking the time to honor that person and discuss what happened helped us all move forward.”

One name for this kind of postmortem conversation by the hospital team is debriefing, although it’s also called a time-out or a pause. It is increasingly done in hospitals when a patient dies, typically after an unsuccessful code.¹ Different hospitals and teams may approach debriefings in different ways, with greater or lesser degrees of formality and structure, sometimes but not always with an emphasis on medical trainees.² Debriefings have been shown to improve participants’ ability to manage their grief and are associated with lower rates of burnout.

The American Heart Association’s Advanced Cardiac Life Support protocol spells out how to do a debriefing as a facilitator-led, reflective, participant discussion of the events, assimilated into the trainees’ learning.³ In 2009 Jonathan Bartels, a trauma- and emergency-care nurse, developed the medical pause, a procedure implemented after the death of a patient.⁴ Any member of the medical team can request a pause after an unsuccessful code, preferably performed immediately after the death is called around the patient’s bedside.

Doing a debriefing in the room of a patient who has just died may not always be advisable, however, depending on the presence and emotional state of the family. Busy schedules and competing pages and texts also need to be overcome. It may mean taking the team down the hall to the nearest available conference room and asking everyone to hold their pages for the few minutes of the debriefing. But regardless of those constraints, the debriefing should be done as soon as it can be arranged for as many members of the team as possible. Whatever the format or setting, it shows the team that this moment is important because this death was significant.



When there is an event like this in the hospital, a code or rapid response or bad outcome, clinicians need an opportunity to acknowledge the loss, Dr. Graves said. “I think the worst thing we can do is act like nothing happened.”

Not just codes

“The baseline for debriefings was the code team,” she said. “But as I had more experience in my career, I started to realize there are a lot of events in the hospital beyond codes that can have as big an impact emotionally as a code does on residents, students, nurses, and other team members. So, I started debriefing every single big event—a code, a rapid response, a medical error, even a patient on comfort care whose death was anticipated. Sometimes those are wrought with complexity,” Dr. Graves said.

“I always start by asking the participants, ‘How are you doing? I want to be clear that I care about you as a human being. I want to help you get through this event, and that’s the point of why we’re doing this. Let’s take a second to recognize what happened, and talk about the

questions you have, what you would have liked to see happen differently.’”

Being able to express feelings is important, but for many participants, it’s also important to review the clinical facts of the case, bringing a quality-improvement perspective to the debriefing, said Rab Razzak, MD, a hospitalist and director of palliative care at University Hospitals in Cleveland. Like Dr. Graves, he is active in SHM’s Palliative Medicine Special Interest Group, which has tried to educate the hospital medicine field about debriefings. What went well? What could have been done differently? Are there ethical or moral issues to explore? What can we all learn going forward?



Dr. Razzak

Moving on doesn’t work

Elizabeth Gundersen, (@top_gundersen), MD, FAAHPM, FHM, a hospitalist and palliative-care physician at the University of Colora-

do School of Medicine in Aurora, Colo., has a large role in medical education, working with students and residents. “I try to view this topic of debriefing after death from their perspective. Whether it is an expected or unexpected death, it can be traumatic, and the debriefing can help soften the blow,” she said.



Dr. Gundersen

“We learn in medical training that we need to put the needs of the patient first. So, if we’re rounding and something happens and a patient dies, we’ve trained ourselves to just pick up and soldier on and go see the next patient. I’ve had students come to me and say, ‘You know, the patient died, and the team just carried on like nothing happened,’” Dr. Gundersen said.

“Quite often the health care infrastructure/system has taught us that we need to keep seeing more patients,” Dr. Razzak said. “We have to hit our targets, our RVUs. And the culture historically has told us: You move on. One thing we’ve recognized, especially through the pandemic, is that we’re in a very different place today in medicine.

Many of us are suffering from burnout, moral injury, and other emotions of despair or hopelessness.”

Doctors have learned that moving on doesn’t work. “There can be an emotional stacking effect that occurs from moving on, from not addressing what we’re going through, from not talking about it or processing it. It’s going to show up later, perhaps as no longer feeling engaged with our patients and families, which is a sign of burnout,” he said.

Palliative care’s contribution

Dr. Graves, who is also board-certified in hospice and palliative medicine, thinks hospital-based palliative-care teams have something to offer to the rest of the hospital when it comes to debriefings after sudden deaths. Palliative care may have more experience with in-the-moment debriefings for deaths on service since it often is involved with more of these challenging cases.

“Because we see difficult cases and deaths, we are aware that the risk of compassion fatigue and burnout are higher if we don’t,” she said. And the team’s commitment to interdisciplinary teamwork and person-centered care makes the

debriefing even more important.

Palliative-care teams like hers dedicate time, perhaps weekly, to continue these conversations. “For my team, that’s where we formally pause, reflect, talk about our patients who have died, their lives, our journeys with them. Our chaplain does a kind of ritual, perhaps reading a poem, and we say their names. It’s a nice way to close the book of their lives.”

Based on its experience with creating opportunities for this kind of closure, the palliative-care team can be called on by hospitalists to help them enact debriefings for their patients, Dr. Graves said. “I think what palliative care can do well is help support other hospital teams through some of their toughest cases.”

Dr. Razzak’s team also meets weekly at a set time for a routine review of cases and to talk about how everyone is doing, what’s been hard, and what’s been enjoyable. “It actually helps us process, it helps us build community and move forward.”

Dr. Gundersen said that it’s important for hospitalists to have a method by which they debrief and process after patients’ deaths. “That is a skill of self-care that we need for ourselves, as well as

teaching it to our learners. And if hospitalists are not doing it for themselves, then that’s the lesson they’re passing on to their learners,” she said.

“I’m making a case for why hospitalists need to role-model this, and why medical educators and the whole system need to be intentional about providing the spaces where we can talk about these cases.” ■

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

References

1. Kam AJ, et al. Implementation and facilitation of post-resuscitation debriefing: a comparative crossover study of two post-resuscitation debriefing frameworks. *BMC Emerg Med.* 2022;22(1):152.
2. Govindan M, et al. Empowering residents to process distressing events: A debriefing workshop. *MedEdPORTAL.* 2019;15:10809.
3. 2020 American Heart Association Guidelines for CPR and ECC: Part 7: Systems of care. American Heart Association website. <https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines/systems-of-care>. Published October, 2020. Accessed December 31, 2023.
4. Bartels J. About the medical pause. Thepause.me website. <https://thepause.me/2015/10/01/about-the-medical-pause/>. Published October 1, 2015. Accessed December 31, 2023.

Save The Date!



#HowWeHospitalist

shm®

Celebrating the Human in Hospitalist.

March 7, 2024 is National Hospitalist Day.

This year, we invite you to celebrate by sharing your life outside of the hospital to highlight what makes you... **you**. Join us and participate in our social media, writing, and art contests.

[hospitalmedicine.org/
hospitalistday](https://hospitalmedicine.org/hospitalistday)

The Role of D-dimer in Diagnosing Pulmonary Embolism

By **Leela Chockalingam, MD,**
Kendal Flegenheimer, MD,
and **Amiran Baduashvili, MD**

Case

A 58-year-old previously healthy woman presents with pleuritic chest pain triggered by moving heavy boxes. She denies dyspnea, extremity swelling, hemoptysis, recent surgery, immobility, personal or family history of blood clots, malignancy, or smoking. Her vitals and physical exam are unremarkable. An electrocardiogram, chest radiograph, and laboratory evaluation, including troponin, are normal. She has a low pre-test probability (PTP) for pulmonary embolism (PE). D-dimer returns elevated to 700 ng/mL (normal <500 ng/mL). Is further imaging to evaluate for PE indicated?

Brief overview

The annual incidence of PE in the U.S. is approximately 700 cases per million individuals. PE ranks third among causes of cardiovascular mortality, responsible for approximately 100,000 deaths per year.¹ The most widely used diagnostic strategies include a clinical decision rule, such as the Wells or revised Geneva score, in combination with d-dimer testing. D-dimer thresholds can be fixed (500 ng/mL), age-adjusted (age times 10 ng/mL in patients aged over 50 years), or dependent on clinical PTP (higher d-dimer thresholds in lower PTP) such as determined by the YEARS algorithm.² A network meta-analysis evaluating the diagnostic performance of these three scoring systems found all to be safe across predefined patient

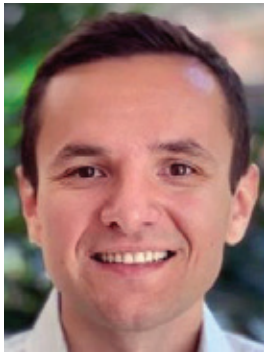
subgroups, and no single strategy was favored.³ Although catheter-based pulmonary angiography is considered the reference standard for diagnosing PE, it is rarely performed due to its invasive nature, the need for specialized providers to perform it, and its high cost. Computed tomography pulmonary angiography (CTPA) is the preferred imaging modality for diagnosing PE. Ventilation/perfusion (V/Q) scanning and compression ultrasound (CUS) are typically reserved for patients in whom CTPA is contraindicated or inconclusive (Table 1). Despite excellent test characteristics, CTPA can yield false-positive results. The CTPA specificity of 98% implies that 2% of those without PE have a false-positive scan. According to Bayes' rule, there is a 50% chance a positive CTPA result for a patient with a very low PTP (approximately 2%) is a false positive. A single-center retrospective study found that 26% of all positive CTPAs and 59% of subsegmental PE diagnoses were false positives (irrespective of patients' PTP), as all three blinded expert radiologists disagreed with the initial CTPA-based PE diagnosis.⁴ Furthermore, an analysis of U.S. nationwide PE-related trends from 1993 to 2006 showed PE incidence increased by 80% after the introduction of CTPA in 1998, but PE-related mortality only marginally decreased, likely due to false positives or overdiagnosis of clinically insignificant PEs.⁵ Given the concern for overdiagnosis and false positives, especially in those with low PTP, clinicians should be cautious about over-utilizing CTPA. When used correctly, d-dimer can further stratify PE



Dr. Chockalingam



Dr. Flegenheimer



Dr. Baduashvili

Dr. Chockalingam is a senior instructor of medicine in the division of hospital medicine at the University of Colorado School of Medicine in Aurora. Dr. Flegenheimer is a clinical assistant professor of medicine at the University of Arizona Health Sciences Banner University Medical Center in Tucson. Dr. Baduashvili is an associate professor of medicine in the division of hospital medicine at the University of Colorado School of Medicine in Aurora.

probability and reduce unnecessary testing. D-dimer is a degradation product of cross-linked fibrin, a by-product of clot breakdown that occurs when the fibrinolytic pathway is activated. D-dimer assays rely on a variety of testing methodologies and a lack of standardized calibrators and reporting units, resulting in between-assay variability.⁶ Some assays use purified d-dimer as the calibrator and report results in d-dimer units (DDU), while others use plasmin proteolysis products of fibrin clots and report results in fibrinogen equivalent units (FEU). Most guidelines are based on assays reporting in FEU, using 500 ng/mL as the clinical cut point. DDU can be approximated to FEU by multiplying the d-dimer concentration by two.⁷ For example, 250 ng/mL DDU is roughly equivalent to 500 ng/mL FEU. All d-dimer units mentioned henceforth are expressed in ng/mL FEU.

ased underestimation of d-dimer sensitivity. **Overcoming oversimplification—interval likelihood ratios** Generally, PE is ruled out in patients with low to intermediate PTP and a negative d-dimer. However, interpreting d-dimer results simply as positive and negative oversimplifies the continuous diagnostic test.⁸ Setting a cut point at 500 ng/mL implies that d-dimer results of 490 and 510 ng/mL have vastly different effects on the likelihood of PE. Moreover, an undetectable d-dimer and a d-dimer level of 490 ng/mL are considered equally negative, and the levels of 510 and 10,000 ng/mL are equally positive, which does not reflect clinical experience or intuition. A clinician interpreting the d-dimer result of 600 ng/mL may question how this result or a narrow range around it, such as 500 to 750 ng/mL, affects the probability of PE. To obtain this information, one needs to know the probability of patients with PE having a d-dimer around 600 ng/mL, divided by the probability of patients without PE having a d-dimer in the same range (Figure 1). Interval likelihood ratios (iLR) provide precisely such information.⁸ To maximize diagnostic utility, Kohn and colleagues⁹ aggregated patient-level data from five studies to produce iLRs for eight different d-dimer strata (Table 2, Figure 1).

Using iLRs leads to the following insight: a patient with intermediate PTP with a “negative” d-dimer <250 ng/mL and a patient with low PTP with a “positive” d-dimer of 600 ng/mL both have the same post-test probability of PE: under 2%. However, conclusions differ with the dichotomous LRs, potentially leading to unnecessary additional testing for

Key Points

- Clinical decision rules and PTP-adjusted cut points for d-dimers, including the YEARS algorithm and the approach from the PEGeD study, lead to improved efficiency of CTPA utilization without compromising diagnostic accuracy.
- Use of iLRs, such as those adapted in Table 2 from Kohn et al., instead of binary cut points, allows for a more nuanced and accurate use of d-dimer.⁹
- Unnecessary CTPA scans in patients with low to intermediate PTP and sufficiently low d-dimers to exclude PE may lead to increased rates of false-positive results.
- Use of the iLRs or the PTP-adjusted cut points is preferred to a single, binary, cut-point interpretation of d-dimer.
- Further research is needed to determine if very low d-dimer levels may potentially reduce the need for imaging among high-PTP patients, inpatients, or those with inflammatory conditions.
- Malignancy, sepsis, trauma, surgery, and aortic dissection or aneurysm should be considered in patients with very high d-dimer and absence of PE

Overview of the data

Basic test characteristics

The modern enzyme-linked and latex-based d-dimer assays have a pooled sensitivity of 97% (95% CI, 96-98%) and specificity of 41% (36 to 46%) according to a meta-analysis of 34 studies involving over 22,000 patients.¹ An age-adjusted d-dimer has 99% sensitivity and 47% specificity, however, these test characteristics are derived from a different set of studies.¹ Most d-dimer studies use CTPA as the reference standard. It is worth noting that if a patient without a true PE and a false-positive CTPA has a low d-dimer, the low d-dimer will be incorrectly labeled as a false-negative result. This misclassification leads to a bi-

a patient with low PTP (Figure 2).

The YEARS algorithm suggests that mildly elevated d-dimer levels reduce PE probability. The algorithm excludes PE both for low and intermediate PTP patients (scores 0 to 1) with a d-dimer <500 ng/mL and for patients with a score of 0 and a d-dimer level between 500 and 1,000 ng/mL.² The PEGeD study evaluated 315 patients with low PTP (Wells score 0 to 4) and d-dimer levels between 500 and 999 ng/mL, and none of them were diagnosed with VTE during a 3-month follow-up.¹⁰ The YEARS and PEGeD study strategies, which allowed for d-dimer cutoffs to vary with PTP, reduced CTPA use without compromising diagnostic accuracy.¹⁰

D-dimer for patients with high PTP

The use of d-dimer to exclude PE is generally not recommended for patients with high PTP, as it may not sufficiently lower PE probability.¹¹ However, the modern d-dimer assays may have sensitivity upwards of 99% with a negative LR under 0.02.¹² Applying Bayes’ rule, a very low d-dimer can decrease a high PTP of 50% to about 2%, which is within the accepted failure rate.¹³ However, most studies conducted on d-dimer focused on low- and intermediate-PTP populations, making it challenging to assess if these test characteristics apply to those with high PTP. Two observational studies involving high-PTP patients (n=541) and those with prior VTE (n=308) have reported d-dimer sensitivity of 100% and a correlated low false-negative rate, however further research is needed to determine if d-dimer can safely exclude PE in high-PTP populations.^{14,15}

D-dimer for other special populations

Most d-dimer validation studies have been conducted in outpatient and emergency-department settings. Thus, it is unclear whether d-dimer can be used in hospitalized patients and other special populations such as post-surgical, pregnant, or autoimmune patients who may have higher baseline d-dimer levels. The 2018 American Society for Hematology guidelines note that d-dimer has limited utility in these populations, partially due to the scarcity of research in these patients.¹¹ One retrospective study of 600 inpatients from 2014 to 2019 found that when using age-adjusted d-dimer cut points, VTE prevalence was 7%, sensitivity 90%, specificity 30%, and negative predictive value 97%.¹⁶

Similarly, there is a paucity of literature evaluating d-dimer test characteristics for patients with autoimmune conditions. One study of 276 inpatients with systemic lupus erythematosus undergoing d-dimer testing for VTE

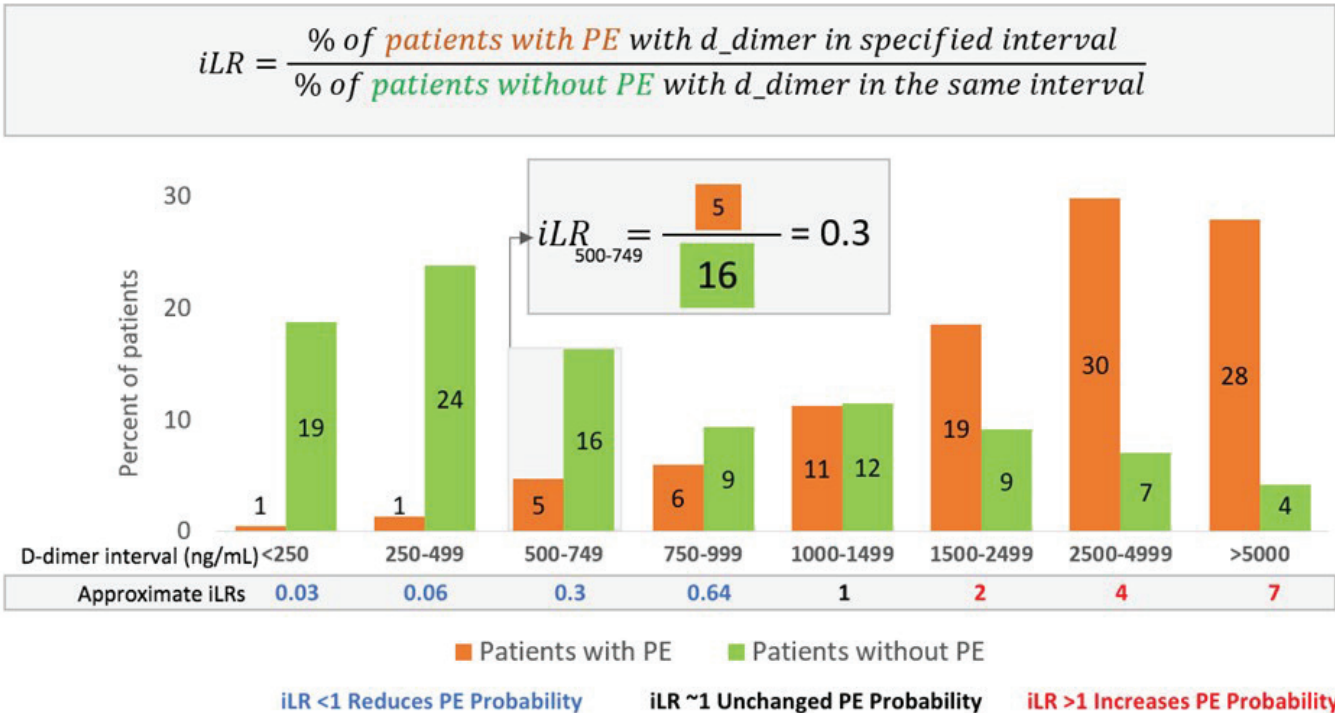


Figure 1: Graphical display of D-dimer interval likelihood ratios

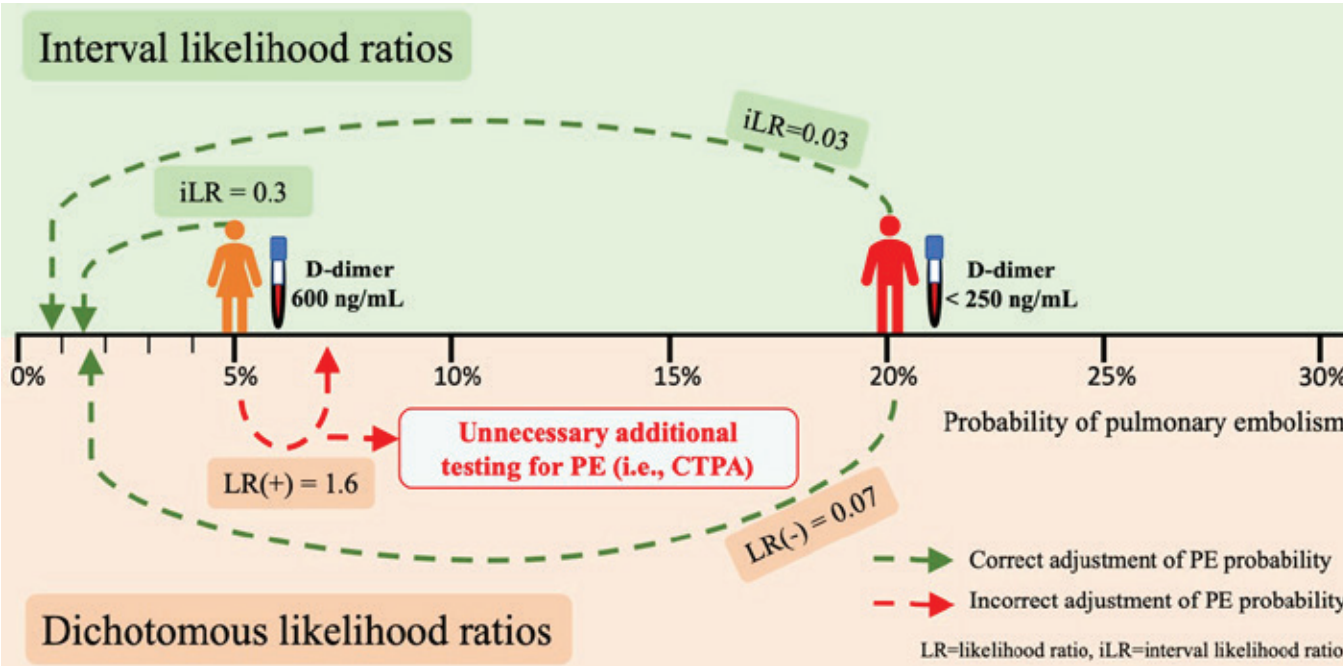


Figure 2: D-dimer interval and dichotomous likelihood ratios for the diagnosis of pulmonary embolism. The figure demonstrates the correct (interval) and incorrect (dichotomous) approaches to PE probability adjustment for the patient with low PTP (5%) and slightly elevated d-dimer of 600 ng/mL.

Table 1: Test Characteristics for CTPA, CUS, and V/Q Scan for the Diagnosis of PE

TESTING MODALITY	SENSITIVITY	SPECIFICITY	LR+	LR-
CTPA	94%	98%	47	0.06
CUS	49%	96%	12	0.53

V/Q Test Characteristics*

PE PROBABILITY	PATIENTS WITH PE	PATIENTS WITHOUT PE	LR FROM META-ANALYSIS**	LR FROM PIOPED I
High	58%	2%	29	19
Intermediate	40%	62%	0.65	1.25
Low				0.37
Normal	2%	36%	0.06	0.09

CTPA: computed tomography pulmonary angiography; CUS: compression ultrasonography; V/Q: ventilation-perfusion; LR: likelihood ratio; PE: pulmonary embolism; PIOPED: prospective investigation of pulmonary embolism diagnosis

*V/Q test characteristics are not presented using sensitivity and specificity since the test outcome is not dichotomous

** Patel et al 2020¹

evaluation found that d-dimer had 93% sensitivity, 28% specificity, and 97% negative predictive value.¹⁷ While these studies are too small to draw significant inferences, they indicate that low d-dimer levels may sufficiently lower PE probability in these populations with baseline elevated d-dimers, but further research is warranted.

The role of d-dimer in diagnosing VTE in patients with COVID-19 remains unclear. A 2021 meta-analysis noted a marked variability in d-dimer thresholds (all dichotomized at 1,000 ng/mL or above) and test characteristics.¹⁸

Very high d-dimer levels

Very high d-dimer in the absence of PE should not be disregarded as a non-specific finding. An observational study found that patients with d-dimer levels above 5,000 ng/mL had a range of other conditions in addition to VTE (40%), including malignancy (29%), severe infection (24%), recent trauma or surgery (24%), and arterial dissection or aneurysm (6%).¹⁹ Therefore, when faced with extremely high d-dimer levels, clinicians may consider a broad range of further diagnoses and pursue evaluation as appropriate.

Application of data to original case

The patient has a low PTP according to Wells and modified Geneva criteria. D-dimer level between 500-1,000 ng/mL modestly reduces her probability of PE (Table 2). Further testing with CTPA is not warranted, in line with the YEARS algorithm and PEGeD study.^{2,10} The d-dimer result has markedly lowered the PE probability in this patient. Other etiologies should be explored for her symptoms.

Bottom line

Mildly elevated d-dimer levels do not increase PE probability. The use of Bayes’ rule and iLRs for d-dimer may help reduce unnecessary imaging for low and intermediate PTP patients without sacrificing diagnostic accuracy. ■

References

1. Patel P, Patel P, et al. Systematic review and meta-analysis of test accuracy for the diagnosis of suspected pulmonary embolism. *Blood Adv.* 2020;4(18):4296-311.

2. van der Hulle T, Cheung WY, et al. Simplified diagnostic management of suspected pulmonary embolism (the YEARS study): a prospective, multicentre, cohort study. *Lancet.* 2017;390(10091):289-97.

3. Stals MAM, Takada T, et al. Safety and efficiency of diagnostic strategies for ruling out pulmonary embolism in clinically relevant patient subgroups : A systematic review and individual-patient data meta-analysis. *Ann Intern Med.* 2022;175(2):244-55.

4. Hutchinson BD, Navin P, et al. Overdiagnosis of Pulmonary Embolism by Pulmonary CT Angiography. *AJR Am J Roentgenol.* 2015;205(2):271-7.

5. Wiener RS, Schwartz LM, et al. Time trends in pulmonary embolism in the Unit-

Table 2: D-dimer Interval Likelihood Ratios for the Diagnosis of Pulmonary Embolism (total n=6,013, PE+=1,047, PE-=4,966)*

D-DIMER INTERVALS (NG/ML FEU)	PATIENTS WITH PE, % (N)	PATIENTS WITHOUT PE, % (N)	ILR	LR 95% CI
<250	0.5 (5)	18.7 (930)	0.03	0.01-0.06
250-499	1.3 (14)	23.8 (1,180)	0.06	0.03-0.09
500-749	4.7 (49)	16.3 (810)	0.3	0.22-0.38
750-999	6.0 (63)	9.4 (468)	0.64	0.50-0.82
1,000-1,499	11.3 (118)	11.5 (570)	1	0.81-1.18
1,500-2,499	18.5 (194)	9.1 (450)	2	1.8-2.4
2,500-4,999	29.8 (312)	7.0 (349)	4.2	3.7-4.9
>5,000	27.9 (292)	4.2 (209)	6.6	5.6-7.8

PE=pulmonary embolism, iLR=interval likelihood ratio, CI=confidence interval
*data adapted from Kohn MA et al. ⁹

ed States: evidence of overdiagnosis. *Arch Intern Med.* 2011;171(9):831-7.

6. Riley RS, Gilbert AR, et al. Widely used types and clinical applications of d-dimer assay. *Lab Med.* 2016;47(2):90-102.

7. Thachil J, Longstaff C, et al. The need for accurate D-dimer reporting in COVID-19: Communication from the ISTH SSC on fibrinolysis. *J Thromb Haemost.* 2020;18(9):2408-11.

8. Baduashvili A, Guyatt G, et al. Anatomy-getting the most out of your diagnostic test. *J Gen Intern Med.* 2019;34(9):1892-8.

9. Kohn MA, Klok FA, et al. D-dimer interval likelihood ratios for pulmonary embolism. *Acad Emerg Med.* 2017;24(7):832-7.

10. Kearon C, de Wit K, et al. Diagnosis of pulmonary embolism with d-dimer adjusted to clinical probability. *N Engl J Med.* 2019;381(22):2125-34.

11. Lim W, Le Gal G, et al. American

Society of Hematology 2018 guidelines for management of venous thromboembolism: diagnosis of venous thromboembolism. *Blood Adv.* 2018;2(22):3226-56.

12. Carrier M, Righini M, et al. VIDAS D-dimer in combination with clinical pre-test probability to rule out pulmonary embolism. A systematic review of management outcome studies. *Thromb Haemost.* 2009;101(5):886-92.

13. Dronkers CEA, van der Hulle T et al. Towards a tailored diagnostic standard for future diagnostic studies in pulmonary embolism: communication from the SSC of the ISTH. *J Thromb Haemost.* 2017;15(5):1040-3.

14. Kabrhel C. Outcomes of high pretest probability patients undergoing d-dimer testing for pulmonary embolism: a pilot study. *J Emerg Med.* 2008;35(4):373-7.

15. Le Gal G, Righini M, et al. Value of D-dimer testing for the exclusion of pul-

monary embolism in patients with previous venous thromboembolism. *Arch Intern Med.* 2006;166(2):176-80.

16. Karny-Epstein N, Abuhassira R, et al. Current use of D-dimer for the exclusion of venous thrombosis in hospitalized patients. *Sci Rep.* 2022;12(1):12376. doi:10.1038/s41598-022-16515-6

17. Oh YJ, Park EH, et al. Practical utility of d-dimer test for venous thromboembolism in systemic lupus erythematosus depends on disease activity: A retrospective cohort study. *J Korean Med Sci.* 2020;35(43):e356. doi:10.3346/jkms.2020.35.e356

18. Kwee RM, Adams HJA, et al. Pulmonary embolism in patients with COVID-19 and value of D-dimer assessment: a meta-analysis. *Eur Radiol.* 2021;31(11):8168-86.

19. Schutte T, Thijs A, et al. Never ignore extremely elevated D-dimer levels: They are specific for serious illness. *Neth J Med.* 2016;74(10):443-8.

Quiz:



A 50-year-old man with a history of left knee replacement surgery one week prior, presents to the ED for acute-onset shortness of breath and pleuritic chest pain. He has not noticed any leg pain, swelling, or redness. No associated fevers or cough. He denies a personal or family history of venous thromboembolism. He has no history of malignancy and is up to date on age-appropriate cancer screening. Vital signs are notable for a heart rate of 92 and O2 saturation of 95% on 2L of supplemental oxygen. On exam, lungs are clear bilaterally. Chest radiograph and electrocardiogram are normal. A d-dimer is ordered and pending. Which of the following statements is correct regarding your next steps (assuming a normal creatinine)?

- a. If the d-dimer is >500 ng/mL, CTPA imaging should be obtained.
- b. CTPA imaging should only be ordered if the d-dimer is >1,000 ng/mL.
- c. A d-dimer result of 600 ng/mL would increase the probability of PE.
- d. The d-dimer should never have been checked because it has no diagnostic utility in patients with intermediate or high pre-test probability for PE.

Correct answer: A. This patient has an intermediate PTP for PE (20%) based on a Wells score of 4.5 and a Geneva score of 5, with the recent surgery being one of the main risk factors. A d-dimer in the 500 to 750 ng/mL range would lower the probability of PE, but not sufficiently to rule it out. The iLR (0.3) from Kohn, et.al.⁹ reduces 20% pre-test probability to 8% post-test probability, which is still high enough to warrant further evaluation. This eliminates choice B because CT-PE imaging would be indicated even for a d-dimer in the 500-1,000 ng/mL range. Setting a d-dimer cut-point >1,000 ng/mL (iLR of 1) would miss an unacceptably high proportion of PEs. Choice C is incorrect because the probability is lowered by a d-dimer of 600 ng/mL from 20% to 8%. Choice D is incorrect because sufficiently low d-dimers can exclude PE in patients with intermediate PTP and possibly even in patients with high PTP, though further research is needed in this population. This question highlights the importance of considering the pretest probability in conjunction with the iLR.



Gifting the Secrets and Lessons of the Profession

Recommendations from an avid reader

By Lauren Spaeth, DO

A dedicated nightly reader and med-peds-trained hospitalist, Richard Wardrop, MD, PhD, is the Cleveland Clinic Internal Medicine Program Director. He has a unique way of showing his appreciation to learners by gifting them books as a token of their “chapter” spent learning and teaching together. This tradition was shown to him by his mentor, Dr. Clay Marsh, who gifted him the book *Who Moved My Cheese?* when he was a medical student.



Dr. Wardrop

Inspired by this gesture, Dr. Wardrop began gifting classic medical titles to learners, such as the *Tarascon Internal Medicine & Critical Care Pocketbook* to a medical student named Noel Ivey, who is now a hospitalist at Duke. The books have taken different forms over the years, from gifting *Osler for White Coat Pockets* to first-year residents as a welcome to the profession, to gifting the classic

Quotable Osler to chief residents at graduation. An avid reader himself, Dr. Wardrop spends at least 30 minutes reading before bed. He often keeps what he affectionately calls a commonplace journal to record important points from a book or thoughts that he doesn't want to forget. While he often reads two to three books at a time, one of his favorite collections, Ernest Hemingway's short stories, is a constant companion and has found its way into his program's Narrative Medicine curriculum. For example, the classic short story “A Day's Wait” was recently used to teach his residents about the power of perspective and suffering in the eyes of the patient and the caregiver. When asked why he reads daily, Dr. Wardrop said “Reading is a tonic for my heart, my brain, and my soul. Reading and reflecting makes my thinking, writing, and interpersonal relationships better.” As a new group of medicine students enter the MATCH and resident/fellow graduation marks the end of an academic year Dr. Wardrop has shared some of his top favorites to gift.

Best Leadership

- *Only the Paranoid Survive* by Andrew S. Grove
- *The Leadership Challenge* by James M. Kouzes and Barry Z. Posner
- *Choosing Civility* by P.M. Forni
- *Multipliers* by Liz Wiseman

Best Diagnostic Reasoning

- *Sapira's Art & Science of Bedside Diagnosis* by Jane M. Orient
- *Evidence-Based Physical Diagnosis* by Steven McGee
- *Atlas of Pediatric Physical Diagnosis* by Basil J. Zitelli, Sara McIntire, and Andrew J. Nowalk
- *Symptom to Diagnosis* by Scott D.C. Stern, Adam S. Cifu, and Diane Altkorn

Life and Medicine

- *Aequanimitas* by William Osler
- *Being Mortal* by Atul Gawande
- *The Obstacle is the Way* by Ryan Holiday
- *Internal Medicine* by Terrence Holt

Although these are just a few titles in the sea of medical texts,



Dr. Spaeth

Dr. Spaeth is a PGY-1 hospitalist at OhioHealth Riverside Methodist Hospital in Columbus, Ohio, and a member of The Hospitalist's editorial board, and the SHM Physician in Training committee.

the Hippocratic oath upholds physicians sharing the art and craft of medicine. Consider the impact of a personalized gift to a learner and the lasting memory made through such a gesture. ■

Are You Asking the Right Questions in a Job Interview?

Increase your chance of getting hired

By Erica Grabscheid, MD, FACP, FHM, Anand Shukla, MD, and Jessica Sarmiento, MD

Every hospitalist program is unique because it is tailored to meet the specific needs of the hospital it serves. For instance, one employer may require hospitalists to rotate through a post-discharge clinic, while another may have them take care of ventilated or intensive care unit (ICU) patients. The next employer may expect hospitalists to work a certain number of night shifts per month. Therefore, when interviewing for a hospitalist position, it is crucial to ask the right questions to ensure you clearly understand the job requirements.

Most interviewees prepare for questions the potential employer may ask (such as “Tell me about yourself.”). However, to best understand the position and its offerings, there should be a detailed two-way conversation between you and your potential employer. Although a natural conversation flow would be ideal, it is essential to arrive at the interview with smart and appropriate questions that will benefit both you and the employer.

Here are potential questions to ask during the job-interview process broken down into categories:

Duties and responsibilities

1. What responsibilities do the physicians have? Describe all potential clinical and non-clinical roles.
2. What is the work schedule? What’s the expectation of how many days are worked per year? Is it shift work? If so, what are the hours? Who covers nights, weekends, and holidays (the call schedule)? Is a sick call available? Are there moonlighting opportunities?
3. What does an average workday look like?
4. Are hospitalists responsible for patients in an emergency department or ICU setting?
5. Are telemetry floors covered by hospitalists or specialists?
6. Are most patients admitted under a hospitalist, or are patients admitted under their respective service? For example, is a stroke patient admitted under medicine or to a neurology/stroke service?
7. Who performs bedside procedures? Is it mandatory to be certified in procedures? If so, which procedures would this include?



8. Are medical residents, physician assistants, and nurse practitioners available? Are they on every case? What are their roles?
9. Is there direct patient care?
10. Do the hospitalists cover services in addition to the medicine wards, such as comanagement or an observation unit?
11. Are there any administrative-role opportunities (quality improvement, informatics, C-suite, etc.)?
12. What is the average rate of admissions and follow-ups per day? What is the average census? Is there a cap on the number of patients a physician can see per day?
13. What ancillary services are available?

About the institution

1. Is the hospital considered a full-service hospital? For example, are interventional cardiology or advanced endoscopy services available? If resources are limited, are patients transferred to other centers?
2. Is the job located at one center, or does it involve affiliated centers?
3. How large is the current program? What are the rates of staff turnover and why?
4. What electronic health record system is used?
5. Describe the patient population. Is it diverse? Is it underserved? What are the principal diagnoses seen?
6. From where are the patients being referred (community primary care physicians, specialty clinics)?
7. Is there a mentorship program? What is the makeup of the staff in terms of years of experience?
8. Is the hospital affiliated with an academic institution? Are there medical students, and what is the hospitalist’s involvement in



Dr. Grabscheid



Dr. Shukla



Dr. Sarmiento

Dr. Grabscheid is a senior hospitalist at Mount Sinai Beth Israel and a professor of medicine at the Icahn School of Medicine at Mount Sinai in New York. Dr. Shukla is a hospitalist at Mount Sinai Beth Israel, an assistant professor of internal medicine at the Icahn School of Medicine at Mount Sinai, site director for the MS3 inpatient medicine clerkship, and co-director of the hospitalist elective for the Mount Sinai Beth Israel internal medicine residency program in New York. Dr. Sarmiento is a hospitalist at Mount Sinai Beth Israel, assistant professor of medicine at the Icahn School of Medicine at Mount Sinai, and co-director of the hospitalist elective for the Mount Sinai Beth Israel internal medicine residency program in New York.

- their education? What opportunities are there to get involved in academics, education, or research?
9. Who is the employer (e.g., the hospital itself, university or medical school, physician group, management company)?
10. Is the hospital a 501c3 organization? Are there opportunities for loan forgiveness?
11. What is the financial standing of the employing company or hospital? Are any changes to the company or hospital system expected in the next one to five years?

Compensation and benefits

1. What is the salary structure? Is it a straight salary? If there is an incentive component, how is that calculated? Are the bonuses achievable? Is there a cost-of-living adjustment?
2. Are any benefits provided, such as health insurance or a retirement plan?
3. Are there any avenues for advancement? For additional

roles taken on, is there a full-time equivalent reduction? If so, how does this affect clinical time and compensation?

4. Is a contract provided?
5. Who is responsible for malpractice, and what is the coverage?
6. Is there assistance with moving costs?

It is important to keep in mind that you may not receive all the answers during your first meeting with a potential employer. This is a process, and you should start with general inquiries, such as the call schedule. If the employer is seriously considering hiring you, there will be further opportunities for communication, such as follow-up interviews, phone calls, and emails. During these occasions, you will have multiple chances to ask more detailed questions about your potential salary, 401K benefits, and whether the malpractice insurance includes tail insurance. These questions can vary depending on the job position, but having a toolbox of questions can significantly increase your preparedness and success in a hospitalist interview. ■



SIG Spotlight: Physician Advisors

Offering support, networking, and mentorship

By Richard Quinn

Physician advisors are responsible for a lot. Their work exists at the intersection of clinical matters and revenue. Think clinical documentation, hospital quality measures, length-of-stay management, utilization review, and the check-box difference between observation and inpatient status.

So, of course, most of them are hospitalists, given the quarter-back-like role in clinical care the specialty plays.

"The majority of physician

advisors are hospitalists because we are natural experts in understanding hospital operations and managing patients in the hospital," said Aziz Ansari, DO, FAAHPM, FACP, SFHM, professor of medicine and associate chief medical officer of clinical optimization and revenue integrity at Loyola University Medical Center in Maywood, Ill.

"It's the natural next step for a hospitalist to take on additional roles if they choose to. Because there are so many hospitalists who are physician advisors, there was

a big need and a want to have an organized forum within the Society of Hospital Medicine, where physician advisors can congregate, learn, and support each other," Dr. Ansari said.

So was born the Physician Advisors Special Interest Group, which Dr. Ansari took over as chair in 2022.

"It is vital that there is a forum where the physician advisors can get together, learn from each other, and offer insights to continue to improve hospital operations and hospital financial and quality metrics," he said.

For Dr. Ansari, the SIG is a necessary community that gives physician advisors a place to share pearls, pitfalls, successes, and challenges.

"A lot of us think we're alone in this big fight with insurance companies, with keeping our lifeboats open and trying to maximize revenue integrity and quality metrics," he said. "You realize that the same challenges you're having are the same as others and you are not alone. That sense of community and camaraderie, sharing best practices, and sharing war stories are very helpful for your sanity. And we can learn together to improve and do what's best for our patients collectively."

Dr. Ansari says learning what other physician advisors have

done in their workflows gives SIG members the confidence to defend their positions to administrators in their respective institutions.

"One can go to their C-suite and say, 'We're not the only ones struggling here, and I've networked with X, Y, or Z health care system,' and saying, 'Hey, there is an idea that one of my colleagues had, and we can try this.'" Dr. Ansari said. "Or, if a C-suite member feels like they are the only ones with a certain problem, well, you have a whole network of colleagues who will tell you you're not alone."

Dr. Ansari says that a communal approach to improvement can be as high-level as a conversation with C-suites and as granular as what programs to use.

"It's a lot of sharing of ideas and what methods have been tried to improve metrics in various domains, and also learning from others what did not work, if people are willing to share," he said. "This can be very helpful, especially for those with less experience and just starting their career as a physician advisor."

The SIG also aims to be forward-looking to help physician advisors deal with the ever-changing health care landscape.

"For example, Medicare Advantage came out with a rule in January 2024 that says that Medicare Advantage must follow the

two-midnight rule," Dr. Ansari said. "So, we've been spending some time trying to figure out what that means, collectively, and in February, we're going to have a webinar on Medicare Advantage that will focus on what are the lessons learned in a panel discussion. This is an example of continuous learning, advocacy, building that sense of community."

The SIG hosts roughly four webinars a year, plus its annual meeting, SHM Converge. The webinars are always available to members to review later, as the topics aim to be more universal with evergreen content.

"That repository of webinars is accessible," he said. "These are topics that hopefully can stand the test of time."

Dr. Ansari is also clear that the SIG's job isn't to train physician advisors. A role like that is filled by the American College of Physician Advisors, as one example.

The SIG is there for support, networking, and mentorship.

"This is a great forum to find friends and colleagues who share your same interests and who can support each other," Dr. Ansari said. "You're not alone. This is a tough job. The answers may be right there in our community if we engage in dialogue." ■

Richard Quinn is a freelance writer in New Jersey.



Dr. Ansari



Chapter Spotlight: Maryland

Looking to engage the next generation

By Richard Quinn

If there's one struggle that all SHM chapters know well, it's engagement.

Evelyn Gathecha, MD, FACP, FHM, tackles the issue head-on as president of the Maryland outpost.

"Engagement is always a challenge," said

Dr. Gathecha, a hospitalist with Mid-Atlantic Permanente Medical Group in Rockville, Md. "So we've tried to look for different ways to engage our members, and also hospitalists in general, to become members."

It's working well, as the group was awarded platinum status after a busy slate of at least six events in 2022.

That level of activity is the key to success, says Dr. Gathecha.

"Maryland is a huge state," she said. "We have more than 50 hospital-medicine groups. And given the size of the state and the number of hospital-medicine groups, we cannot meet the needs of all of the hospitalists across the state. So, having the virtual platform, in addition to keeping an in-person



Dr. Gathecha

platform, has gone a long way."

While some chapters have abandoned virtual events after the worst of the COVID-19 pandemic, Dr. Gathecha sees a mix of remote and in-person events as another trick in the toolbox for—wait for it—engagement.

"We're able to meet the needs of those hospitalists who are not able to travel to come and meet us in Baltimore, or Howard County," she said. "At the same time, it's also keeping interest in meetings with those hospitalists who are local and can stay engaged in person with their fellow hospitalists. That's one way we have kept engagement, by being creative and maintaining both platforms so we can reach out to everybody."

Attendance isn't the only metric that matters, though. Engagement means holding lectures, discussions, or panels that speak to issues members care the most about.

Dr. Gathecha says the chapter has been more deliberate with the event content and topics, making sure to bring in high-level information. They ask members what topics they're interested in and what they want to learn more about, and then use that feedback to develop content and events as another way to stay relevant to chapter members.

Dr. Gathecha is also committed to growing the chapter, which was founded before 2012 and now has some 378 members. In 2023, the group added a membership director, which has pushed a 10% jump in the chapter's size.

"It is our members that drive our chapter," Dr. Gathecha said. "I feel that if you engage members and provide the content they find valuable, they're more likely to come back and to be repeat attendees or committed attendees. Half the time, maybe they're just not aware of all the available benefits. SHM is a huge organization with a lot of offerings. I think as chapter officers, we need to be intentional in sharing information about all the benefits SHM has to offer. I think that's why it's important to listen to members and make sure we're meeting them where they are."

Dr. Gathecha says that includes meeting the needs of academic and non-academic hospitalists, who can sometimes feel at odds.

"I had the opportunity of being an academic hospitalist for more than 10 years before transitioning to non-academic hospital medicine," she said. "This has allowed me to experience both academic and non-academic environments and personally interact with hospitalists in both settings. I bring these conversations and experi-

ences back to our chapter office meetings as we discuss ways to maintain and increase the engagement of all hospitalists."

But engagement work is never done, Dr. Gathecha and her board believe. She wants more residents and early-career hospitalists involved in the chapter, building the leadership board of the future.

"The engagement among resident physicians is not that high," she said. "My vision in terms of our chapter growth, is to tap into these young hospitalists and try to encourage them to join the chapter. I think it's a niche that we're still working on and trying to grow."

One approach is having a resident chapter-advisory member who can weigh in on "content that is of value to residents in training," Dr. Gathecha said.

"This year, we are awarding membership to resident members, and we are looking for them as being SHM resident ambassadors," she said. "Hopefully, as they go to their programs, they can share what SHM has to offer and hopefully get more residents to join the chapter. In addition, we're going to create a lecture series this year dedicated to the residents. That's another way we can show the value of SHM to residents." ■

Richard Quinn is a freelance writer in New Jersey.

VANDERBILT UNIVERSITY
MEDICAL CENTER

Director, Section of Hospital Medicine
Department of Medicine

Vanderbilt University Medical Center's (VUMC) Department of Medicine is seeking an outstanding leader to direct the Section of Hospital Medicine. The ideal candidate should be a qualified physician with a bold and innovative vision to further our threefold mission of delivering exceptional patient care, pioneering significant discoveries, and training future physician leaders in a diverse and inclusive setting.

The Section of Hospital Medicine, a dynamic academic section within the Division of General Internal Medicine and Public Health, boasts over 110 dedicated faculty and staff members. The majority of our clinical care is provided at Vanderbilt University Medical Center, but our team also extends care to four hospitals within a single geographic area.

Section faculty participate in a variety of clinical activities including teaching services at both the Veteran's Administration (VA) and VUMC, and various consultation, observation, procedural, admission, hospital at home, and care for complex medical patients. The Section has recently begun offering specialist hospitalist care for geriatrics and cardiology. Our faculty hold multiple teaching roles in both undergraduate and graduate medical education, and they have secured extramural research funding mainly from the VA and NIH.

As VUMC is currently undergoing significant growth, the candidate will be expected to provide leadership during this expansion phase. Vanderbilt University School of Medicine is ranked among the top ten Schools of Medicine, with the Department of Medicine being in the top five for NIH funding.

Located in the heart of Nashville, a booming city renowned for excellence in healthcare, finance, commerce, and entertainment, VUMC draws world-class trainees and faculty. Interested applicants should submit a CV and letter of interest to our Search Committee Chair, Harvey Murff, MD, Director of the Division of Geriatric Medicine at <http://apply.interfolio.com/136097>. VUMC is an equal opportunity/affirmative action employer.

Come join our team of Hospitalists!

(day and night, teaching and non-teaching opportunities)

Harvard Medical Faculty Physicians at
Beth Israel Deaconess Medical Center - Boston, MA

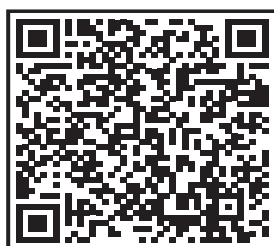
The Hospital Medicine team at Beth Israel Deaconess is seeking **Physicians** and **Advanced Practice Professionals (APPs)** for day and night, teaching and non-teaching opportunities at its Harvard-affiliated teaching hospital in Boston and at community hospitals in Milton, Needham and Plymouth. We are also seeking an **Associate Site Director** at our hospital in Plymouth. A medical school faculty appointment may also be possible. To learn more or apply, please contact Dr. Li and Dr. Phillips below.

Joseph Li, MD - Chief of Hospital Medicine
JLi2@bidmc.harvard.edu

and

Rusty Phillips, MD - Director of Recruitment
wphillip@bidmc.harvard.edu

Scan this **QR Code** to learn more about our group and our professional development opportunities.



We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, gender identity, sexual orientation, pregnancy and pregnancy-related conditions or any other characteristic protected by law.

Harvard Medical Faculty Physicians
at Beth Israel Deaconess Medical Center
and at our affiliates
Beth Israel Lahey Health



Optimize Your IM Inpatient Exam Performance

Start your exam preparation with Spark Edition 3. Crafted by hospitalists, this self-paced exam prep tool targets your strengths and weaknesses, offering new questions, comprehensive answers, and insightful explanations.

PURCHASE NOW



hospitalmedicine.org/spark

shm
Society of Hospital Medicine

shm. CONVERGE

• SAN DIEGO, CALIFORNIA •
APRIL 12-15, 2024

COUNTDOWN TO CONVERGE: The Ultimate Conference in Hospital Medicine



Experience top-notch education, networking, and thought leadership with other hospitalists from around the world! Arrive a day early to attend one of three advanced learning courses to earn additional CME:

- Point-of-Care Ultrasound for the Hospitalist
- Beyond the Bedside: Transforming Hospitalist Careers
- Perioperative Essentials for the Hospitalist



We also invite you to attend the Academic Leadership Summit to learn, exchange ideas, network, and innovate solutions to the top challenges in our field.

Mark your calendar and register at:
shmconverge.org

