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SHM Past President Dr. Nasim Afsar converses with HM19 plenary speaker Dr. Marc Harrison of Intermountain Healthcare.

Lou Ferraro, Park South Photography

‘Update in Hospital Medicine’ offered practice pearls at HM19

Studies that question common practices

By Jeff Craven

On the big stage at HM19 in late March, Carrie Herzke, MD, FAAP, FACP, SFHM, and Christopher Moriates, MD, FACP, SFHM, undertook the daunting task of summarizing a year’s worth of research relevant to the practice of hospital medicine – all within the span of an hour.

As has been standard with the “Update in Hospital Medicine” session at previous SHM Annual Conferences, the presenters touched on lighter topics in the medical literature: a prospective cohort study that found drinking coffee was inversely associated with mortality, even for those who drink up to eight cups a day; a cross-sectional observational study in which patients noted that what a physician wears is an important consideration for them during care, with a white coat preferred over formal attire as the most highly rated preference in a clinical care setting; and a study from a pediatric journal in which researchers calculated the average transit time for a Lego figurine head ingested by an adult.

But Dr. Herzke and Dr. Moriates mainly covered more serious subjects. In an interview before the session, Dr. Herzke, associate vice chair for clinical affairs in the department of medicine at Johns Hopkins Medicine in Baltimore, said she and Dr. Moriates chose studies across the fields of infectious diseases, cardiology, and hematology

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Hospitalist Movers and Shakers

By Matt Pesyna

Christina L. Andrew, DO, a medical director on the hospitalist team at McLeod Regional Medical Center in Florence, S.C., and **Zeshan Anwar, MD,** medical director of Evangelical Community Hospital's hospitalist group in Lewisburg, Pa., were named Senior Fellows in Hospital Medicine (SFHM) by the Society of Hospital Medicine. SFHMs are dedicated to promoting excellence and improving the quality of patient care.

Dr. Andrew has been with McLeod since 2008. The board-certified internist received her medical degree from Des Moines (Iowa) University Osteopathic Medical Center and did her residency at the Cleveland Clinic. To earn SFHM status, physicians must have worked as a hospitalist for at least 5 years and be a member of SHM for 5 years.

Dr. Anwar has been in his current position since 2015. He coordinates staff resources and inpatient care for the facility where he has worked since 2013. He has his medical degree from King Edward Medical University, Lahore, Pakistan, and did his residency at Bronx-Lebanon Hospital Center in New York.

Tiffany Egbe, MD, has been named to the board of directors of Refuge International, which builds relationships in Guatemala that allow for medical services to be provided to an underserved population.

Dr. Egbe

Dr. Egbe is a hospitalist in internal medicine at Christus Good Shepherd in Longview and Marshall, Tex. She serves as program director of internal medicine residency for the University of Texas Health Science Center in Tyler, Tex. Dr. Egbe earned her medical degree from the University of Alabama at Birmingham.

Il Jun Chon, MD, has been named vice president of medical affairs with WellSpan Ephrata (Pa.) Community Hospital. Dr. Chon, a hospitalist, had previously been the medical director of WellSpan Ephrata's hospitalist services and president of the facility's medical staff. Dr. Chon earned his medical degree from the Medical College of Pennsylvania (now Drexel College of Medicine) and completed his residency at Thomas Jefferson University Hospital, both in Philadelphia.

Megan Hamreus, DO, was named chief of staff at Scripps Mercy Hospital in San Diego, Calif. Dr. Hamreus will oversee 1,000 doctors at two facilities.

Dr. Hamreus

Dr. Hamreus has been with Scripps Mercy for 10 years, serving as a hospitalist and a faculty member of the family medicine residence training program of Family Health Centers of San Diego. Chief of staff is a 2-year elected term.

Jade Brice Roshell, MD, was named chief medical officer at Shelby Baptist Medical Center in Alabaster, Ala. Dr. Brice Roshell was promoted from director of the center's hospitalist program.

Dr. Brice Roshell

Dr. Brice Roshell was named as one of 68 honorees on Becker's 2019 list of African American Leaders in Health.

Dr. Brice Roshell has been with Shelby Baptist since 2015. Her medical degree is from Howard University, Washington, and she completed her residency at Tulane University, New Orleans.

Anju Manral, MD, recently was appointed as medical director for the University of New Mexico Student Health and Counseling Center in Albuquerque. The internist has experience as a hospitalist focused on palliative care and has worked at UNM's Family Health Clinic. Dr. Manral also serves as an assistant professor in the UNM General Internal Medicine Department.

The Hiawatha (Kan.) Community Hospital has unveiled its new hospitalist program, which will be led by Dustin Williams, DNP. He will provide hospitalist and emergency medical services to patients every Tuesday through Friday; an on-call specialist will serve as hospitalist on Saturday, Sunday, and Monday.

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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. Content for THE HOSPITALIST is provided by Frontline Medical Communications. Content for the Society Pages is provided by the Society of Hospital Medicine.

Letters to the Editor: rpizzi@mdedge.com

The Society of Hospital Medicine's headquarters is located at 1500 Spring Garden, Suite 501, Philadelphia, PA 19130.

Editorial Offices: 2275 Research Blvd, Suite 400, Rockville, MD 20850, 240-221-2400, fax 240-221-2548

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Top 10 tips community hospitalists need to know for implementing a QI project

Consider low-cost, high-impact projects

By Gopi Astik, MD; Audrey Corbett, MD; Hemali Patel, MD; and Theresa Ronan, MD

Quality improvement (QI) is essential to the advancement of medicine. QI differs from research as it focuses on already proven knowledge and aims to make quick, sustainable change in local health care systems. Community hospitals may not have organized quality improvement initiatives and often rely on individual hospitalists to be their champions.

Although there are resources for quality improvement projects, initiating a project can seem daunting to a hospitalist. Our aim is to equip the community hospitalist with basic skills to initiate their own successful project. We present our "Top 10" tips to review.

1. Start small: Many quality improvement ideas include grandiose changes that require a large buy-in or worse, more money. When starting a QI project, consider low-cost, high-impact projects. Focus on ideas that require only one or two improvement cycles to implement. Understand your hospital culture, flow, and processes, and then pick a project that is reasonable.

Projects can be as simple as decreasing the number of daily labs ordered by your hospitalist group. Projects that are small could still improve patient satisfaction and decrease costs. Listen to your colleagues. If they are discussing an issue, turn this into an idea! As you learn the culture of your hospital you will be able to tackle larger projects.

2. Establish buy-in: Properly identifying and engaging key players is paramount to a successful QI project. First, start with your hospital administration, and garner their support by aligning your project with the goals and objectives that the administration leaders have identified as important for your institution. Next, select a motivated multidisciplinary team. When choosing your team, be sure to include a representative from the various stakeholders, that is, the individuals who have a variety of hospital roles likely to be affected by the outcome of the project. Stakeholders ensure the success of the project because they have a fundamental understanding of how the project will influence workflow, can predict issues before they arise, and often become empowered to make changes that directly influence their work.

Lastly, include at least one well-respected and highly influential member on your team. Change is always hard, and this person's support and endorsement of the project, can often move mountains when challenges arise.

3. Know the data collector: It is important to understand what data can be collected because, without data, you cannot measure your success. Arrange a meeting and develop a partnership with the data collector. Obtain a general understanding of how and what specific data is collected. Be sure the data collector has a clear understanding of the project design and the specific details of the project. Include the overall project mission, specific aims of the project, the time frame in which data should be collected, and specific inclusion and exclusion criteria.

Often, data collectors prefer to collect extra data points up front, even if you end up not using some of them, rather than having to find missing data after the fact. Communication is key, so be available for questions and open to the suggestions of the data collector.

4. Don't reinvent the wheel: Prior to starting any QI projects, evaluate available resources for project ideas and implementation. The Society of Hospital Medicine and the American College of Physicians outline multiple projects on their websites. Contact colleagues at other institutions and obtain their input as they are likely struggling with similar issues and/or have worked on similar project ideas. Use these resources as scaffolding and edit them to fit your institution's processes and culture, and use their metrics as your measures of success.

5. Remove waste: When determining QI projects, consider focusing on health care waste. Many current processes at our institutions have redundancies that add unhealthy time, effort, and inefficiency to our days that can not only impede patient care but also can lead to burnout. When outlining a project idea, consider mapping the process in your interested area to identify those redundancies and inefficiencies. Consider focusing on these instead of building an entirely new process. Improving inefficiencies also can help with provider buy-in with process changes, especially if this helps in improving their everyday frustrations.

6. Express your values: Create a sense of urgency around the problem you are trying to solve. Educate your colleagues to understand the depth of the QI initiative and its impact on their ability to care for patients and patient safety.

Sharing your passion about your project allows people to understand your vested interest in improving the system. This will inspire team members to lead the way to change and encourage colleagues to adopt the recommended changes.

7. Recognize and reward your team: Identify people who are part of your team and ensure they feel valued. Recognition and acknowledgment will allow people to feel more involved and to gain their buy-in. When it comes to results or progress, consider your group's dynamics. If they are competitive, consider posting progress results on a publicly displayed run chart. If your group is less likely to be motivated by competition, hold individual meetings to help show progress. This is a crucial dynamic to understand, because creating a competitive environment may alienate some members of your group. Remember, the final result is not to blame those lagging behind but to encourage everyone to find the best pathway to success.

8. Be okay with failure: Celebrate your failures because failure is a chance to learn. Every failure is an educational opportunity to understand what not to do, or a chance to gain insight into a process that did not work.

Be a divergent thinker. Start considering problems as part of the path to solution, rather than a barrier in the way. Be open to change and learn from your mistakes. Don't just be okay with your failures, own them. This will lead to trust with your team members and show your commitment.

9. Finish: Even if you anticipate that the project will fail, you should see the project through to its completion. This proves both you and the process of QI are valid and worthwhile; you have to see results and share them with others.

Completing your project also shows your colleagues that you are resilient, committed, and dedicated. Completing a QI project, even with disappointing results, is a success in and of itself. In the end, it is most important to remember to show progress, not perfection.

10. Create sustainability: When your QI project is finished, you need to decide if the changes are sustainable. Some projects show small change and do not need permanent implementation, rather reminders over time. Other projects may be sustainable with EHR or organizational changes. Once you have successful results, your goal should be to find a way to ensure that the process stays in place over time. This is where all your hard work establishing buy-in comes in handy.

These tips are a hospitalist's starting point to begin making changes at their own community hospital. Your motivation and effort in making quality change will not go unnoticed.

Good luck!


Dr. Astik


Dr. Corbett


Dr. Patel

Dr. Astik is a hospitalist and instructor of medicine at Northwestern Memorial Hospital, Chicago. Dr. Corbett is a hospitalist and assistant professor at the University of Oklahoma, Tulsa. Dr. Patel is a hospitalist and assistant professor at the University of Colorado at Denver, Aurora. Dr. Ronan (not pictured) is a hospitalist and associate professor at Christus St. Vincent Regional Medical Center, Santa Fe, NM.

HM19: Pediatric medical and surgical co-management

Anticipatory and prevention-heavy approach

By Mirna Giordano, MD

Presenter
Erin Shaughnessy, MD, MSHCM

Session title
Reaching Across the Aisle: Pediatric Co-Management with Surgery and Subspecialists

Session summary
Dr. Shaughnessy articulated a balanced approach to the importance of careful selection of patients needing to be co-managed by pediatric hospitalists. She compared two personal and very different experiences.

She initially managed a well-developed surgical co-management service at a quaternary, academic, free-standing children's hospital, in which surgeons and subspecialists also admitted and managed patients to their own services. Currently, Dr. Shaughnessy is a division chief at Phoenix Children's Hospital, a free-standing children's hospital with a community hospital background, in which hospitalists admit most, if not all the patients, while subspecialty services have been transitioning only recently to having their own admitting services and employing the ideas of limited co-management.


Dr. Giordano

She reminded the HM19 audience of the essential principles of co-management: shared responsibility; authority and accountability for the care of a hospitalized patient; and discussing the scenarios, both from literature and real life, in which the line could become blurry at times.

Many pediatric programs are moving away from a traditional consultation model, Dr. Shaughnessy said, in which a consult is called for a new or a persistent problem with a patient, and where a consulting team signs off upon the resolved issue.

The more modern co-management model infuses a need for anticipatory and prevention-heavy approach, intertwined with fiscally responsible ideas that must be palatable for all: administration, hospitalists, and patients.

Dr. Shaughnessy reviewed a number of articles from both adult and pediatric literature with varied results, some that have shown decreased length of stay, decreased number of medical complications, decreased readmissions, decreased number of tests, but some that have also shown an increase in median hospital costs, emphasizing perhaps the importance of context in which one practices.

Finally, she identified patient selection, collaborative relationships, clear roles delineation, and excellence in communication as four main factors deciding the faith of a co-management model.

Key takeaways for HM

1. Careful selection of patients to be co-managed is essential and can prevent potential increase in costs and negative outcomes.
2. Success in medical and surgical co-management relies on well-delineated roles, collaborative culture, and immaculate communication.

Dr. Giordano is a pediatric neurosurgery hospitalist and assistant professor in pediatrics at Columbia University Irving Medical Center in New York.

Practice pearls

Continued from page 1

that should make hospitalists question common practices and consider changing how they practice medicine at their home institution.

Dr. Moriates, assistant dean for health care value at the University of Texas at Austin, said in an interview that their topic choices reflected the breadth and diversity of patients taken care of by hospitalists.

For example, he noted during the HM19 session that results from several studies suggest hospitalists may soon choose oral antibiotics over IV antibiotics for care of certain patient populations: the recent POET trial suggests use of oral antibiotics for patients with left-sided infective endocarditis resulted in a lower length of stay in hospital (19 inpatient days) when compared with use of IV antibiotics (3 inpatient days and 17 additional treatment days post discharge), while the OVIVA trial found a lower but noninferior treatment failure rate among patients who received oral antibiotics for bone and joint infection, compared with IV antibiotics. Although these were both well-done studies, Dr. Moriates and Dr. Herzke emphasized that the results challenge widely accepted standards of care, and it may not yet be time for a paradigm shift.


Dr. Herzke

Direct oral anticoagulants (DOACs) also are being studied in patients with end-stage renal disease (ESRD) and cancer, Dr. Herzke said, and apixaban (Eliquis) 5 mg appears to be the preferred dose for a lower risk of stroke and mortality in patients with ESRD and atrial fibrillation. The speakers said there are further studies being developed for management of AF in patients with heart failure and DOACs for patients with ESRD.


Dr. Moriates

Another retrospective cohort study from research in the Massachusetts Public Health Dataset found that buprenorphine may have a number needed to treat of 50 for opioid use disorder, which Dr. Moriates said is close in proximity for the number needed to treat for aspirin. "It seems like it's time for this to become standard of care," he said.

The speakers also highlighted common practices hospitalists should stop performing based on the latest evidence.

In one example, they revealed that there is conflicting research on angiotensin-converting enzyme (ACE) inhibitors. One study found transient preoperative interruption of ACE inhibitors was associated with a reduction in intraoperative hypotension during a noncardiac, nonvascular surgery. A second study linked ACE inhibitor use with a reduction in all-cause mortality. However, long-term use of ACE inhibitors also appears to be associated with a 14% increase in lung cancers, with an increased incidence based on longer use duration.


Lou Ferraro, Park South Photography

Hospitalists should also be aware of recommendations from a study on oxygen therapy, Dr. Herzke noted, which found that extra oxygen therapy may harm patients with MI or stroke; as a result, hospitalists should "wean oxygen as tolerated" in these patients. In addition, hospitalists also may want to consider using oral vancomycin (Vancocin) or fidaxomicin (Dificid) for treatment of *Clostridium difficile* infections, based on new evidence that found there is a higher cure rate for those treatments, compared with metronidazole.

Dr. Moriates and Dr. Herzke had no relevant financial conflicts.

Telehospitalist, workload projects win RIV competition

Identifying, resolving clear problems

By Thomas R. Collins

NATIONAL HARBOR, MD / A program using "telehospitalists" to hasten and improve patient care won the top prize in the Innovations category of the RIV competition at the SHM 2019 Annual Conference in March. In the Research category, a study on workload to improve overnight cross-coverage care took the top prize.

Jeetinder Kaur Gujral, MD, a family medicine and palliative care physician at Northwell Health in Bay Shore, N.Y., said that the telehospitalist program at her institution uses a telehealth hub that is on call to consult with patients when the on-site hospitalist is unable to evaluate a patient in the emergency department within 30 minutes. Dr. Gujral's winning study examined results at one of Northwell's tertiary centers from January to October of 2018, where a telehospitalist works from 12 p.m. to 10 p.m.

Researchers found there was no significant difference in the severity of illness between the patients seen by the on-site hospitalist and the telehospitalist – if anything, the patients consulted by the telehospitalist were a bit sicker, Dr. Gujral said. But there was significantly less variation in the time it took for a telehospitalist to consult with a patient than the on-site physician.

"We are more predictable, because it's a press of a button, and we are there," Dr. Gujral said. "I don't have to leave to go down to the ED to see the patient."

Kelly Sponsler, MD, assistant professor at Vanderbilt University Medical Center in Nashville, who led the Innovations judging at HM19, said the project seems to be a new idea: taking a concept built to cover long distances at rural centers and using it within a center's own program to improve care.

"There was a clear problem that the team had identified," Dr. Sponsler said. "It's very common that, in mid- to late afternoon or early evening hours, the ED admits a bolus of patients all at the same time, and so commonly you have only one or two people available to do admissions... So this was a creative solution to off-load some of the workload from that primary admitted, but also to really reduce the time interval between when the ED requests the admission and the patient is actually seen."


Dr. Finn

In the cross-coverage study that won in the Research category, an index developed by NASA to quantify perceived workload was used to assess factors that boost workload during night shifts, said Ruth Bates, MD, an assistant professor at Mayo Clinic in Rochester, Minn.

It wasn't the number of patients that boosts workload during these hours, but the number of pages, action items, and rapid-response team and intensive-care unit activations. The number of unnecessary pages that overnight hospitalists receive is the prime target to reduce the workload. The idea is to reduce "low-value communication," Dr. Bates said, for example, a page about a lab value that is a "tiny bit off."

"The morning team is going to be coming around in 2 hours, so it's much better for someone that knows the patient, that is following their plan of care, to have those questions answered at rounds," she said. "That's just one example of really low-value communication that has interrupted somebody's work flow and is not really increasing the quality of patient care."

Trainee winners were Cameron Locke, MD, a resident physician at the University of California, San Francisco, for a study on a multidisciplinary approach to cut endoscopy delays, which won in the Innovations category. That study was presented by Molly Kantor, MD, assistant clinical professor at University of California, San Francisco.

The Research category trainee winner was Monisha Bhatia, MD, JD, MPH, of Jackson Memorial Hospital in Miami for her work on using phenotypic data from electronic health records to predict discharge destination.

Erin Frost, MD, a resident in internal medicine and pediatrics at Duke University, Durham, N.C., won the top prize in the Clinical Vignettes category, for her presentation of a case of a woman with acute digital ischemia after an injection of sublingual buprenorphine and naloxone.

The trainee winner in Clinical Vignettes was a case of *C. difficile* infection of a total hip arthroplasty, presented by Benjamin Claxton, MPH, a medical student at Penn State University, Hershey. The category's pediatrics winner was Erin Finn, MD, a resident at the University of North Carolina, Chapel Hill, for her presentation of a case of myocarditis in a 14-year-old.

Tweet this! Social media as career development

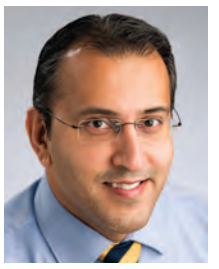
Extend your networking circle

By Jeff Craven

NATIONAL HARBOR, MD / Social media can be more than a tool to connect with friends and family, said Vineet Chopra, MD, MBBS, FHM, Charlie Wray, DO, and Vineet Arora, MD, MAPP, MHM, at an HM19 session entitled "Tweet Your Way to the Top? Social Media as a Career Development Tool in Hospital Medicine."

Online outreach can play crucial roles in everything from continuing education and research to networking and career advancement, but most of the conversations in medicine are really focused in the Twittersphere, the three hospitalists said.

"Social media has allowed me to connect with leaders in hospital medicine and many other medical communities," said Dr. Wray, an assistant professor of medicine at the University of California, San Francisco. "It has allowed me to share my work and success with the hospitalist community in addition to highlighting my trainees' and colleagues' success. My engagement has created opportunities to get involved with projects that I never could have previously imagined. And it has extended my networking circle and made annual gatherings like the SHM Annual Conference even more beneficial and high-yield for my career."


Dr. Chopra


Dr. Wray


Dr. Arora

For session copresenter Dr. Chopra, associate professor and chief of the division of hospital medicine at the University of Michigan, Ann Arbor, social media "helps develop your brand and your identity. It is a wonderful way for people to know what you do, who you are, what you stand for, and your views and opinions on various topics."

Social media "can connect you to leaders in the community so that they know who you are and what you are accomplishing. So when time comes for you to move on, people within this community will know who you are and what you're known for at a national level," said Dr. Wray, who is deputy digital media editor for the *Journal of Hospital Medicine*.

Sharing on social media for the medical profession is mainly focused on dissemination of information, engaging in communities and networking beyond your institution. The three presenters shared tips of the trade during the session, such as how to boost exposure to a tweet by including hashtags, posting photos, and sharing links. To overcome time commitment barriers, tie your Twitter contributions to something you are already doing, said Dr. Arora, as-

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Best of RIV highlights practical, innovative projects

Delirium, alcohol detox, and med rec

By Thomas R. Collins

NATIONAL HARBOR, MD / A project to improve how hospitalists address inpatient delirium, which has led to reductions in length of stay and cost, took center stage in the Best of RIV plenary session at HM19 in March.

The project, conducted at the University of California, San Francisco (UCSF), was presented alongside projects on alcohol detox at the Cleveland Veterans Affairs Medical Center and on medication reconciliation at Brigham and Women's Hospital in Boston.

"The plenary is the top three of the 1,000 that are out there – so, impressive work," said Benji Mathews, MD, SFHM, the chair of the Research, Innovations and Vignettes competition.

At UCSF, the project was meant to tackle the huge problem of delirium in the hospital, said Catherine Lau, MD, SFHM, associate professor of medicine there. Each year delirium affects more than 7 million people who are hospitalized, and hospital-acquired delirium is linked with prolonged stays and more emergency department visits and hospital readmissions. But research has found that as many as a third of these hospital-acquired cases can be prevented, Dr. Lau said.


Dr. Mathews

New admissions and transfers – a total of more than 2,800 patients – were assessed for delirium risk, and those deemed high risk were entered into a delirium care plan, aimed at prevention with nonpharmacologic steps such as maximizing their mobility and helping them sleep at night.

All patients also were screened on every nursing shift for delirium, and those diagnosed with the disorder were placed in the delirium care plan, with notification of the patient's team for treatment.

The average length of stay decreased by 0.8 days (*P* less than .001), with a decrease of 1.9 days in patients with delirium, compared with outcomes for nearly 2,600 patients before the intervention was implemented, Dr. Lau said. Researchers also found a decrease in $850 spent per patient (*P* less than .001), with a direct savings to the hospital of a total of $997,000, she said. The 30-day readmission rate also fell significantly, from 18.9% to 15.9% (*P* = .03).


Dr. Schnipper

The screening itself seemed to be the most important factor in the project, Dr. Lau said.

"Just the recognition that their patient was at risk for delirium or actually had delirium really raised awareness," she said.

The project on alcohol detox used careful risk assessments at emergency department discharge, e-consults, protocols to limit benzodiazepine prescribing, and telephone follow-up to reduce hospital admissions and 30-day readmissions, as well as length of stay.

Researchers used scores on CIWA – a 10-question measurement of the severity of someone's alcohol withdrawal – and history of complicated alcohol-use withdrawal to determine whether ED patients should be admitted to the floor or sent home with or without prescriptions for gabapentin and lorazepam, said Robert Patrick, MD, a hospitalist at the Cleveland VA.

Perhaps the most innovative feature of the program was using systolic blood pressure and heart rate in addition to CIWA to determine whether someone should receive a benzodiazepine, he said. Someone with a CIWA of 9-12, for instance, would be prescribed one of these drugs only if their vitals were elevated, Dr. Patrick said.

He encouraged other hospitalists to try a similar program at their centers.

"You don't have to be at a VA to do this," he said. "And most importantly, you don't have to have a cooperative ED to do this. You can do this just within your hospitalist group."

In another presentation, Jeffrey Schnipper MD, MPH, FHM, associate professor of medicine at Harvard Medical School, Boston, described the results from a project in which SHM's MARQUIS program – an evidence-based "toolkit" on medication reconciliation – was implemented at 18 hospitals. The kit offers a plan to get the best possible medication history, give medication counseling on discharge, and identify patients at risk for medication discrepancies. The 18 sites were coached, with areas of improvement identified.

By months 13-18 of the study period, the number of medication discrepancies had fallen to 0.93 per patient for those who'd received at least one form of intervention, compared with 2.69 per patient among those who'd received none.

"The MARQUIS interventions, including the toolkit and mentored implementation," Dr. Schnipper said, "are associated with a marked reduction in medication discrepancies."

Continued from previous page

sociate chief medical officer–clinical learning environment at the University of Chicago School of Medicine.

A presence on social media isn't just a tool to boost your own profile; it also helps you stay on top of medical news. "A properly curated social media feed can help a busy clinician stay on top of what is really important," Dr. Wray said."

But be careful how much you disclose on social media about yourself and, especially, other people. "A good rule of thumb is: Don't put anything online that you wouldn't want your mother to read," Dr. Chopra said. "As well, sharing any personal or patient information without understanding your institution's guidelines or obtaining explicit permission is a general no-no. Dr. Wray added: "If you're an educator, it's important that you make sure your tweets don't say anything disparaging about your trainees. And while every person's Twitter feed is up to them, I typically try to stay away from politics and religion and keep my conversation as professional as possible."

Randy Dotinga contributed to this report.

HM20 to emphasize diversity in course offerings

More expansive CME offerings also on deck

By Randy Dotinga

Hospitalist Benji K. Mathews, MD, SFHM, CLHM, will bring a unique commitment to medical education to the 2020 Society of Hospital Medicine Annual Conference, which will be held next year in San Diego April 16-18. Indeed, Dr. Mathews enjoys receiving the occasional item of medical technology at his home. Just ask his elementary-school-age children: They've learned how to use handheld ultrasound devices on each other.

"They're able to find their siblings' kidneys and hearts," said Dr. Mathews, an assistant professor of medicine at the University of Minnesota, Minneapolis, and a hospitalist with HealthPartners in Saint Paul, Minn. "I often show an image of this to encourage hospitalists that, if children can pick it up, highly educated providers can do the same and more!"

Dr. Mathews is the course director for HM20, and in an interview with *The Hospitalist*, he said he expects HM20 will build upon the successes of this year's conference and support SHM's commitment to diversity in voices and programming. More than 4,000 attendees are expected.

"The HM20 conference is a team effort with a diverse group serving on the annual meeting planning committee," he said. "In conjunction with the submissions we receive from the open call, the Annual Conference Committee really builds on the momentum and feedback from attendees from the previous year's annual meeting. We will identify popular sessions and topics and also review the data we receive from attendees about how they rated sessions and speakers. The chair and committee members will review all of these metrics and use them to plan HM20."

Dr. Mathews said several topics will get special emphasis in 2020. "We would like to have more content for nurse practitioners and physician assistants and continued representation from the broad range of hospitalists throughout the nation in academic and community settings," he said.

"We're also hoping to provide more credit offerings in addition to those we now offer via the American Academy of Family Physicians and the American Osteopathic Association. Next year, we're hoping to offer pharmacology credit."

In addition, he said, "we hope to have focused content on diversity issues such as women in hospital medicine and gender and racial bias. We also plan to provide a continued focus on integration of work and life, and topics in technology such as bedside ultrasound and telemedicine."

Technology will be more than a topic at HM20. SHM plans to embrace it in the conference itself to a greater extent than ever before. "We hope to build an online interactive schedule so that attendees may search tracks by day and credit type and schedule their sessions ahead of time," Dr. Mathews said. "There will still be a PDF schedule, but we hope to push a more interactive, paperless version. We also hope to have e-posters for the first time at HM20."

The emphasis on technology is a perfect fit for Dr. Mathews, who's a pioneer in the use of bedside ultrasound.

"I was fortunate to be a part of a great residency program at the University of Minnesota Medical School, which started a hospital medicine pathway that had several nationally recognized hospital medicine leaders as mentors," he said. "I was lucky to work with several of them through the HealthPartners organization in Saint Paul, and that developed in me a further desire to practice hospital medicine. The group and mentors provided opportunities to develop further niches in my practice. I took interest in the field of improving diagnosis and combined it with the 21st-century innovative tool of bedside ultrasound. Now, I continue to teach clinicians, educators, and learners."

Dr. Mathews has no relevant disclosures.

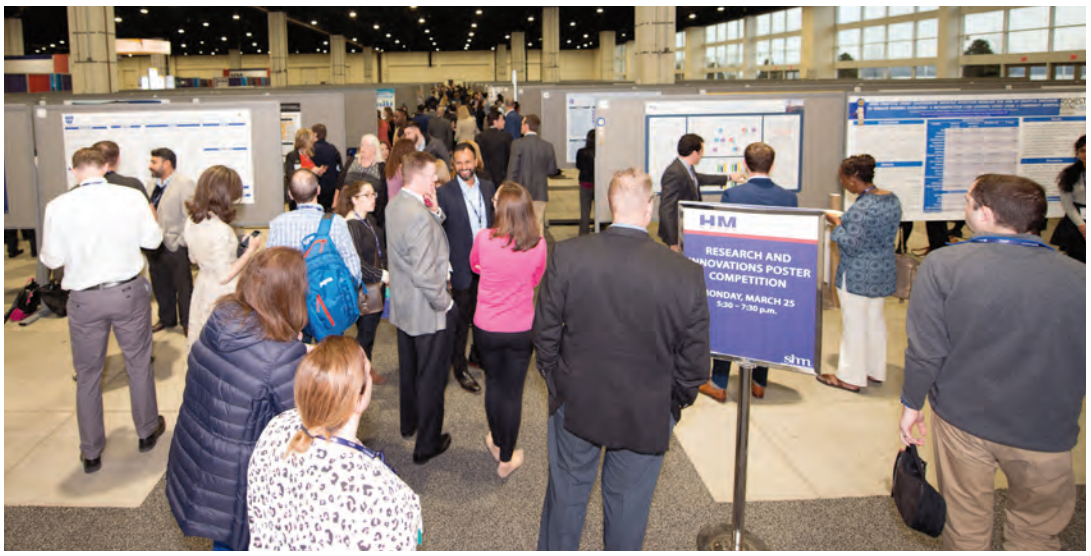
Scenes from HM19

SHM past president Dr. Nasim Afsar acknowledged Dr. Samir Shah (left) and Dr. Brian Harte (right) as the latest Masters in Hospital Medicine.

Hospitalists visited Capitol Hill to meet with Congressional representatives and staff on SHM's "Hill Day" at HM19.

HM19 gave hospitalists from around the world an opportunity to reunite with friends and colleagues.

The pre-courses held on the Sunday prior to HM19 offered practical, clinical education.



Among the more popular HM19 events was the RIV poster competition.

SHM CEO Dr. Larry Wellikson shared a laugh with SHM past president Dr. Ron Greeno during the opening plenary session.

Photos Lou Ferraro, Park South Photography

HM19's Research Shark Tank a resounding success

Raising the visibility of research

By Mark Lesney, PhD
MDedge News

NATIONAL HARBOR, MD / A few lucky hospitalists had the chance to compete for dedicated consultation time from experienced hospital medicine mentors during the SHM Annual Conference's first Research Shark Tank.

Lou Ferraro, Park South Photography

From left: Dr. Hardeep Singh, Dr. Luci Leykum, and Dr. Andrew Auerbach

During the session, four hospitalists each presented a 5-minute "pitch" of a research, quality improvement, or medical education project to three senior quality and research leaders in hospital medicine serving as the "sharks." These pitches were followed by 7 minutes of moderated questions and feedback from the sharks and the audience. Sharks then "bid" on the projects, offering up to 2 hours of one-on-one consultation during the conference or as needed.

The four projects included a study of the use of off-site scribes listening in to patient/hospitalist interactions to eliminate the need for the doctor to be glued to the computer screen, which was presented by Thea Dalfino, MD, chief of hospital medicine at Albany (N.Y.) Memorial Hospital; a rethinking of medical education to emphasize the role of hospitalists as mentors to individual student "apprentices," presented by Amulya Nagarur, MD, of the department of medicine at Massachusetts General Hospital, Boston, and Christiana Renner, MD, of University of Texas Southwestern Medical Center, Dallas; and a redesign of patient hospital gowns to optimize, comfort, morale, and functionality, presented by Cheryl Dellasega, PhD, professor of medicine and humanities at Penn State University, Hershey.

The winning project was presented by Meera Udayakumar, MD, medical director at the University of North Carolina REX Healthcare in Raleigh. She discussed "The Equalizer," a computerized tool to optimize patient distribution among hospitalists in order to balance workflow in a practice.

In discussing the thinking behind this unique session, Luci Leykum, MD, SFHM, chief of the division of general and hospital medicine at the University of Texas, San Antonio, who served as one of the sharks, stated that: "We've always tried to do things to promote the pipeline of research in hospital medicine and to raise the visibility of research activities at the annual conference. In the past, we have done one-on-one 'speed dating' with mentors, but the research committee thought this format would be more interactive and that audience members could benefit from hearing the discussion."

The other participating sharks were Andrew Auerbach, MD, MPH, MHM, professor of medicine at the University of California, San Francisco, and former editor of the *Journal of Hospital Medicine*, and Hardeep Singh, MD, MPH, chief of the health policy, quality, and informatics program at the Center for Innovations in Quality, Effectiveness, and Safety at the Michael E. DeBakey Veterans Affairs Medical Center in Houston.

Dr. Leykum said she was looking to see whether the pitched projects have clearly articulated questions that are important and interesting and whether the proposed methods would sufficiently answer those questions. She also considered what the implications were if the work was done.

Audience members had a chance to ask questions and, if they were interested, to potentially partner with presenters or adopt similar ideas at their own institutions. Attendees were exposed to innovative ways of solving problems that are common in hospital medicine.

Adapting to change key to hospitalists' future

Outgoing, new presidents discuss vision

By Thomas R. Collins

NATIONAL HARBOR, MD / Outgoing Society of Hospital Medicine president Nasim Afsar, MD, SFHM, told a packed ballroom of hospitalists at HM19 in March that it's not change to the health care industry that is most central to their future, but how they assume a role within it and how they spark it themselves.

With a tone that was, at times, almost ebullient about change, Dr. Afsar characterized the flux of health care as a series of opportunities to improve patient care.

"Run towards change," said Dr. Afsar, chief ambulatory officer and chief medical officer for accountable care organizations at University of California, Irvine. "And be a force of positive change."

Dr. Afsar described four major themes of change to the health care landscape that will affect how hospitalists do their jobs.

- **A new setting of care.** "The care of the patients is moving from the hospital to the ambulatory setting," she said. "Some of the surgeries that we used to do in the ER are now being done in ambulatory surgery centers. Antibiotics are being infused via IVs at patients' homes."
- **Focus on health and well-being.** "There's a transition as a society on focusing on the sick to prevention of disease," she said. "How can we prevent chronic illness once it occurs? How can we limit its progression? This is a very new focus for us in health care."
- **An increasing role of patient care teams.** This includes primary care doctors, pharmacists and case managers – rather than hospital-based teams.
- **A new focus on patient-centered care.** "It's a focus about how we can be everywhere the patient is, at anytime that the patient needs us," she said.

Lou Ferraro, Park South Photography

Dr. Christopher Frost

A sense of the way forward, Dr. Afsar said, came out of recent strategic meetings of the SHM board of directors, in which they talked about the role and future of hospitalists in population health management and value-based care. They agreed hospitalists should define themselves by their values and competencies, not by the hospital building itself. Hospitalists should use the acute care episode to make sure patients are connected to a larger system of care with wellness and prevention in mind.

In his own address at the SHM Annual Conference, Christopher Frost, MD, SFHM, the president-elect of SHM and national medical director of hospital-based services for LifePoint Health in Brentwood, Tenn., echoed Dr. Afsar's theme of action in the context of change.

A key word, he said, is "multifarious" – the health care industry changes, and the ways hospitalists are tackling them come in many and various types.

"We will not just react to, but actually help author, aspects of this change," he said, including the continued move from fee-for-service models to value-based and risk-based models of payment and how to put new insights into disease processes to use and how they're linked to social factors.

Hands-on critical care lessons at HM19

'A lot of hospitalists are intubating'

By Thomas R. Collins

NATIONAL HARBOR, MD / As the hospitalist tried to position the portable video laryngoscope properly in the airway of the critically ill "patient," HM19 faculty moderator Brian Kaufman, MD, professor of medicine, anesthesiology, and neurology at New York University, issued a word of caution: Rotating it into position should be done gently or there's a risk of tearing tissue.

Soon, a small video monitor displayed the desired view of the manikin's airway. Then the tube, with a flexible metal rod guiding it, was inserted successfully. The audience of learners, assembled in a room for the HM19 pre-course on critical care, gave light applause.

One step at a time, hospitalists attending the session grew more confident and knowledgeable in handling urgent matters involving patients who are critically ill, including cases of shock, mechanical ventilation, overdoses, and ultrasound.

Kevin Felner, MD, associate professor of medicine at NYU, said there's a growing need for more exposure to caring for the critically ill, including intubation.

"There are a lot of hospitalists who are intubating, and they're not formally trained in it because

LOU FERRARO, PARK SOUTH PHOTOGRAPHY

Dr. Brian Kaufman and mannequin

medicine residencies don't typically train people to manage airways," he said. "

The goal of this kind of training is to provide familiarity to supplement the experience a hospitalist might have already had.

"It might massage some of the things you're doing, make you afraid of things you should be afraid of, make you think about something that's easy to do that you're not doing, and make things safer," Dr. Felner said.

In a simulation room, James Horowitz, MD, clinical assistant professor and cardiologist at NYU, demonstrated how to use a laryngeal mask airway (LMA), a simpler alternative to intubating the trachea for keeping an airway open. Dr. Kaufman, standing next to him, clarified how important a skill this is, especially when someone needs air in the next minute or is at risk of death.

"Knowing how to put an LMA in can be life-saving," Dr. Kaufman said.

In a lecture on shock in the critically ill, Dr. Felner said it's important to be nimble in handling this common problem – quickly identifying the cause, whether it's a cardiogenic issue, a low-volume circulation problem, a question of vasodilation, or an obstructive problem. He said guidelines – such as aiming for a mean arterial pressure of 65 mm Hg – are helpful generally, but individuals routinely call for making exceptions to guidelines.

The idea behind the pre-course, Dr. Felner said, was to give hospitalists a chance to enter tricky situations with everything to gain, but nothing to lose. He described it as giving students "learning scars" – those times you made a serious error that left you with a lesson you'll never forget.

"We're trying to create learning scars, but in a safe scenario."

SHM welcomes four new board members

Four new hospitalists joined the Society of Hospital Medicine's Board of Directors at the 2019 SHM Annual Conference: Bryce Gartland, MD; Flora Kisuule, MD; Mark Shen, MD; and Chad Whelan, MD.

Bryce Gartland, MD, FHM

Dr. Gartland is hospital group president and cochief of clinical operations at Emory Healthcare in Atlanta. He joined Emory as a physician in 2005, practicing in hospital medicine. In 2012, Dr. Gartland assumed the position of COO at Emory University Hospital until mid-2015, when he was named CEO. He has played key roles in the hospital's University Health System Consortium rankings for quality and safety achievements, Magnet accreditation for nursing excellence, and the successful treatment of four patients diagnosed with Ebola virus disease.

Dr. Gartland

Flora Kisuule, MD, SFHM

Dr. Kisuule is an assistant professor at the Johns Hopkins University School of Medicine and an assistant professor in the Johns Hopkins Bloomberg School of Public Health, both in Baltimore. In July 2004, she joined the division of hospital medicine at Johns Hopkins and has served as the division's associate director since 2007. Dr. Kisuule also serves as the associate vice chair for clinical operations in the Johns Hopkins Bayview department of medicine. She is the recipient of the 2018 SHM Outstanding Service Award. Regionally, Dr. Kisuule has served as the vice president of the Baltimore chapter of the division of hospital medicine and has been recognized by the regional chapter as the hospitalist of the year. Nationally, she has served on several committees of the Society of Hospital Medicine and consulted on hospitalist programs around the country. Internationally, Dr. Kisuule has developed and mentored hospitalist programs in Saudi Arabia, the United Arab Emirates, and Central America.

Dr. Kisuule

Mark Shen, MD, SFHM

Dr. Shen has been president of Saint Louis Children's Hospital since November 2018. He was with Ascension Health from 2007 to 2018 and served in multiple leadership roles, including president at Dell Children's Medical Center/Dell Children's Health in Austin from 2013 to 2017. From 2017 to 2018, Dr. Shen served as chief executive officer for the Ascension Texas Accountable Care Network and as senior vice president of network development at Ascension Texas. In those roles, he initiated and developed statewide partnerships across the pediatric and adult systems and built a network of more than 2,700 providers covering 170,000 people across central Texas.

Dr. Shen

Chad Whelan, MD, FHM

Dr. Whelan is the chief executive officer of Banner – University Medical Center Tucson. Dr. Whelan comes to Banner with significant experience having previously served as the president of Loyola University Medical Center (LUMC) in Maywood, Ill., the only academic medical center within Trinity Health, where he was responsible for oversight of the 550-bed hospital and 25 ambulatory clinic sites with 700 employed physicians and 4,500 employees. While at LUMC, and prior to becoming president there, Dr. Whelan served as senior vice president and chief medical officer. His background also includes multiple leadership and clinical roles at Loyola University Health System and the University of Chicago Medicine.

Dr. Whelan

Planning for change in hospitalist practice management

Compensation, workflow top concerns

By Jeff Craven

NATIONAL HARBOR, MD / A practice management pre-course at the 2019 SHM Annual Conference focused on how to anticipate and embrace changing roles as hospital medicine groups are being asked to take on more responsibility.

"The scope of hospitalist practice is evolving rapidly, both clinically and in terms of all of the other things that hospitalists are being asked to do," said Leslie Flores, MHA, SFHM, a partner at Nelson Flores Hospital Medicine Consultants, La Quinta, Calif., and course co-director, in an interview before the pre-course. "Our goals with this program are to help leaders position their hospitalist groups for success with this changing environment that they're living in and the changing roles of hospitalists."

Lou Ferraro, Park South Photography

Leslie Flores outlines the day's schedule during the Sunday practice management pre-course.

In an audience poll at the beginning of "Oh, the Places We'll Go! Practice Management Tools for Navigating the Changing Role of Your Hospital Medicine Group," attendees – a majority of whom were practicing hospitalists and managers of hospitalist groups – said their biggest challenge areas were related to compensation or workflows that have not evolved to match their changing role and disagreements over who should admit patients.

One of the goals of the session was to give hospitalist leaders ideas to address these issues, which included information on how to implement better team-based care and interdisciplinary care models within their groups, as well as how to adjust their compensation, scheduling, and staffing models to prepare for this "new world of hospital medicine," said Ms. Flores.

"One of the biggest sources of contention and stress that we see in hospitalist groups is that there's just so much change, and it's happening so rapidly, and people are having a hard time really figuring out how to deal with all of that," she said.

The day began with John Nelson, MD, MHM, outlining the "Trends in Scope of Practice Evolution." Dr. Nelson, a partner at Nelson Flores Hospital Medicine Consultants, medical director of Overlake Medical Center in Bellevue, Wash., and course co-director, said hospitalists are increasingly working more in outpatient care, post-acute care, and other specialty facilities. In addition, as group size increases, the likelihood a hospitalist group will be responsible for an observation or short stay unit increases, while a larger group is less likely to have a clinical responsibility for ICU care, code blue or rapid response team.

Other topics in the pre-course focused on how to change the culture in a group to an environment where team members are empowered to ask questions or voice concerns, improve patient flow by removing reasons for delays in discharge, recruit the right team members to a group, handle transitions of care, and anticipate change in a group. In addition, the speakers participated in discussions where they shared their biggest successes and failures in practice as leaders and participated in a lightning round where they provided "off-the-cuff" responses to questions from Ms. Flores.

Although hospitalists did not create the current environment that is expanding their role in the health care system, they can position themselves to decide what the scope of their role is, said Dr. Nelson.

"What we should do is navigate our group through these changes in the way that's going to be most effective for ourselves, the providers in our group, and our organization," he said. "Those groups that try to dig their heels in or resist all change, they fail ... and they frustrate themselves. So instead, if you engage in planning for changes in the scope of your practice, you have a chance to make it go the way you'd like it to go, and you're going to be more satisfied."

Lou Ferraro, Park South Photography

Dr. Rachel Cyrus, Dr. John Nelson (center), and Dr. Mark V. Williams address attendees during the pre-course.

Hospitalists can help alleviate rising drug costs

Four key actions providers can take

By Madhukar Kasarla, MD, and Kirthi Devireddy, MBBS

Because of the increasing costs of prescription drugs and medical therapies, many patients are unable to afford the treatment they need that could improve their health or even save their lives. In the United States, drug manufacturers can set their own prices – a policy that has resulted in overall medicine costs being far higher than in other places around the globe. Increasingly, insurers are passing the costs along to patients through higher deductibles, and pharmaceutical companies are making record profits.

Something needs to change in order to achieve the right balance between maintaining pharmaceutical innovation and ensuring patients have proper access to treatments they need. Waiting for legislation, regulation, or the courts is not an effective short-term solution. Instead, hospitalists can take immediate actions to help by alleviating the costs for as many patients possible.

Historical context

Here are a few important factors that played a role in the dramatic price increase of pharmaceuticals.

Entrance of generic drugs: Around 2012 the entrance of generic drugs caused major unexpected competition in the medical industry. During this time, many insurers were promoting the generic drugs and not allowing brand names to be covered when a generic substitute was available.

"Orphan drugs" and manufacturer pricing: In 2014, 33 new brand-name drugs were launched in the United States, and only 8 had a direct price competitor at the time they were introduced. In addition, manufacturers were free to set their prices. Over the past decade, introductory prices for brand name drugs have reached unprecedented levels.

Expiring patents: There are 182 drugs that no longer have patent protection or any associated generics available. This creates opportunities for manufacturers to maintain patent-era pricing or even engage in price gouging.

Lack of robust competition: Several high-priced blockbuster drugs hit the market to treat serious diseases, most of which do not have generic brand substitutes. More than 500 drugs have only one marketed generic. In addition, manufacturer mergers and acquisitions have occurred, which has led to a more concentrated and less competitive market for pricing.

Stricter Food and Drug Administration policies: American consumers have access to the safest and most advanced pharmaceutical system in the world, which requires several trials and testing before the drug can be brought to the market. The downside means higher costs for the brand and manufacturer that they will want to recoup through the price of the drug on the market.

Number of new drugs allowed to enter the market: New drugs that enter the market in the United States do so more quickly than in most other countries. The $76 billion in research and development that pharmaceutical companies claim overlooks the ways that U.S. employers and taxpayers pay for at least 44% through tax subsidies and credits. What makes it worse is that research shows most corporate research and development is directed at minimally innovative new drugs.

How to alleviate rising drug costs

The good news is that hospitalists can do something about the high costs of pharmaceuticals.

Understand and offer alternative ways for drug intake: Many patients admitted to a hospital with severe infections are initially started with intravenous medications. Although conversion from intravenous to oral therapy is inappropriate for a patient who is critically ill or has an inability to absorb oral medications, every hospital will have a certain number of patients who are eligible for a switch from intravenous to oral therapy.

The World Health Organization reports that the irrational use of medicines is a major problem worldwide, including antibiotics. Switching from IV to oral enables one to select a cheaper or older antibiotic that is as effective as the IV antibiotic. However, this requires breaking the lingering belief that IV medications' bioavailability is stronger and creates less susceptibility to the illness recurrence. For many medications, essentially the same amount of drug is found in the blood when given intravenously or orally. In addition, research has shown several benefits beyond cost reduction for oral over IV, such as earlier discharge and reduced risk of infections.

Limit unnecessary antibiotic prescriptions and consider antibiotics stewardship programs: The Centers for Disease Control and Prevention reports that one in three (47 million) antibiotic prescriptions are unnecessary. Most of these unnecessary antibiotics are prescribed for respiratory conditions caused by viruses. Although the White House released the National Action Plan for Combating Antibiotic-Resistant Bacteria in 2015, which set a goal of reducing inappropriate outpatient antibiotic use by at least half by 2020, hospitalists can still do more by being extremely cautious with prescribing drugs to patients. Use appropriate consultants whenever necessary to suggest the right drug. For example, consider an infectious disease specialist to suggest the appropriate type and length of time for an antibiotic. In addition, hospital-based programs dedicated to improving antibiotic use, known as antibiotic stewardship programs, have been shown to optimize the treatment of infections and reduce adverse events associated with antibiotic use.

Review labs and vitals carefully and encourage a higher level of patient care beyond the digital tools available: Studies have shown an oversight in an exam (a "miss") can result in real consequences, including death. Our $3.4 trillion health care system is responsible for more than a quarter of a million deaths per year because of medical error. Much of that is a result of poorly coordinated care, poor communication, patients falling through the cracks, or knowledge not being transferred. "True clinical judgment is more than addressing the avalanche of blood work, imaging, and lab tests; it is about using human skills to understand where the patient is in the trajectory of a life and the disease, what the nature of the patient's family and social circumstances is, and how much they want done," wrote Abraham Verghese, MD, in the New York Times in 2018 ("How Tech Can Turn Doctors into Clerical Workers"). This also means understanding whether the patient is on any other type of medication and having knowledge of possible consequences for drug interactions. Always look for safe medications or discontinue the use of any unnecessary drugs the patient is currently taking.

Allow pharmacies to automatically substitute less expensive equivalent drugs: When prescribing pharmaceuticals for patients, determine if there are any substitutes that can help alleviate costs while delivering equivalent care.

Hospitalists can make a difference

There are many variables that play a role in rising pharmaceutical costs in the United States. One of the most significant is that there are no strategies in place to control pricing of drugs and the profits made by the pharmaceutical companies.

Although finding new drugs that can cure major life-threatening diseases or illnesses is important, so is ensuring that more patients have access to such drugs at a reasonable cost. While there are several ways that the government can and should help with enabling and supporting this balance, it most likely requires such large changes that it will take a long time. As a result, it is important for hospitalists to find effective short-term solutions that can be implemented right away to alleviate the rising costs of pharmaceuti-

Continued on following page

Dr. Kasarla

Dr. Devireddy

Dr. Kasarla is a hospitalist with APOGEE Physicians at Wise Surgical at Parkway in Fort Worth, Tex. He did his internal medicine residency at Mercy Hospital & Medical Center, Chicago. Contact him at madhukarreddy.kasarla@apogeephysicians.com. Dr. Devireddy is a hospitalist based at Sri Ramachandra Medical Centre, Porur, Tamilnadu, India. Contact her at drkirthireddy@gmail.com.

Malpractice: More lawsuits does not equal more relocations

By Alicia Gallegos
MDedge News

Physicians who have been sued multiple times are no more likely to relocate geographically than doctors who have never faced a claim, a new study shows.

David M. Studdert of Stanford (Calif.) University and his colleagues analyzed data from Medicare and the National Practitioner Data Bank (NPDB) to assess associations between the number of paid malpractice claims that doctors accrued and exits from medical practice, changes in clinical volume, geographic relocation, and change in practice-group size. The study population included 480,894 physicians who had 68,956 paid claims from 2003 to 2015. Of the study group, 89% had no claims, 9% had one claim, and the remaining 2% had two or more claims that accounted for 40% of all claims. Nearly three-quarters of the doctors studied were men, and the majority of specialties were internal medicine (17%), general practice/family medicine (15%), emergency medicine (7%), radiology (6%), and anesthesiology (6%).

Physicians with a higher number of claims against them did not relocate at a greater rate than physicians who had fewer or no claims, the investigators wrote in the New England Journal of Medicine.

More claims against a doctor were associated with a higher likelihood of leaving medicine and more shifts into smaller practice settings. For instance, physicians with one claim had 9% higher odds of leaving the practice than doctors with no claims, and physicians with five or more claims had a 45% higher chance of leaving medicine than doctors with no claims, the researchers found.

In addition, investigators found that doctors with two to four claims had 50%-60% higher odds of entering solo practice than physicians with no claims, and physicians with five or more claims had nearly 150% higher odds of moving to solo practice than doctors who had never been sued. Physicians with three or more claims were more likely to be male, work in surgical specialties, and be at least age 50 years.


Dr. Studdert

The study addresses concerns that physicians with troubling legal records were moving across state lines for a fresh start, Mr. Studdert said in an interview. "We were surprised to find that physicians who accumulated multiple malpractice claims were no more likely to relocate their practices than physicians without claims. The National Practitioner Data Bank probably has something to do with that."

Established by Congress in 1986, the NPDB was started, in part, to restrict the ability of incompetent physicians to move across states to hide their track records. By requiring hospitals to query doctors records before granting them clinical privileges and encouraging physician groups, health plans, and professional societies to do the same, the NPDB has "almost certainly increased the difficulty of relocation for physicians with legal problems," the authors noted in the study.

A primary takeaway from the analysis is that, while a single malpractice claim is a relatively weak signal that a quality problem exists, multiple paid claims over a relatively short period of time are a strong signal that a physician may have a quality deficiency, Mr. Studdert said in the interview.

"Regulators and malpractice insurers should be paying closer attention to this signal," he added. "To the extent that physicians are aware of a colleague's checkered malpractice history, they may have a role to play too. Vigilance about signs of further problems, for one, but also careful thought about the wisdom of referring patients to such physicians."

Michelle M. Mello, JD, PhD, and Mr. Studdert both reported receiving grants from SUMIT Insurance during the conduct of the study.

Continued from previous page

cals and provide proper patient care regardless of their economic status – all of which requires better research, analysis, and comparison before prescribing treatment to patients.

FURTHER READING

Olson and Sheiner (2017). "The Hutchins Center Explains: Prescription drug spending" Brooking.edu

Lo, Chris (2018). "Cost control: drug pricing policies around the world," Pharmaceutical-Technology.com

Center for Disease Control and Prevention. (2016). 1 in 3 antibiotic prescriptions unnecessary. Retrieved Jan 31, 2019, from https://www.cdc.gov/media/releases/2016/p0503-unnecessary-prescriptions.html

Verghese, Abraham (2018). "How Tech Can Turn Doctors Into Clerical Workers" NYTimes.Com

Waxman, Corr, Martin et al (2017). "Getting to the Root of High Prescription Drug Prices" Commonwealthfund.org

American Council on Science and Health. (2018). Government Is The Big Reason EpiPen And Other Generics Are So Expensive. Retrieved Jan 31, 2019, from https://www.acsh.org/news/2018/06/23/government-big-reason-epipen-and-other-generics-are-so-expensive-13114

Statista. (2018). U.S. Pharmaceutical Industry – Statistics & Facts. Retrieved Jan 31, 2019, from https://www.statista.com/topics/1719/pharmaceutical-industry/

FDA to expand opioid labeling with instructions on proper tapering

By Lucas Franki
MDedge News

The Food and Drug Administration is making changes to opioid analgesic labeling to give better information to clinicians on how to properly taper patients dependent on opioid use, according to Douglas Throckmorton, MD, deputy director for regulatory programs in the FDA's Center for Drug Evaluation and Research.

The FDA has recently received reports that patients physically dependent on opioid pain medicines who are taken off their medication too quickly have experienced serious adverse events, such as withdrawal symptoms, uncontrolled pain, and suicide.

Both the FDA and the Centers for Disease Control and Prevention offer guidelines on how to properly taper opioids, Dr. Throckmorton said, but more needs to be done to ensure that patients are being provided with the correct advice and care.

The changes to the labels will include expanded information to health care clinicians and are intended to be used when both the clinician and patient have agreed to reduce the opioid dosage. When this is discussed, factors that should be considered include the dose of the drug, the duration of treatment, the type of pain being treated, and the physical and psychological attributes of the patient.

Other actions the FDA is pursuing to combat opioid use disorder include working with the National Academies of Sciences, Engineering, and Medicine on guidelines for the proper opioid analgesic prescribing for acute pain resulting from specific conditions or procedures, and advancing policies that make immediate-release opioid formulations available in fixed-quantity packaging for 1 or 2 days.

"The FDA remains committed to addressing the opioid crisis on all fronts, with a significant focus on decreasing unnecessary exposure to opioids and preventing new addiction; supporting the treatment of those with opioid use disorder; fostering the development of novel pain treatment therapies and opioids more resistant to abuse and misuse; and taking action against those involved in the illegal importation and sale of opioids," Dr. Throckmorton said.

Find the full statement by Dr. Throckmorton on the FDA website.

Culture: An unseen force in the hospital workplace

Parallels from the airline industry

By Prasanth Prabhakaran, MD, and Venkatrao Medarametla, MD

"Workplace culture" has a profound influence on the success or failure of a team in the modern-day work environment, where teamwork and interpersonal interactions have paramount importance. Crew resource management (CRM), a technique developed originally by the airline industry, has been used as a tool to improve safety and quality in ICUs, trauma rooms, and operating rooms.[1,2] This article discusses the use of CRM in hospital medicine as a tool for training and maintaining a favorable workplace culture.

Origin and evolution of CRM

United Airlines instituted the airline industry's first crew resource management for pilots in 1981, following the 1978 crash of United Flight 173 in Portland, Ore. CRM was created based on recommendations from the National Transportation Safety Board and from a NASA workshop held subsequently.[3] CRM has since evolved through five generations, and is a required annual training for most major commercial airline companies around the world. It also has been adapted for personnel training by several modern international industries.[4]

From the airline industry to the hospital

The health care industry is similar to the airline industry in that there is absolutely no margin of error, and that workplace culture plays a very important role. The culture being referred to here is the sum total of values, beliefs, work ethics, work strategies, strengths, and weaknesses of a group of people, and how they interact as a group. In other words, it is the dynamics of a group.

According to Donelson R. Forsyth, a social and personality psychologist at the University of Richmond, Virginia, the two key determinants of successful teamwork are a "shared mental representation of the task," which refers to an in-depth understanding of the team and the tasks they are attempting; and "group unity/cohesion," which means that, generally, members of cohesive groups like each other and the group, and they also are united in their pursuit of collective, group-level goals.[5]

Understanding the culture of a hospitalist team

Analyzing group dynamics and actively managing them toward both the institutional and global goals of health care is critical for the success of an organization. This is the core of successfully managing any team in any industry.

Additionally, the rapidly changing health care climate and insurance payment systems requires hospital medicine groups to rapidly adapt to the constantly changing health care business environment. As a result, there are a couple of ways to evaluate the effectiveness of the team.

- **Measure tangible outcomes.** The outcomes have to be well defined, important, and measurable. These could be cost of care, quality of care, engagement of the team, etc. These tangible measures' outcome over a period of time can be used as a measure of how effective the team is.
- **Simply ask your team!** It is very important to know what core values the team holds dear. The best way to get that information from the team is to find out the de facto leaders of the team. They should be involved in the decision making process, thus making them valuable to the management as well as the team.

Culture shapes outcomes

We have used the analogy of a convex and concave lens to help understand this better (see Figure 1). A well-developed and well-coordinated team is like a convex lens. A lens' ability to converge or diverge light rays depends on certain characteristics like the curvature of surfaces and refractory index. Likewise, the culture of a group determines its ability to transform all the demands of the collective workload toward a unified goal/outcome. If it is favorable, the group will work as one and success will happen automatically.

Unfortunately, the opposite of this, (the concave lens effect), is more commonplace, where the dynamics of a team prevent the goals being achieved, as there is discordance, poor coordination of ideas and values, and team members not liking each other.

Most teams would fall somewhere within this spectrum, spanning the most favorable convex lens–like group to the least favorable concave lens–like group.

Change team dynamics using CRM principles

The concept of using CRM principles in health care is not entirely new. Such agencies as the Joint Commission and the Agency for Healthcare Research and Quality recommend using principles of CRM to improve communications, and as an error-prevention tool in health care.[6]

This approach can be broken down into four important steps (see Figure 2).

Dr. Prabhakaran

Dr. Medarametla

Dr. Prabhakaran is director of hospital medicine transitions of care, Baystate Medical Center, Springfield, Mass., and assistant professor of medicine, University of Massachusetts, Worcester. Dr. Medarametla is medical director, hospital medicine, Baystate Medical Center, and assistant professor of medicine, University of Massachusetts.

1. Recruit right. It is important to make sure that the new recruit is the right fit for the team and that the de facto leaders and a few other team members are involved in interviewing the candidates. Their assessment should be given due consideration in making the decision to give the new recruit the job.

Every program looks for aspects like clinical competence, interpersonal communication, teamwork, etc., in a candidate, but it is even more important to make sure the candidate has the tenets that would make him/her a part of that particular team.

2. Train well. The newly recruited providers should be given focused training and the seasoned providers should be given refresher training at regular intervals. Care should be taken in designing the training programs in such a way that the providers are trained in skills that they don't always think about, things that aren't readily obvious, and in skills that they never get trained in during medical school and residency.

Specifically, they should be trained in:

- **Values.** These should include the values of both the organization and the team.
- **Safety.** This should include all the safety protocols that are in place in the organization - where to get help, how to report unsafe events, etc.
- **Communication.**

Within the group: Have a mentor for the new provider, and also develop a culture where he/she feels comfortable to reach out to anyone in the team for help.

With patients and families: This training should ideally be done in a simulated environment if possible.

With other groups in the hospital: Consultants, nurses, other ancillary staff. Give them an idea about the prevailing culture in the organization with regard to these groups, so that they know what to expect when dealing with them.

- **Managing perceptions.** How the providers are viewed in the hospital, and how to improve it or maintain it.
- **Nurturing the good.** Use positive reinforcements to solidify the positive aspects of group dynamics these individuals might possess.
- **Weeding out the bad.** Use training and feedback to alter the negative group dynamic aspects.

Figure 2: Four key CRM steps

3. Intervene. This is necessary either to maintain the positive aspects of a team that is already high-functioning, or to transform a poorly functioning team into a well-coordinated team. This is where the principles of CRM are going to be most useful.

There are five generations of CRM, each with a different focus.[6] Only the aspects relevant to hospital medicine training are mentioned here.

- **Communication.** Address the gaps in communication. It is important to include people who are trusted by the team in designing and executing these sessions.
- **Leadership.** The goal should be to encourage the team to take ownership of the program. This will make a tremendous change in the ability of a team to deliver and rise up to challenges. The organizational leadership has to be willing to elevate the leaders of the group to positions where they can meaningfully take part in managing the team and making decisions that are critical to the team.
- **Burnout management.** Providers getting disillusioned: having no work-life balance; not getting enough respect from management, as well as other groups of doctors/nurses/etc. in the hospital; they are subject to bad scheduling and poor pay – all of which can all lead to career-ending burnout. It is important to recognize this and mitigate the factors that cause burnout.
- **Organizational culture.** If the team feels valued and supported, they will, in turn, work hard toward success. Creative leadership and a willingness to accommodate what matters the most to the team is essential for achieving this.
- **Simulated training.** These can be done in simulation labs, or in-group sessions with the team, recreating difficult scenarios or problems in which the whole team can come together and solve them.
- **Error containment and management.** The team needs to identify possible sources of error and contain them before errors happen. The group should get together if a serious event happens and brainstorm why it happened and take measures to prevent it.

4. Reevaluate. Team dynamics tend to change over time. It is important to constantly reevaluate the team and make sure that the team's culture remains favorable. There should be recurrent cycles of retraining and interventions to maintain the positive growth that has been attained, as depicted in the schematic below:

Conclusion

CRM is widely accepted as an effective tool in training individuals in many high performing industries. This article describes a framework in which the principles of CRM can be applied to hospital medicine to maintain positive work culture.

References

1. Haerkens MH et al. Crew Resource Management in the ICU: The need for culture change. Ann Intensive Care. 2012 Aug 22;2:39.

2. Haerkens MH et al. Crew Resource Management in the trauma room: A prospective 3-year cohort study. Eur J Emerg Med. 2018 Aug;25(4):281-7.

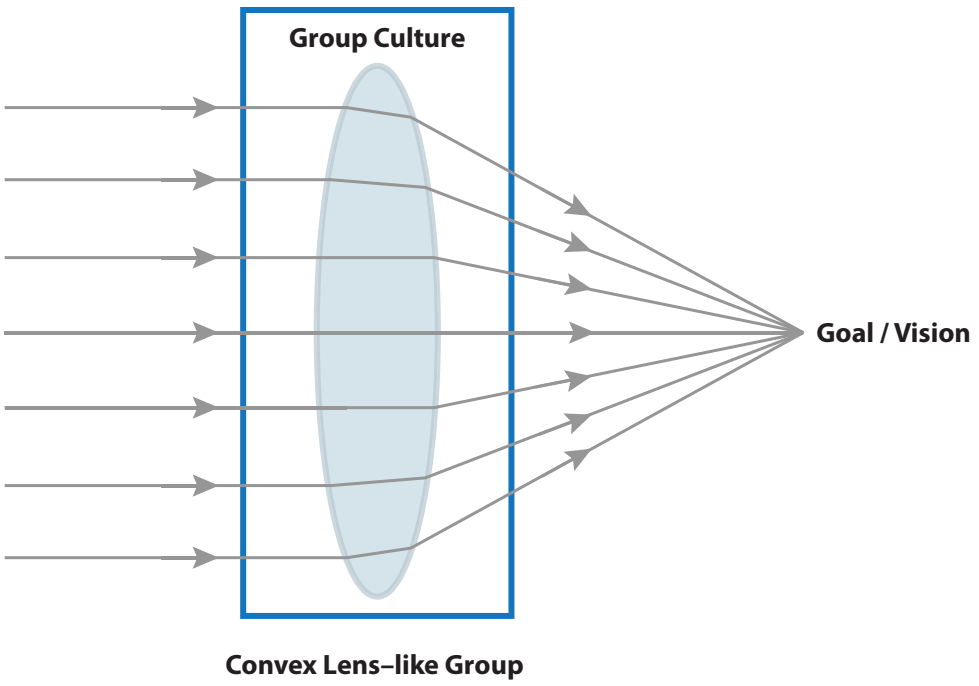
3. Malcolm Gladwell. The ethnic theory of plane crashes. Outliers: The Story of Success. (Boston: Little, Brown and Company; 2008:177-223).

4. Helmreich RL et al. The evolution of Crew Resource Management training in commercial aviation. Int J Aviat Psychol. 1999;9(1):19-32.

5. Forsyth DR. The psychology of groups. In R. Biswas-Diener & E. Diener (eds), Noba textbook series: Psychology. Champaign, Ill: DEF publishers; 2017.

6. Crew Resource Management. Available at Aviation Knowledge. Accessed Dec. 20, 2017.

Figure 1: Group culture: Convex vs. concave lens analogy



Unit-based models of care

A tool for ensuring patient safety

By Sima Pendharkar, MD, MPH, FACP; Geeta Malieckal, MD; and James Gasperino, MD, PhD

"To me, teamwork is the beauty of our sport, where you have five acting as one. You become selfless." – Mike Krzyzewski, Duke University basketball coach

High-performing teams plan, communicate, reflect, and take action together. Teamwork can transform seemingly impossible tasks into opportunities for people to come together and create value.

The increasing complexity of health care makes team-based care necessary to achieve successful health outcomes for patients. At the Brooklyn (N.Y.) Hospital Center, a 464-bed care center, we transformed the model of care on the medical wards into a geographic, unit-based team model. Here we describe our journey – the successes, the challenges, and the opportunities for growth.

CECILIE_ARCURS/GETTY IMAGES

Previous model

In the previous care model on our medical wards, no set structures were in place. Teams would travel to multiple wards throughout the hospital to see the patients they were rounding on. Each floor had its own set of social workers and case managers, therefore a hospital medicine team routinely dealt with more than eight social workers and case managers to address their patients' needs in a single day.

Multidisciplinary rounds for all medical patients were held at 11 a.m. in a room located a significant distance away from the medical wards. All case managers and social workers would sit in this room from 11 a.m. until noon, and teams would travel to that room to discuss their patients.

Many challenges were identified in this model, including a lack of communication, a de-emphasis on teamwork, and a design that did not take physician workflows into account resulting in low efficiency. Thus, these challenges sparked a desire to create a more effective and team-based methodology of accomplishing excellence in delivery of clinical care. Dr. Pendharkar, having worked primarily in centers with unit-based care, determined that a geographic, unit-based model of care could transform care delivery at the Brooklyn Hospital Center.

Looking ahead

The efforts for transforming the vision of geographic, unit-based teams into a reality started by gathering all stakeholders together to unite for a common mission. Initial meetings were held with all parties including social workers, case managers, residents, nursing staff, bed board and attending physicians in internal medicine, and the emergency department.

The vision of a geographic, unit-based team was shared and explained to all team members. Exercises in LEAN methodology were conducted, including one-piece flow exercises, to highlight the possibilities of what could be accomplished through teamwork. Once support for the vision was in place from all parties, the logistics were addressed.

The biggest challenge to overcome was how to place all of one team's patients on a singular medical ward. In our hospital, a medical ward holds anywhere from 30 to 33 patients. Each hospital medicine team, of which there are many, typically carries 20-23 patients. We created a blueprint to map out the floor to which each team and attending would be assigned. Next, we partnered with both IT and bed board to design an admission order set that specified the particular geographic location that a team and attending were associated with so that patients could be placed accordingly from the ED.

It was important for the ED doctors, bed board, and the internal medicine residents to understand these changes because all of these parties were involved in the initial admitting process. Dr. Pendharkar and Dr. Malieckal provided all groups with in-person training on how the logistics of the system would unfold. Noon conference lectures also were held to explain the vision to residents.

Over 3 weeks, the first ward we chose to implement our model on slowly accumulated the patients of one team – this was the gradual trickle phase. We then selected a "reset" date. On the reset date, it was determined that all patients would go to the team that was assigned to that floor, with the exception of any private attendings' patients.

On the day before the reset date, time was spent ensuring that all hand-offs were safe. Dr. Pendharkar and Dr. Malieckal spoke with every intern and team that would be handing off and/or receiving patients as a result of the reset policy. The goal was to ensure that on that date a ward had close to 100% of its patients belonging to the team/attending that was assigned to that area.

The good

Once we began our geographic, unit-based model, our rounding process was transformed.

Now, our morning rounds were joined by the bedside nurse, case manager, social worker, clinical pharmacy, and nutrition in addition to the core team. The entire team went from room to room on one ward rounding on all 20-25 patients back to back, which created an unparalleled level of efficiency and a forum for effective communication lasting throughout the day.

We also added workstations on wheels (WOWS) to the rounding process so that labs, radiology, and more could be reviewed on rounds with the entire team. A standard script was developed so that each patient was introduced to all members of the team, and the care plan was disclosed and highlighted. One patient noted, "I feel so cared for, knowing I have this entire team taking care of me." We also rounded in the afternoon with the case managers and social workers to follow up on tasks that were to be completed that day.

Our first few weeks utilizing the geographic, unit-based model of rounding was largely successful. The residents, now able to round on all of their patients in one location with one case manager and one social worker, noted, "This model of rounding makes my life so much easier, I feel like I can focus on the patient rather than running around.

Dr. Pendharkar

Dr. Malieckal

Dr. Pendharkar is division chief of hospital medicine at the Brooklyn (N.Y.) Hospital Center, medical director of inpatient services and director of quality for the department of medicine at the Brooklyn Hospital Center and assistant professor of medicine, Icahn School of Medicine at Mount Sinai, New York. Dr. Malieckal is chief resident, internal medicine, at the Brooklyn Hospital Center. Dr. Gasperino (not pictured) is chair, department of medicine; vice president for critical care, perioperative, and hospital medicine; and associate chief medical officer at the Brooklyn Hospital Center.

... and I know the social worker and case manager will help me."

Provider satisfaction had improved, from residents to physicians to nurses, case managers, social workers, and more. Our case manager also noted her satisfaction with the new model, stating that her communication with the medical team was much easier. As the attending, I witnessed firsthand how working together with the team moved care forward much more quickly, compared with the previous model, because of the simple factor of increased ease of communication.

Now all team members were together in the patient room and discussion was much easier. There was less confusion, fewer delays, and better communication – I think unit-based teams can even be described as a lifesaving measure that reduces harm to patients. An additional benefit is the relationship that now developed between doctors, social workers, and case managers – they spent more time together and really got to know one another, creating a feeling of shared success and a deeper drive to help one another succeed.

In our model, 87% of surveyed residents said they felt less burned out in the new geographic, unit-based model of care, and 91% of physicians surveyed said it was easier to talk with team members to coordinate care. Additionally, our HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) scores saw a drastic increase in many domains. Nursing communication improved by more than 42% on domain 7B; doctor communication improved by more than 31%. Additionally, all other domains saw at least 10% improvement. We are now 5 months out from our initial rollout of the model and continue to see sustained improvements in quality measures.

The bad

The biggest challenges that we are working through with this model are hand-offs and transfer of patients from one team to another. Sometimes, it happens that one team's patient will wind up on a floor that is the designated floor of another team because of bed availability. We continue to work with bed board to address this issue. We want to minimize transfers and hand-offs to promote continuity and have to balance that with the need for geographic location. With clear communication, hospital collaboration from bed board and safe hand-off methods, this problem can be safely addressed.

Conclusions

The experience of implementing the unit-based team model has been an eye-opening journey. One thing that stands out is that, in an increasingly complex health care system, design thinking is critical.

Design thinking takes into consideration the needs of those who are using a system. In this case, patients and health care workers including doctors, nurses, case managers, and social workers are the end users of the health care system. All parties are utilizing the health care system to optimize patient health. Therefore, we must create systems that are easy to navigate and use by patients and health care workers so that they can ensure the success of patients.

Unit-based teams offer a basic framework to optimize the inpatient system to facilitate better workflow. In our system, it allowed us to optimize communications between health care workers and also between health care workers and patients. It allowed team members to work in close proximity to better share ideas with each other.

We spent a significant amount of time upfront earning the support of all of the disciplines for this effort. We had support from all leaders within the organization and continue to make our case for this model by sharing metrics and holding forums to discuss the process.

Initial data show a marked improvement in many domains of HCAHPS scores. Our frontline staff, including attendings, residents, nursing, case managers, and social workers, also continue to support this effort since it has a positive impact on their workflow and improves their workday quality. One nurse mentioned specifically, "in my 30 years at this hospital I have never seen people work together so well."

To sustain this effort, we continue to have regular meetings, and there are new features that we would like to add to the program. For example, we are working with our IT group to ensure that each unit-based team will have dashboards available to incorporate real-time, actionable data into daily workflows.

We are excited by the potential of our high-performing teams to highlight the patient experience, placing the patient at the center for care, decision making, and rounding. Health care is a team sport, and anytime you build something where all teams are playing together and approaching the finish line as a unit, you will never go wrong!

U.S. hospitalized pulmonary embolisms nearly doubled during 2004-2015

Shifting treatment pattern for hospitalized PE patients

By Mitchel L. Zoler
MDedge News

NEW ORLEANS / The incidence of pulmonary embolism diagnosed in hospitalized U.S. patients nearly doubled during the period 2004-2015 based on data collected by the National Inpatient Sample.

During 2004-2015 the incidence of all diagnosed pulmonary embolism (PE), based on discharge diagnoses, rose from 5.4 cases/1,000 hospitalized patients in 2004 to 9.7 cases/1,000 hospitalized patients in 2015, an 80% increase, Joshua B. Goldberg, MD said at the annual meeting of the American College of Cardiology. The incidence of major PE – defined as a patient who needed vasopressor treatment, mechanical ventilation, or had nonseptic shock – rose from 7.9% of all hospitalized PE diagnoses in 2004 to 9.7% in 2015, a 23% relative increase.

The data also documented a shifting pattern of treatment for all hospitalized patients with PE, and especially among patients with major PE. During the study period, treatment with systemic thrombolysis for all PE rose nearly threefold, and catheter-directed therapy began to show a steady rise in use from 0.2% of all patients in 2011 (and before) to 1% of all patients by 2015. Surgical intervention remained lightly used throughout, with about 0.2% of all PE patients undergoing surgery annually.

Most of these intervention options focused on patients with major PE. Among patients in this subgroup with more severe disease, use of one of these three types of interventions rose from 6% in 2004 to 12% in 2015, mostly driven by a rise in systemic thrombolysis, which jumped from 3% of major PE in 2004 to 9% in 2015. However, the efficacy of systemic thrombolysis in patients with major PE remains suspect. In 2004, 39% of patients with major PE treated with systemic thrombolysis died in hospital; in 2015 the number was 47%. "The data don't support using systemic thrombolysis to treat major PE; the mortality is high," noted Dr. Goldberg, a cardiothoracic surgeon at Westchester Medical Center in Valhalla, N.Y.

Mitchel L. Zoler/MDedge News

Dr. Joshua B. Goldberg

"The data don't support using systemic thrombolysis to treat major PE; the mortality is high."

Although catheter-directed therapy began to be much more widely used in U.S. practice starting in about 2015, during the period studied its use for major PE held fairly steady at roughly 2%-3%, but this approach also showed substantial shortcomings for the major PE population. These sicker patients treated with catheter-directed therapy had 37% mortality in 2004 and a 31% mortality in 2015, a difference that was not statistically significant. In general, PE patients enrolled in the catheter-directed therapy trials were not as sick as the major PE patients who get treated with surgery in routine practice, Dr. Goldberg said in an interview.

The data showed much better performance using surgery, although only 1,237 patients of the entire group of 713,083 PE patients studied in the database underwent surgical embolectomy. Overall, in-hospital mortality in these patients was 22%, but in a time trend analysis, mortality among all PE patients treated with surgery fell from 32% in 2004 to 14% in 2015; among patients with major PE treated with surgery, mortality fell from 52% in 2004 to 21% in 2015.

Dr. Goldberg attributed the success of surgery in severe PE patients to the definitive nature of embolectomy and the concurrent use of extracorporeal membrane oxygenation that helps stabilize acutely ill PE patients. He also cited refinements that surgery underwent during the 2004-2015 period based on the experience managing chronic thromboembolic pulmonary hypertension, including routine use of cardiopulmonary bypass during surgery. "Very high risk [PE] patients should go straight to surgery, unless the patient is at high risk for surgery because of conditions like prior sternotomy or very advanced age, in which case catheter-directed therapy may be a safer option, he said. He cited a recent 5% death rate after surgery at his center among patients with major PE who did not require cardiopulmonary resuscitation.

The database Dr. Goldberg and his collaborator reviewed included 12,735 patients treated by systemic thrombolysis, and 2,595 treated by catheter- directed therapy. Patients averaged 63 years old. The most common indicator of major PE was mechanical ventilation, used on 8% of all PE patients in the study. Nonseptic shock occurred in 2%, and just under 1% needed vasopressor treatment.

Published guidelines on PE management from several medical groups are "vague and have numerous caveats," Dr. Goldberg said. He is participating in an update to the 2011 PE management statement from the American College of Cardiology and American Heart Association (Circulation. 2011 April 26;123[16]:1788-830).

The study received no commercial funding. Dr. Goldberg had no disclosures.

View on the News

Mitchel L. Zoler/MDedge News

Dr. Raymond L. Benza

Hospitals must do a better job preventing PE

Hospital staffs now do a lot of screening for pulmonary embolism, so I'm surprised to see these data showing that the in-hospital diagnosis has been increasing. If the data are representative, it suggests that the staffs must do a better job preventing pulmonary embolism by using appropriate prophylaxis for deep vein thrombosis.

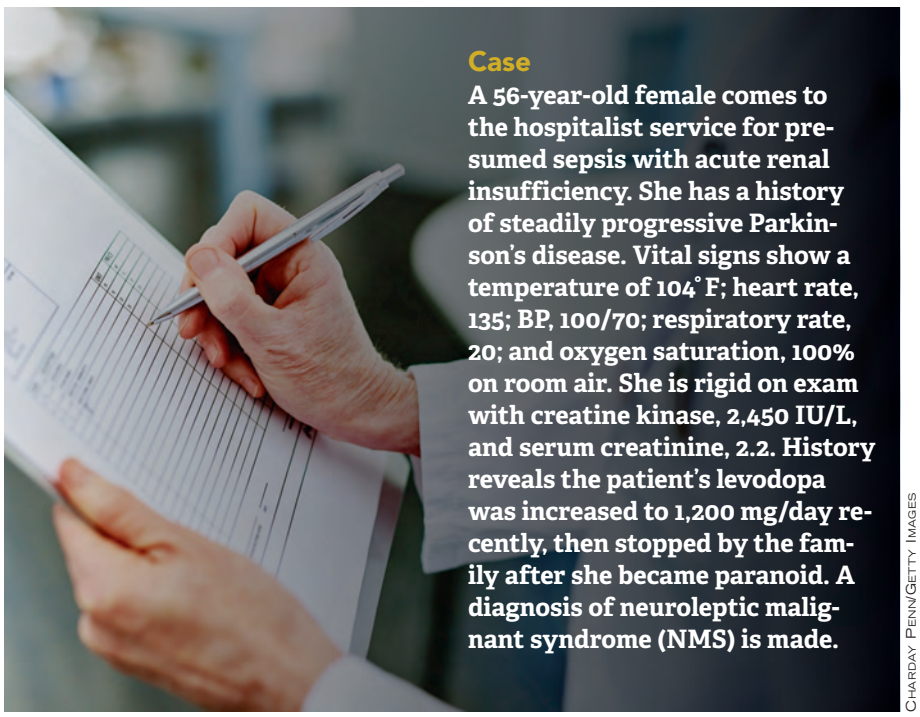
Raymond L. Benza, MD, is professor of medicine at Temple University, Philadelphia, and program director for advanced heart failure at the Allegheny Health Network in Pittsburgh. He has been a consultant to Actelion, Gilead, and United Therapeutics, and he has received research funding from Bayer. He made these comments in an interview.

Key Clinical Question

When is electroconvulsive therapy (ECT) indicated?

Know the general work-up and contraindications

By Michael Lang, MD, FACP, DFAPA



CHARDAY PENN/GETTY IMAGES

Case

A 56-year-old female comes to the hospitalist service for presumed sepsis with acute renal insufficiency. She has a history of steadily progressive Parkinson's disease. Vital signs show a temperature of 104˚F; heart rate, 135; BP, 100/70; respiratory rate, 20; and oxygen saturation, 100% on room air. She is rigid on exam with creatine kinase, 2,450 IU/L, and serum creatinine, 2.2. History reveals the patient's levodopa was increased to 1,200 mg/day recently, then stopped by the family after she became paranoid. A diagnosis of neuroleptic malignant syndrome (NMS) is made.

Background

Electroconvulsive therapy (ECT) has been the gold standard for treatment of refractory psychiatric disease for decades. While it has proven beneficial for both medical and psychiatric disorders, it remains surrounded in controversy. Additionally, there is a significant degree of discomfort among nonpsychiatric providers on when to consider ECT, as well as how to evaluate the patient and manage their comorbidities before and during the procedure.[1]

Hospitalists should be familiar with the relative contraindications and general work-up for ECT, which can expedite both psychiatric and anesthesia evaluations and minimize adverse outcomes.

While the mechanism of action still is not known, ECT exerts a variety of effects in the brain and periphery. The dominant theory is that ECT increases neurotransmitter activity throughout the brain. Studies have shown increased GABA transmission, normalized glutamate transmission, and resetting of the hypothalamic-pituitary axis, as well as activation of downstream signal transduction pathways leading to increased synaptic connectivity in the brain. Many of ECT's results may be caused by combinations of the above mechanisms.[2]

ECT principally is indicated for refractory mood and psychotic disorders. These include schizophrenia, bipolar disorder, and major depression. ECT-responsive patients typically have failed multiple appropriate medication trials and often have prolonged hospitalizations. What is less known are the medical indications for this procedure. Examples include Parkinson's disease (especially with on/off phenomenon), status epilepticus, and neuroleptic malignant syndrome.[3] Additionally, ECT has been shown to be beneficial for slow-to-resolve delirium and catatonia (regardless of etiology).

A psychiatrist also may take into consideration factors such as past response to ECT or the level of urgency to the patient's presentation.[4] A general work-up includes basic comprehensive metabolic panel, complete blood count, chest x-ray, EKG, and other testing based on history, physical, and past medical history.[5]

While there are no absolute contraindications to ECT, several relative contraindications exist (see Figure 1). These include recent MI or stroke (generally within the last 30 days), increased intracranial pressure, active bleeding (especially from the central nervous system), retinal detachment, and unstable dentition. Apart from making sure the technique is medically indicated, an ECT consultant also evaluates the medical comorbidities. The patient may require treatment, such as removal of unstable dentition, prior to the procedure if clinical urgency does not preclude a delay.

Select patients require more detailed consultation prior to the onset of anesthesia. Examples would include patients with pseudocholinesterase deficiency, myasthenia gravis, or pregnancy. Pregnancy often is considered a contraindication, but ECT has no notable effect on labor & delivery, fetal injury, or development. It would be a preferred modality over medications, especially in unstable mothers during the first trimester. ECT exerts little effect on the fetus because the amount of current that actually gets to the fetus is negligible.[6]

Outside the central nervous system, ECT exerts the most influence over the cardiovascular system. During the tonic phase of a seizure, increased vagal tone can depress the heart rate to asystole in some patients (see Figure 2). This may last for 3-4 seconds until the clonic phase occurs (with a noradrenergic surge), whereupon the heart rate can accelerate to the 140s. Unless unstable cardiac disease is present, patients typically tolerate this extremely well without any adverse sequelae.[7] Studies involving patients who have severe aortic stenosis and pacemakers/defibrillators show overall excellent tolerability.[8,9]

Medications can have an impact on the onset, quality, and duration of seizures. Thus, a careful medication review is needed. A consultant will look first for medications such as benzodiazepines or anticonvulsants that would raise the seizure threshold. Ideally, the medications would be stopped, but if not feasible, they can be held the night before (or the day before in the case of such

Continued on following page ▸

Dr. Lang is clinical associate professor in the departments of psychiatry and internal medicine and director of the electroconvulsive therapy and transcranial magnetic stimulation programs at East Carolina University, Greenville, N.C.

ECT indications

Psychiatric	Medical
Mood disorders	NMS
Psychotic disorders	Status epilepticus
Catatonia	Parkinson's
	Catatonia

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Source: Dr. Lang

Figure 1

Relative contraindications

- Recent MI/heart failure
- Recent stroke
- Space-occupying lesions
- Increased intracranial pressure
- Recent intracranial hemorrhage
- Active bleeding
- Aneurysms or vascular malformation
- Pheochromocytoma
- Retinal detachment
- Unstable dentition
- Severe liver disease

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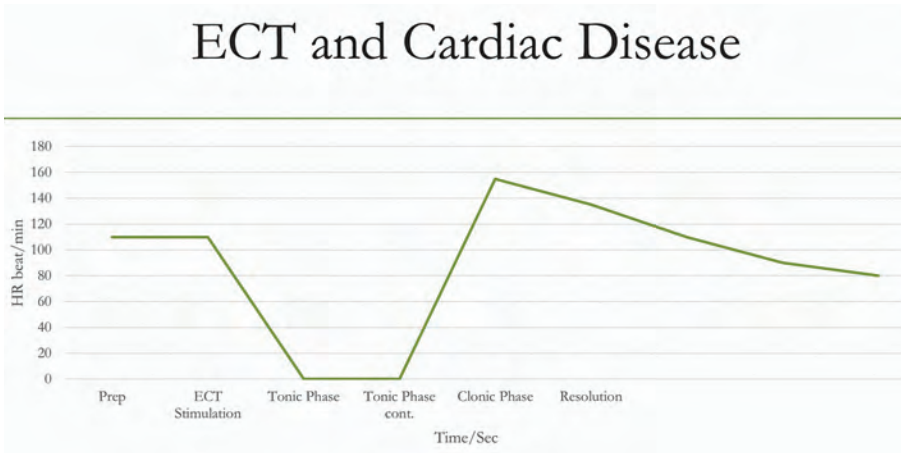
Source: Weiner R, Krystal A, Coffey E, 2000

Figure 2



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long half-life agents as diazepam) to minimize their impact.

As for anticonvulsants, the doses can be reduced, along with modest increases in energy settings to facilitate seizure. If used for mood stabilization only, one could consider stopping them completely, but this is usually not required (it is not recommended to stop them if used for epilepsy). Lithium can lead to prolonged neuromuscular blockade, prolonged seizures, or postictal delirium. However, discontinuation of lithium also has a risk-benefit consideration, so usually doses are reduced and/or decreased doses of neuromuscular blockade are employed. Theophylline can induce extended seizures or status epilepticus so it is usually held prior to ECT.

Back to the case

Given the patient's severe Parkinson's disease and concurrent NMS, ECT was initiated. By the second treatment, fever and tachycardia resolved. By the sixth treatment, all NMS symptoms and associated paranoia had completely resolved and her Parkinson's disease rating scale score went from 142 to 42. Her levodopa dose was reduced from 1,200 to 300 mg/day. She remained stable for years afterward.

Bottom line

ECT is both effective and well tolerated in patients who have received appropriate medical evaluation.

Key points

- ECT is indicated for psychotic and depressive disorders, with high efficacy and rapid response.
- ECT also has proven benefits for NMS, catatonia, delirium, status epilepticus, and Parkinson's disease.
- Evaluation and focused treatment of relative contraindications maximizes both safety and tolerability of ECT.

References

1. Weiner R et al. "Electroconvulsive therapy in the medical & neurologic patient" in A Stoudemire, BS Fogel & D Greenberg (eds) Psychiatric Care of the Medical Patient, 2nd ed., New York, Oxford Univ Press. 2000:419-28. (Second edition is out of print.)

2. Baghai T et al. Electroconvulsive therapy and its different indications. Dialogues Clin Neurosci. 2008 Mar;10(1):105-17.

3. Ozer F et al. Electroconvulsive therapy in drug-induced psychiatric states and neuroleptic malignant syndrome. J ECT. 2005 Jun;21(2):125-7.

4. Taylor S. Electroconvulsive therapy: A review of history, patient selection, technique, and medication management. South Med J. 2007 May;100(5):494-8.

5. The Practice of Electroconvulsive Therapy, 2nd edition. A Task Force Report of the American Psychiatric Association. 2001. pp. 84-85.

6. Miller LJ. Use of electroconvulsive therapy during pregnancy. Hosp Community Psychiatry. 1994 May;45(5):444-50.

7. Miller R et al. ECT: Physiologic Effects. Miller's Anesthesia. 7th Edition. 2009.

8. Mueller PS et al. The Safety of electroconvulsive therapy in patients with severe aortic stenosis. Mayo Clin Proc. 2007 Nov;82(11):1360-3.

9. Dolenc TJ et al. Electroconvulsive therapy in patients with cardiac pacemakers & implantable cardioverter defibrillators. Pacing Clin Electrophysiol. 2004 Sep;27(9):1257-63.

Suggested Readings

- The practice of electroconvulsive therapy: Recommendations for treatment, training, and privileging (A Task Force Report of the American Psychiatric Association), 2nd Edition. APA Publishing. 2001.
- Weiner R et al. "Electroconvulsive therapy in the medical & neurologic patient" in A Stoudemire, BS Fogel & D Greenberg (eds) Psychiatric Care of the Medical Patient, 2nd ed., New York, Oxford Univ Press. 2000:419-28. (Second edition is out of print.)
- Rosenquist P et al. Charting the course of electroconvulsive therapy: Where have we been and where are we headed? J Psychosoc Nurs Ment Health Serv. 2016 Dec 1;54(12):39-43.

Quiz

1. All of the following are indications for ECT except?
A. Schizophrenia.
B. Panic attacks.
C. Bipolar mania.
D. Catatonia.
Answer: B. Panic attacks. ECT is not effective for anxiety disorders including panic, generalized anxiety, PTSD, or OCD.

2. The most commonly accepted mechanism of action for ECT is?
A. Reduction in glutamate levels.
B. Altering signal transduction pathways.
C. Increased neurotransmitter activity.
D. Increased cerebral blood flow.
Answer: C. Increased neurotransmitter activity. There are data to support all, but neurotransmitter flow is most accepted thus far.

3. Which of the following is a common side effect of ECT?
A. Bronchospasm.
B. Diarrhea.
C. Delirium.
D. Visual changes.
Answer: C. Delirium. The rest are rare or not noted.

4. Which of the following is a relative contraindication for ECT?
A. Pregnancy.
B. Epilepsy.
C. Advanced age.
D. Increased intracranial pressure.
Answer: D. Increased intracranial pressure.

In the Literature

ITL: Clinician reviews of HM-centric research

By Neal Biddick, MD; Amanda Cooke, MD; Rusty Phillips, MD; Shree L. Radhakrishnan, MD, MSCI; Bethany Roy, MD; Joshua Allen-Dicker, MD, MPH, FHM

Beth Israel Deaconess Medical Center and Harvard Medical School, Boston

IN THIS ISSUE

By Neal Biddick, MD

1 EHR prompt significantly reduced telemetry monitoring during inpatient stays

CLINICAL QUESTION: Can an EHR prompt reduce the utilization of telemetry monitoring on an inpatient medical service?
BACKGROUND: Prior studies have shown multifaceted interventions that include EHR prompts can reduce the utilization of telemetry monitoring, but it is unclear if EHR prompts alone can reduce utilization.
STUDY DESIGN: Cluster-randomized, control trial.
SETTING: November 2016 and May 2017 at a tertiary care medical center on the general medicine service.
SYNOPSIS: The authors designed an EHR prompt for patients ordered for telemetry. The prompt would request the team to either discontinue or continue telemetry. Half of the general medicine teams (representing 499 hospitalizations) were randomized to receive the intervention, and the other half of the general medicine teams (representing 567 hospitalizations) did not receive the intervention. In the intervention group, 62% of prompts were followed by a discontinuation of telemetry. This led to a 17% reduction in the mean hours of telemetry monitoring (50 hours in the control group and 41.3 hours in the intervention group; $P = .001$). There was no significant difference in the rate of rapid responses or medical emergencies between the two groups.


Dr. Biddick

BOTTOM LINE: A targeted EHR prompt alone may lead to a reduction in the utilization of telemetry monitoring.
CITATION: Najafi N et al. Assessment of a targeted electronic health record intervention to reduce telemetry duration: A cluster-randomized clinical trial. JAMA Intern Med. 2019 Dec 10;179(1):11-5.

2 Dose-reduced NOACs may be safer than warfarin in some AFib patients

CLINICAL QUESTION: Are dose-reduced non–vitamin K antagonist oral anticoagulants (NOACs) safer or more effective than warfarin is in patients with atrial fibrillation who are eligible for a dose-reduced NOAC?
BACKGROUND: Prior studies have suggested that NOACs have a favorable risk-benefit profile when compared with warfarin, but it is unclear if this advantage also is present for those high-risk patients for whom NOAC dose reduction is recommended.
STUDY DESIGN: A meta-analysis.
SETTING: Three phase 3 randomized, control trials.
SYNOPSIS: From the three randomized, control trials, the authors identified 7,351 of the 46,426 patients as being eligible for dose-reduced NOACs. Of these patients, 3,702 were randomized to take a NOAC and 3,649 were randomized to take warfarin. For the primary outcomes of stroke or systemic embolism, there was no significant difference between patients randomized to receive dose-reduced NOAC versus warfarin. For outcomes of major bleeding, hemorrhagic stroke, intracranial hemorrhage, and fatal bleeding, dose-reduced NOACs had a significantly lower risk, compared with warfarin.
BOTTOM LINE: In patients eligible for dose-reduced NOACs, the use of dose-reduced NOACs may have a better safety profile without significant difference in the rate of ischemic stroke or systemic embolism.
CITATION: Wang KL et al. Efficacy and safety of reduced-dose non–vitamin K antagonist oral anticoagulants in patients with atrial fibrillation: A meta-analysis of randomized controlled trials. Eur Heart J. 2018 Dec 22. doi: 10.1093/eurheartj/ehy802.

Dr. Biddick is a hospitalist at Beth Israel Deaconess Medical Center and instructor in medicine Harvard Medical School.

By Amanda Cooke, MD

3 How P-wave indices can improve AFib-related ischemic stroke prediction

CLINICAL QUESTION: Do the addition of P-wave indices (PWIs) measurements to the CHA_2DS_2-VASc score improve the ability to predict atrial fibrillation (AFib)–related ischemic stroke?
BACKGROUND: Current AFib management guidelines recommend ischemic stroke risk stratification with CHA_2DS_2-VASc score; however, emerging studies have highlighted limitations of this score.
STUDY DESIGN: Retrospective review of previously obtained prospective cohort study data.
SETTING: Fourteen U.S. communities.
SYNOPSIS: For the 2,929 individuals with new incident AFib without anticoagulant use in the prior year, study authors computed P-wave indices (including P-wave axis, P-wave duration, advanced interatrial block, and P-wave terminal force in lead V1) from the most recent sinus rhythm EKG prior to the diagnosis of AFib. Cox proportional hazard models estimated the hazard ratio between PWIs and ischemic stroke. Of the PWIs tested above, abnormal P-wave axis (hazard ratio, 1.88; 95% confidence interval, 1.36-2.61) and advanced interatrial block (HR, 2.93; 95% CI 1.78-4.81) were associated with increased risk of stroke after adjustment for individual CHA_2DS_2-VASc variables. A P_2-CHA_2DS_2-VASc score that incorporated abnormal P-wave axis measurements demonstrated superior discrimination, compared with the CHA_2DS_2-VASc score alone, and resulted in improvement in ischemic stroke risk classification.


Dr. Cooke

BOTTOM LINE: Abnormal P-wave axis and advanced interatrial block measured during periods of sinus rhythm may be associated with

Continued on following page

Short Takes

E-cigarettes with behavioral support more effective than nicotine replacement for smoking cessation

A study of 886 randomized United Kingdom National Health Service stop-smoking service attendees showed better 1-year abstinence rates in the e-cigarette (18%) vs. nicotine replacement product (9%) group (risk ratio,1.83; 95% confidence interval, 1.30-2.58) when both groups received behavioral support.
CITATION: Hajek P et al. A randomized trial of e-cigarettes versus nicotine-replacement therapy. N Eng J Med. 2019 Feb 14;380:629-37.

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increased risk of ischemic stroke in patients with atrial fibrillation; the P_2-CHA_2DS_2-VASc score incorporating abnormal P-wave axis may be superior to CHA_2DS_2-VASc in ischemic stroke risk classification.
CITATION: Maheshwari A et al. Refining prediction of atrial fibrillation–related stroke using the P_2-CHA_2DS_2-VASc score. Circulation. 2019 Jan 8;139:180-91.

4 Patient-reported complications regarding PICC lines after inpatient discharge

CLINICAL QUESTION: What signs and symptoms of possible complications are observed in patients who undergo placement of a peripherally inserted central catheter (PICC)?
BACKGROUND: Despite the rise in utilization of PICC lines, few studies have addressed complications experienced by patients following PICC placement, especially subsequent to discharge from the inpatient setting.
STUDY DESIGN: Prospective longitudinal study.
SETTING: Medical inpatient wards at four U.S. hospitals in Michigan and Texas.
SYNOPSIS: Standardized questionnaires were completed by 438 patients who underwent PICC line placement during inpatient hospitalization within 3 days of placement and at 14, 30, and 70 days. The authors found that 61.4% of patients reported at least one possible PICC-related complication or complaint. A total of 17.6% reported signs and symptoms associated with a possible bloodstream infection; however, a central line–associated bloodstream infection was documented in only 1.6% of patients in the medical record. Furthermore, 30.6% of patients reported possible symptoms associated with deep venous thrombosis (DVT), which was documented in the medical record in 7.1% of patients. These data highlight that the frequency of PICC-related complications may be underestimated when relying solely on the medical record, especially when patients receive follow-up care at different facilities. Functionally, 26% of patients reported restrictions in activities of daily living and 19.2% reported difficulty with flushing and operating the PICC.
BOTTOM LINE: More than 60% of patients with PICC lines report signs or symptoms of a PICC-related complication or an adverse impact on physical or social function.
CITATION: Krein SL et al. Patient-reported complications related to peripherally inserted central catheters: A multicenter prospective cohort study. BMJ Qual Saf. 2019 Jan 25. doi: 10.1136/bmjqs-2018-008726.

Dr. Cooke is a hospitalist at Beth Israel Deaconess Medical Center.

By Rusty Phillips, MD

5 New score predicts benefits of prolonged cardiac monitoring for TIA, stroke patients

CLINICAL QUESTION: How can we determine which patients would benefit from prolonged cardiac monitoring after a neurologic event?
BACKGROUND: Identifying paroxysmal atrial fibrillation (AFib) as the etiology of a transient ischemic attack (TIA) or stroke has implications for treatment as well as secondary prevention. Currently, there is not a universal, practical way to help determine which patients would benefit from prolonged cardiac monitoring to establish the diagnosis of AFib.
STUDY DESIGN: Logistic regression analysis of three prospective multicenter trials examining TIA and stroke patients who received Holter-ECG monitoring.


Dr. Phillips

SETTING: Patients who presented with TIA or stroke in Central Europe.
SYNOPSIS: Using data from 1,556 patients, the authors identified age and NIH stroke scale score as being predictive of which patients were at highest risk for AFib detection within 72 hours of Holter-ECG monitor initiation. The authors developed a formula, titled AS5F; this formula scores each year of age as 0.76 points and then an NIH stroke scale score of 5 or less as 9 points or greater than 5 as 21 points. The authors found that the high-risk group (defined as those with AS5F scores of 67.5 or higher) had a predicted risk of 5.2%-40.8%, with a number needed to screen of 3. Given that a majority of the European patients included in the study were white, generalizability to other populations is unclear.
BOTTOM LINE: AS5F score may be able to predict those TIA and stroke patients who are most likely to be diagnosed with AFib with 72-hour cardiac monitoring.
CITATION: Uphaus T et al. Development and validation of a score to detect paroxysmal atrial fibrillation after stroke. Neurology. 2019 Jan 8. doi. 10.1212/WNL.0000000000006727.

6 Oral antibiotics as effective as IV for stable endocarditis patients

CLINICAL QUESTION: Can patients with left-sided endocarditis safely switch from intravenous to oral antibiotics?
BACKGROUND: Patients with left-sided infective endocarditis often are treated with prolonged courses of intravenous (IV) antibiotics. The safety of switching from IV to oral antibiotics is unknown.
STUDY DESIGN: Randomized, multicenter, noninferiority study.
SETTING: Cardiac centers in Denmark during July 2011–August 2017.
SYNOPSIS: The study enrolled 400 patients with left-sided infective endocarditis and positive blood cultures from *Streptococcus*, *Enterococcus*, *Staphylococcus aureus*, or coagulase-negative staph (non–methicillin-resistant *Staphylococcus aureus*), without evidence of valvular abscess. Following at least 7 days (for those who required surgical intervention) or 10 days (for those who did not require surgical intervention) of IV antibiotics, patients with ongoing fever, leukocytosis, elevated C-reactive protein, or concurrent infections were excluded from the study. Patients were randomized to receive continued IV antibiotic treatment or switch to oral antibiotic treatment. The IV treatment group received a median of 19 additional days of therapy, compared with 17 days in the oral group. The primary composite outcome of death, unplanned cardiac surgery, embolic event, and relapse of bacteremia occurred in 12.1% in the IV therapy group and 9% in the oral therapy group (difference of 3.1%; 95% confidence interval, –3.4 to 9.6; $P = .40$), meeting the studies prespecified noninferiority criteria. Poor representation of women, obese patients, and patients who use IV drugs may limit the study's generalizability. An accompanying editorial advocated for additional research before widespread change to current treatment recommendations are made.
BOTTOM LINE: For patients with left-sided infective endocarditis who have been stabilized on IV antibiotic treatment, transitioning to an oral antibiotic regimen may be a noninferior approach.
CITATION: Iverson K et al. Partial oral versus intravenous antibiotic treatment of endocarditis. N Eng J Med. 2019 Jan 31;380(5):415-24.

Dr. Phillips is a hospitalist at Beth Israel Deaconess Medical Center and instructor in medicine at Harvard Medical School.

By Shree L. Radhakrishnan, MD, MSCI

7 Spanish risk score predicts 30-day mortality in acute HF in ED patients

CLINICAL QUESTION: Is the MEESSI-AHF score valid to use in EDs in Switzerland?
BACKGROUND: The MEESSI-AHF (Multiple Estimation of Risk based on the Emergency Department Spanish Score In patients with Acute Heart Failure) score is a risk-stratification tool that includes systolic blood pressure, age, NT-proBNP, potassium, cardiac troponin T, New York Heart Association class 4 disease, respiratory rate, low-output symptoms, oxygen saturation, episode associated with acute coronary syndrome, signs of left ventricular hypertrophy on EKG,

Short Takes

New scoring system more accurate in diagnosing sepsis than qSOFA

Using retrospective data from 2,759,529 ED patients in 49 urban hospitals, and a supervised machine-learning process, the authors developed a Risk of Sepsis score, which demonstrated significantly higher sensitivity for detecting sepsis than the qSOFA (Quick Sequential Organ Failure Assessment) score.
CITATION: Delahanty R et al. Development and evaluation of a machine learning model for the early identification of patients at risk for sepsis. Ann Emerg Med. 2019 Apr;73(4):334-44.

Shared decision making may decrease risk of legal action

A randomized, controlled simulation experiment using a clinical vignette with an adverse outcome showed that when engaged in shared decision making, participants were less likely to consider taking legal action.
CITATION: Schoenfeld EM et al. The effect of shared decision making on patients' likelihood of filing a complaint or lawsuit: A simulation study. Ann Emerg Med. 2019 Jan 3. doi: 10.1016/j.annemergmed.2018.11.017.

creatinine, and Barthel Index Score. Prior research has shown that it accurately risk-stratified ED patients with AHF in Spain. It has not been studied in other populations.
STUDY DESIGN: Prospective multicenter cohort study.
SETTING: Adult ED patients with acute dyspnea in four hospitals in Switzerland.
SYNOPSIS: The study included 1,247 nonhemodialysis patients who presented to the ED with acute dyspnea, were found to have all the necessary variables to calculate the MEESSI-AHF score, and were adjudicated to have acute heart failure. The authors calculated a modified MEESSI-AHF score, excluding the Barthel Index for all patients. The authors found that a six-group modified MEESSI-AHF risk-stratification model could predict 30-day mortality with excellent discrimination (C-Statistic, 0.80). Limitations of the study include the exclusion of all hemodynamically unstable patients and those on hemodialysis.
BOTTOM LINE: The MEESSI-AHF score effectively predicts 30-day mortality in AHF in Swiss and Spanish ED patients.
CITATION: Wussler D et al. External validation of the MEESSI acute heart failure risk score: A cohort study. Ann Intern Med. 2019;170:248-56.

8 Aspirin for primary prevention reduces risk of CV events, increases bleeding

CLINICAL QUESTION: What is the association between aspirin for primary prevention and cardiovascular events and bleeding?
BACKGROUND: Aspirin is beneficial in secondary prevention of stroke and MI. There is no consensus on its role in primary prevention of the same.
STUDY DESIGN: Systematic review and meta-analysis.
SETTING: PubMed and Embase search on Cochrane from the earliest publication available through Nov. 1, 2018.
SYNOPSIS: This meta-analysis included randomized, controlled trials that compared aspirin use versus no aspirin use in more than 1,000 participants without known cardiovascular (CV) disease. The primary CV outcome was a composite of CV mortality, nonfatal MI, and nonfatal stroke. The primary bleeding outcome was major bleeding (defined by individual studies). Thirteen studies enrolling 164,225 participants and including 1,050,511 participant-years were included. Compared with no aspirin use, aspirin use showed a reduction in composite CV outcomes (hazard ratio, 0.89; 95% confidence interval, 0.84-0.95; number needed to treat, 265) and an increased risk of major bleeding (HR, 1.43; 95% CI, 1.30-1.56; number needed to harm, 210). Limitations of the study include variations in data quality, outcome definitions, and aspirin doses among trials. The study authors advocate for including the lower risk of CV events and increased risk of major bleeding as part of discussions with patients about the use of aspirin for primary prevention.


Dr. Radhakrishnan

BOTTOM LINE: Aspirin for primary prevention lowers risk of CV events and increases risk of major bleeding. Health care providers should include this as part of informed decision-making discussions with patients about the use of aspirin for primary prevention.
CITATION: Zheng S et al. Association of aspirin use for primary prevention with cardiovascular events and bleeding events: A systematic review and meta-analysis. JAMA. 2019 Jan 22;321(3):277-87.

Dr. Radhakrishnan is a hospitalist at Beth Israel Deaconess Medical Center.

By Bethany Roy, MD

9 Oral vs. IV antibiotic therapy in early treatment of complex bone and joint infections

CLINICAL QUESTION: Are oral antibiotics noninferior to intravenous antibiotics in the treatment of bone and joint infections?
BACKGROUND: The standard of care for complex bone and joint infections includes the use of IV antibiotics. A prior meta-analysis suggested that the outcomes for bone and joint infections treated with oral and IV antibiotics are similar.
STUDY DESIGN: Randomized, controlled trial.
SETTING: Twenty-six U.K. sites during June 2010–October 2015.
SYNOPSIS: The study enrolled 1,054 adults with bone or joint infections who would have been treated with 6 weeks of IV antibiotics; they were then randomized to receive either IV or oral antibiotics. Treatment regimens were selected by infectious disease specialists. The rate of the primary endpoint, definite treatment failure at 1 year after randomization, was 14.6% in the intravenous group and 13.2% in the oral group. The difference in the risk of definite treatment failure between the two groups was –1.4% (95% confidence interval, –5.6 to 2.9), which met the predefined noninferiority criteria. The use of oral antibiotics also was associated with a shorter hospital stay and fewer complications. The conclusions of the trial are limited by the open-label design. An associated editorial advocated for additional research before widespread change to current treatment recommendations.


Dr. Roy

BOTTOM LINE: Bone and joint infections treated with oral versus IV antibiotics may have similar treatment failure rates.
CITATION: Li HK et al. Oral versus intravenous antibiotics for bone and joint infection. N Eng J Med. 2019 Jan 31;380(5):425-36.

10 Risk stratification of syncope patients can help determine duration of telemetry monitoring

CLINICAL QUESTION: In ED patients with syncope, what is the optimal duration of telemetry monitoring to detect underlying arrhythmia?
BACKGROUND: About half of ED patients with syncope of unknown etiology are admitted for telemetry monitoring. No consensus exists regarding the optimal duration of telemetry monitoring in these patients to detect underlying arrhythmia.
STUDY DESIGN: Prospective cohort study.
SETTING: Six EDs in Canada during September 2010–March 2015.
SYNOPSIS: Using the Canadian Syncope Risk Score, 5,581 adults who presented to the ED within 24 hours of a syncopal event were risk stratified as low, medium, or high risk for serious adverse events (arrhythmic vs. nonarrhythmic) and then followed for 30 days. Approximately half of arrhythmias were identified among low-risk patients within 2 hours of telemetry monitoring and within 6 hours of monitoring among medium- and high-risk patients. In the low-risk group, none experienced death or ventricular arrhythmia within 30 days. In the medium- and high-risk group, 91.7% of underlying arrhythmias were identified within 15 days. The study was limited by the lack of standardized approach in the use of outpatient cardiac rhythm monitoring, which may have resulted in arrhythmia underdetection.
BOTTOM LINE: Among ED patients with syncope of unknown etiology, approximately 47% of arrhythmias were detected after 2-6 hours of telemetry monitoring. Among medium- and high-risk patients, the majority of serious arrhythmias were identified within 15 days. Based on these results, the authors recommend the use of 15-day outpatient cardiac monitoring for medium- and high-risk patients.
CITATION: Thiruganasambandamoorthy V et al. Duration of electrocardiographic monitoring of emergency department patients with syncope. Circulation. 2019 Mar 12;139(11):1396-406.

Dr. Roy is a hospitalist at Beth Israel Deaconess Medical Center and instructor in medicine at Harvard Medical School.

Short Takes

ADA issues new inpatient diabetes care recommendations

The American Diabetes Association recommends that insulin therapy be initiated for a majority of inpatients who have persistent hyperglycemia greater than 180 mg/dL to target a blood glucose range of 140-180 mg/dL. They recommend the use of basal insulin or basal plus bolus insulin and discourage the sole use of sliding scale insulin.
CITATION: American Diabetes Association. 15. Diabetes care in the hospital: Standards of Medical Care in Diabetes-2019. Diabetes Care. 2019;42(Suppl. 1):S173-81.

Beta-blocker use may reduce risk of COPD hospitalization

In a retrospective longitudinal study of 301,542 patients newly prescribed beta-blockers and 1,000,633 patients newly prescribed any other antihypertensive drug, patients who were treated with beta-blockers continuously for more than 6 months had a significantly lower risk of chronic obstructive pulmonary disease (COPD) hospitalization, all-cause mortality, and COPD death than did patients who received alternative antihypertensives. Patients with a history of COPD hospitalization were excluded from this study.
CITATION: Nielsen AO et al. Beta-blocker therapy and risk of chronic obstructive pulmonary disease: A Danish nationwide study of 1.3 million individuals. EClinicalMedicine. 2019;7:21-6. doi: 10.1016/j.eclinm.2019.01.004.

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

Faculty Positions—Hospital Medicine

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CHA Cambridge Health Alliance — AFFILIATED WITH Beth Israel Deaconess Medical Center

ICU Hospitalist/Nocturnist CHA Everett Hospital

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GUTHRIE

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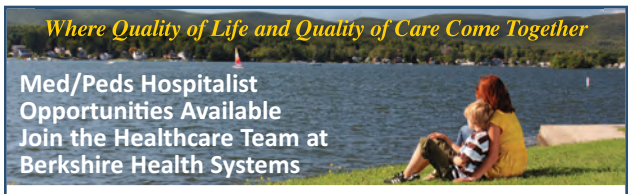

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ADIRONDACK HEALTH

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For more information please contact: Heather J. Peffley, PHR FASPR, Penn State Health Physician Recruiter
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Living into your legacy

What I learned from women of impact

By Vineet Arora, MD, MAPP, MHM

The word legacy has been synonymous with death to me. When so and so dies, we discuss their legacy. I had a powerful experience that changed my mind on this word that is befitting for this Legacies column.

Seven years ago, I was sitting in a room of powerful women, and I was the youngest one there. I wasn't sure how I got there, but I am glad I did because it changed my life. At the time, I was panicked. The exercise was called "Craft your legacy statement."

But this exercise was different. The ask was to "live into your legacy." Craft a legacy statement in *three* minutes that summarizes what you want your legacy to be ... and then decide the three things you need to do now to get there. So, here is my exact legacy 3-minute statement: *I am an innovator pushing teaching hospitals to optimize training and patient care delivery through novel technologies and systems science.* Clearly, I did not aim high enough. One of the other attendees stated her legacy simply as "Unleash the impossible!" So clearly, I was not able to think big at that moment, but I trudged on.

Next, I had to write the three things I was going to do to start enacting my legacy that day. Things went from bad to worse quickly since I knew this was not going to be easy. The No. 1 thing had to be something I was going to stop doing because it did not fit with my legacy; No. 2 was what I was going to start doing to enact this legacy now; and No. 3 was something I was going to do to get me closer to what I wanted to be doing. So No. 1 was to resign my current leadership role that I had had for 8 years; No. 2, start joining national committees that bridge education and quality; and No. 3, meet with senior leadership to pitch this new role as a bridging leader that would align education and quality.

As happens with all conferences, I went home and forgot what I had done and learned. I settled back into my old life and routines. A few weeks later, a plain looking envelope with awful penmanship showed up at my doorstep addressed to me. It wasn't until after I opened it and read what was inside that I realized I was the one with horrible penmanship! I completely forgot that I wrote this letter to myself even though they told me it would come and I would forget I wrote it! So, how did I do? Let's just say if the letter had not arrived, I am not sure where I would be. Fortunately, it did come, and I followed my own orders. Fast forward to present day and I recently stepped into a new role – associate chief medical officer of clinical learning environment – a bridging leader who aligns education and clinical care missions for our health system. Let's just say again, had that letter not arrived, I am not sure where I would be now.

I have been fortunate to do many things in hospital medicine – clinician, researcher, educator, and my latest role as a leader. Through it all, I would say that there are some lessons that I have picked up along the way that helped me advance, in ways I did not realize:

- **Be bold.** Years ago, when I was asked by my chair who they should pick to be chief resident, I thought "This must be a trick question – I should definitely tell him why I should be chosen – and then pick the next best person who I want to work with." Apparently, I was the only person who did that, and that is why my chair chose me. Everyone else picked two other people. So the take-home point here is do not sell yourself short ... ever.
- **Look for the hidden gateways.** A few years ago, I was asked if I wanted to be an institutional leader by the person who currently had that role. I was kind of thrown for a loop since of course I would not want to appear like I wanted to take his job. I said everything was fine and I felt pretty good about my current positions. It was only a few weeks later that I realized that he was ascertaining my interest in his job since he was leaving. They gave the job to someone else and the word on the street was I was not interested. I totally missed the gate! While it wasn't necessarily the job I missed out on, it was the opportunity to consider the job because I was afraid. So, don't miss the gate. It's the wormhole to a different life that may be the right one for you, but you need to "see it" to seize it.
- **Work hard for the money and for the fun.** There are many things Gwyneth Paltrow does that I do not agree with, but I will give her credit for one important lesson: She divides her movie roles into those she does for love (for example, The Royal Tenenbaums) and those she does for money (for example, Shallow Hal). It made me realize that even a Hollywood starlet has to do the stuff she may not want to do for the money. So, as a young person, you have to work hard for the money, but ideally it will help you take on a project you love, whatever it is. You've won the game when you're mostly paid to work for the fun ... but that may take some time.
- **Always optimize what is best for you personally AND professionally.** While I was on maternity leave, the job of my dreams presented itself – or so I thought it did. It was at the intersection of policy, quality, and education, with a national stage, and I would not need to move. But I knew I could not accept the travel commitment with a young child. While I wondered if I would have regrets, it turns out the right decision professionally also has to work personally. Likewise, there are professional obligations that I take on because they work personally.
- **Figure out who your tea house pals are.** A few years ago, I was in San Francisco with two close friends having an epic moment about what to do with our lives as adults. We were all on the cusp of changing our directions. Not surprisingly, we could see what the other needed to do, but we could not see it for ourselves. We still text each other sometimes about the need to go back to the Tea House. Sometimes your "tea house pals" are not necessarily those around you every day. They know you, but not everyone in your work place. This "arm's length" or distance gives them the rational, unbiased perspective to advise you – distance that you or your colleagues will never have.
- **Look for ways to enjoy the journey.** Medicine is a very long road. I routinely think about this working with all the trainees and junior faculty I encounter. You can't be in this solely for the end of the journey. The key is to find the joy in the journey. For me, that has always come from seeking out like-minded fellow travelers to share my highs and lows. While I tweet for many reasons, a big reason is that I take pleasure in watching others on the journey and also sharing my own journey.

Here's to your journey and living your legacy!

Dr. Arora is associate chief medical officer, clinical learning environment, at University of Chicago Medicine and assistant dean for scholarship and discovery at the University of Chicago Pritzker School of Medicine. You can follow her journey on Twitter.

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