

THE Hospitalist

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Caring for transgender inpatients

Hospitalists seek better training on gender identity issues

By Thomas R. Collins

Henry Ng, MD, MPH, an internal medicine physician and pediatrician in Cleveland who specializes in the treatment of lesbian, gay, bisexual, and transgender (LGBT) patients, walked into an exam room to meet a patient several years ago. The patient was 65 years old and presented as a man.

"Hello, Mr. Smith. How are you today?" Dr. Ng said.

"Oh," the man replied. "I'm here to transition."

Dr. Ng immediately regretted how he had addressed the patient. In this case, his normally innocuous greeting could have been harmful. The man did not identify as a man – as "Mister" – and this could have derailed the health care encounter, Dr. Ng said. Luckily the patient corrected him.

"I made an assumption about this person based on the cues that I saw and I misperceived this person's identity," he said. "A patient less comfortable in their skin may have left. And a younger patient would likely have been offended if I had met and misgendered them."

If Dr. Ng could make this kind of error, it's clear how easy it is for clinicians with less training and experience to make clumsy assumptions about gender identity.

Even with wider societal awareness of gender identity issues, the cultural sensibilities and training among hospitalists and other clinicians required for quality care of transgender patients is still lacking, Dr. Ng said. Unfortunately, many physicians may have little interest in providing this care, or lack the skills for it, he said.

In the hospital, patients already feel vulnerable because of their medical conditions, and treating transgender inpatients may require additional

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Physician health programs: 'Diagnosing for dollars'?

By Dinah Miller, MD

As medicine struggles with rising rates of physician burnout, dissatisfaction, depression, and suicide, one solution comes in the form of Physician Health Programs, or PHPs. These organizations were originally started by volunteer physicians, often doctors in recovery, and funded by medical societies, as a way of providing help while maintaining confidentiality. Now, they are run by independent corporations, by medical societies in some states, and sometimes by hospitals or health systems. The services they offer vary by PHP, and they may have relationships with state licensing boards. While they can provide a gateway to help for a troubled doctor, there has also been concern about the services that are being provided.

Physicians find their way to PHPs in a number of ways. A doctor whose behavior suggests impairment can be referred to the PHP by his employer, or by a licensing board, following a complaint. In these instances, participation often is a condition of employment or of continued licensure, and the PHP serves as an agent of the hospital or the state. Doctors may also be referred to PHPs for monitoring if they ascribed to having a diagnosis of psychiatric illness or substance abuse, either now or in the past, and are with or without obvious impairment. Finally, PHPs serve as a portal to treatment for physicians who self-identify and self-refer in an effort to get help. Their use is encouraged in an effort to prevent bad outcomes from mental health conditions, stress, and substance abuse, in those who are suffering in ways that would not otherwise call attention to their plights.

In these situations, the PHP may serve as the agent of the patient or client, but there may remain dual-agency issues if the physician says something that leads the PHP to be concerned about the doctor's fitness. Compliance with PHP recommendations, including drug screening, might be mandated, and physicians may resent these requirements.

Louise Andrew, MD, JD, served

Dr. Miller is coauthor with Annette Hanson, MD, of "Committed: The Battle Over Involuntary Psychiatric Care" (Baltimore: Johns Hopkins University Press, 2016).



as the liaison from the American College of Emergency Physicians to the Federation of State Medical Boards from 2006 to 2014, and has become concerned that PHPs may have taken on the role of what is more akin to "diagnosing for dollars." In a May 2016 column in *Emergency Physician's Monthly*, Andrew said "Horror stories that colleagues related to me while I chaired ACEP's Personal and Professional WellBeing Committee cannot all be isolated events. For example, physicians who self-referred to the PHP for management of stress and depression were reportedly railroaded into incredibly expensive and inconvenient out-of-state drug and alcohol treatment programs, even when there was no coexisting drug or alcohol problem."

Dr. Andrew is not the only one voicing concerns about PHPs. In "Physician Health Programs: More harm than good?" (Medscape, Aug. 19, 2015), Pauline Anderson wrote that the North Carolina PHP "created the appearance of conflicts of interest by allowing ... centers to provide both patient evaluation and treatments."

The American Psychiatric Association has made it a priority to address physician burnout and mental health. Richard F. Summers, MD, APA Trustee-at-Large said state PHPs are an "essential resource for physicians, but there is a tremendous diversity in quality and approach."

PHPs provide a much-needed service. But if the goal is to provide mental health and substance abuse services to physicians who are struggling, then any whiff of corruption and any fear of professional repercussions become a reason not to use these services. If they are to be helpful, physicians must feel safe using them.

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Leadership

Thomas McIlraith, MD, SFHM, CLHM

Team engagement and motivation critical to QI success

By Sharon Worcester
Frontline Medical News

Thomas McIlraith, MD, SFHM, CLHM, never imagined he would be leading hospitalists and launching quality improvement (QI) initiatives, but only 1 year out of residency, he was doing just that.

In 2000, Dr. McIlraith had spent a year working as a hospitalist at South Sacramento (Calif.) Kaiser Permanente when he was tapped for the QI program director role.

"Obviously I didn't have a lot of preparation," he said of that first job as director. "All of a sudden I found myself in charge of 15 hospitalists, ... and I really didn't know what I was getting myself into."

But a passion for quality improvement – for striving to always find ways to do better – put Dr. McIlraith on that path and kept him on it through two terms as chair of the hospital medicine department of Mercy Medical Group in Sacramento, where he was hired in 2004. He completed his second term in June 2016 (the department quintupled in size during his tenure), and then chose to return to the ranks as a hospitalist focusing on patient care – and on spending time with his kids before they finished high school.

But quality improvement is in his blood, and he can see himself returning to it someday, Dr. McIlraith said.

"For me it was never about rising up in the ranks of leadership. It was really about making the world I exist in better," he said.

In recounting some of the lessons he learned over the last 17 years, Dr. McIlraith recalled his first and all-time favorite quality initiative: Central Coordination. It was a concept he implemented around 2002 at Kaiser Permanente that fundamentally changed the way patients were admitted from the emergency department.

The previous system had separate admitting and rounding physicians, which lead to too many patient hand-offs, increased risk of mistakes, poor efficiency, and low patient satisfaction, he said.

"We actually took the job of distributing patients out of physicians' hands altogether," Dr. McIlraith explained.

Under Central Coordination, patient assignments were coordinated by a clerical staffer who distributed them evenly among a team of six doctors.

"The most amazing thing was that after this was implemented we went back and looked at ER responsiveness, and our ability to respond to the needs of the ER improved dramatically," he said. "That wasn't even an outcome I intended to impact, or look at, but the data were unequivocal. It ended up being really enduring and substantial on many fronts."

Mercy Medical Group still uses Central Coordination systemwide, and the results of Dr. McIlraith's initiative were eventually published.

"At the same time, due to my lack of experience in 2002, I definitely made some mistakes," he said of the undertaking. Among them was failing to recognize just how resistant people can be to change. "I thought [the plan] was so brilliant that everyone would see that and get in line behind me," he said. "Then I had a rude awakening that not everyone sees things the same way I do."

Even though the existing system left a lot to be desired, the doctors were comfortable with it, Dr. McIlraith explained, stressing that implementing change requires the buy-in of team members.

If he could do it over again, he would follow the eight-step "Road Map for Change" as outlined by Jeffrey Glasheen, MD, SFHM, during the Society of Hospital Medicine's Leadership Academy, Dr. McIlraith said.

Dr. Glasheen's road map emphasizes team engagement and motivation, as well as the importance of creating a "burning platform" (the imperative for change).

"You need to be systematic about it to get people to change behaviors," Dr. McIlraith said, noting that behavioral change is one of the greatest challenges and one of the leading causes of failure to attain sustained QI results.

In fact, the main reason for the enduring success of Central Coordination was that it took the focus off of behavioral change and put it on the process. "We took the behavior aspect out of the equation and put form over function," Dr. McIlraith said.

One recent QI initiative involved

increasing the percentage of discharge orders delivered before 11 a.m. Dr. McIlraith put the lessons he learned to work by creating an "excellence team" that met regularly to identify key problems and to create "SMART (Specific, Measurable, Attainable, Relevant, and Timely) goals," which are necessary for success.

Because the team not only bought into the plan to meet the target but also helped create the plan, it wasn't necessary to force behavioral change, Dr. McIlraith said. Instead the team lead the initiative, set the targets and goals, and ended up surpassing the initial goal of reaching 30% of discharge orders in by 11 a.m. (in fact, they hit 40%).

Dr. McIlraith's advice for QI success is to know the problem you are trying to solve so that you can tell if the solution you implement is having the desired impact and also to measure the impact of that solution using the SMART goals.



"For me it was never about rising up in the ranks of leadership. It was really about making the world I exist in better."

—Dr. McIlraith

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Q&A

Career development: One of many new focal points at HM 2018

Kathleen Finn, MD, FACP, FHM, shares advice on getting involved

By Felicia Steele

This month, *The Hospitalist* spotlights Kathleen Finn, MD, M Phil, FACP, FHM, the inpatient associate program director of the internal medicine residency program at Massachusetts General Hospital and an assistant professor of medicine at Harvard Medical School, both in Boston. Dr. Finn has been a member of the Society of Hospital Medicine's Annual Conference Committee for the past 8 years and is the course director for Hospital Medicine 2018 (HM18), to be held April 8-11 in Orlando.

When did you become a member of SHM, and how did you initially become involved with the Annual Conference Committee?

I was a member of the National Association of Inpatient Physicians and then became a member of SHM when the name changed. Early on, I remember attending a hospitalist conference when it was just a pre-course. It's been amazing to see how hospital medicine has grown, with the national conference now 3 days long, with its own precourses, attracting more than 5,000 hospitalists.

I became involved with the Annual Conference Committee 8 years ago because of my interest in education. Being a founding member of the SHM Boston Chapter, I gained experience planning the quarterly local chapter meetings. As a clinical educator and hospitalist, I was involved in planning conferences for faculty at my hospital. I found I really enjoyed developing educational conferences and curriculum, so when I heard about the Annual Conference Committee, I thought it would be a perfect fit.

It's been a great experience getting to know committee members from all over the country. It's always exciting to brainstorm topic ideas and think about what would interest conference attendees.

Describe your role as course director.

My job as course director is to challenge committee members to be as

creative as possible and help focus the discussion around the needs of SHM members while keeping to a schedule. With the help of Brittany Evans, SHM's Education and Meetings Project Manager, and Dustin Smith, MD, FHM, the co-course director, the committee reviewed prior conference agendas and feedback from attendees and from other SHM committees. Using that information, we discussed, brainstormed, voted on, and planned this year's clinical content talks, workshops, and many of the specialty tracks.

What are you most looking forward to at HM18?

First, the location is exciting since this is our first time in Orlando. I hope attendees use the location as a reason to bring their families and visit the theme parks.

I am also eagerly anticipating the nationally recognized speakers. We invited the best speakers we know from both subspecialty backgrounds and fellow hospitalists, and given the Orlando location, we tried to feature the best speakers from the Southeast. Finally, I am looking forward to the diversity of topics. The committee really thought broadly about relevant topics to today's practicing hospitalists.

What will be new and different for attendees at HM18?

There are many new things this year. Given the field of hospital medicine is now more than 20 years old, the committee thought it was important to focus on career development – not just for new hospitalists, but midcareer hospitalists as well. How do you make hospital medicine a lifelong, enjoyable, and engaging career? To explore and answer these questions, the Annual Conference Committee created several new tracks for HM18.

We created a Seasoning Your Career track that offers ideas on how to change your role midcareer – how to advance to a leadership position, how to use emotional intelligence to achieve success, how to prevent burnout, and, best of all, how to consider and change your hospitalist group's work schedule, which rules

our lives and our families' lives. We also added financial planning advice to help you prepare for retirement.

Another new track at HM18 is the Career Development Workshops track, which includes a diversity of workshops meant to help build leadership skills, develop presentation/communication skills, encourage peers to give each other feedback, promote women in hospital medicine, prevent burnout, and turn ideas into clinical research.

The Medical Education track also has a session on how to break into educational roles, especially if you want to expand your career into a leadership position in medical education.

We also have three other new tracks: Palliative Care, NP/PA, and The Great Debate. The Great Debate track uses the popular format of the perioperative debate given every year at the annual conference to tackle topics in infectious disease and pulmonary medicine. We ask very talented, opinionated, and humorous speakers to debate with each other over clinical content.

Other new things for HM18 include:

- An interventional radiologist will speak about the latest procedures and when to refer your patients.
- A few surgeons will talk about managing surgical patients on your service and about decubitus ulcers.
- An oncologist will discuss the complications of the latest advanced agents on the wards.
- A rheumatologist will discuss the complications of new biologic agents.
- A rehab specialist will discuss the benefits and limitations of physical/occupational therapists and psychiatrists.
- A speaker will discuss vulnerable populations, focusing on the social determinants of health.
- There will be an "Updates in Addiction Medicine" lecture.
- There will be a new cardiology precourse and an expanded infectious disease precourse, which will also focus on sepsis.

How has the committee worked to ensure the course content is refreshed and current?



“My job as course director is to challenge committee members to be as creative as possible and help focus the discussion around the needs of SHM members while keeping to a schedule.”

—Dr. Finn

The best ideas from the committee come from the group discussion and brainstorming. Someone mentions a topic, which leads someone else to add to it, and so on. Within the hour, we have some fantastic suggestions that the committee can run with. We also rely on input from SHM members: For example, many of the workshops' topics are chosen from hundreds of submissions from members; speaker and content suggestions are submitted by hospitalist leaders from around the country and thereby provide insight into current topics. Combined, these offer a richness of ideas, which allows the committee to stay up to date and refresh old ideas.

Ms. Steele is the marketing communications specialist at the Society of Hospital Medicine. For a longer version of this interview, visit www.the-hospitalist.org/hospitalist.

Building a better U.S. health care system

More community-level investments and partnerships needed

By Kelly April Tyrrell

Since 2010, when Democrats passed the Affordable Care Act – also known as Obamacare – without a single Republican vote, the GOP has vowed to repeal and replace it. With the election of Donald J. Trump in November 2016, Republicans gained control of the presidency and Congress and hoped to put Obamacare on the chopping block.

Although the Affordable Care Act's (ACA's) individual mandate was eliminated in the Tax Cuts and Jobs Act passed in late 2017, Republican leaders have been unable to secure the votes they need for a full repeal of Obamacare and a complete reboot of the American health care system. That may be, in part, because in the search for a better American health care system, there is no single right answer. In few places is that more clear than when making comparisons of health care systems across the world.

"Comparisons are fun, and everyone loves rankings," said Ashish Jha, MD, MPH, a physician with the Harvard T.H. Chan School of Public Health and director of the Harvard Global Health Institute in Cambridge, Mass. Last fall Dr. Jha published an analysis on his personal blog comparing health care in the United States with that in seven high-income nations. It was prompted by a similar side-by-side comparison he participated in with other experts for the New York Times. "The most important part is we get to ask questions about things we care about, like 'What do other countries do when they're better than us?' We're not going to adopt any country's model wholesale, but we can learn from them," he said.

For instance, just 7.4% of people in Switzerland (according to data from the Organisation for Economic Cooperation and Development) skip medical tests, treatments, or follow-ups because of costs, compared with 21.3% in the United States. Meanwhile, the United States leads in innovation, producing 57% of new drugs (according to the Milken Institute), which is more than Switzerland's 13% and Germany's 6%.

Although many Americans tend to think that health care in other developed nations is entirely single

payer or government run, systems across Europe and the rest of the globe vary immensely in how they approach health care. One thing common among high-income nations, however, is some form of universal health care. In Canada, for example, the government funds health insurance for care delivered in the private sector. In Australia, public hospitals provide free inpatient care. In France, the Ministry of Health sets prices, budgets, and funding levels.

"There are really two main purposes" when it comes to international comparisons, said Eric Schneider, MD, senior vice president for policy and research for the Commonwealth Fund. "The first is to understand how other countries perform, and the second is what lessons can we learn from the way care is financed, organized, and delivered in other nations and how we might import some of those ideas to the U.S. and improve policies here."

The Affordable Care Act, Dr. Jha said, was something of the ultimate test for applying lessons learned in other countries and those put forward over the past decades in the United States by policy experts and leaders in health care thinking.

"The Affordable Care Act includes several ideas that are prevalent in other countries, particularly around how to expand insurance coverage and how to subsidize the poor so they can have good insurance coverage, too," said Dr. Schneider. "The notion of essential health benefits, the mandate for insurance, the notion of subsidies, in some ways, these were all borrowed from abroad."

For instance, health care in The Netherlands – which, like the United States, also relies on private health insurers – ranked among the highest of other high-income countries in the world in The Commonwealth Fund's 2017 international comparison, published in July 2017. The Dutch have standardized their health benefits, reducing administrative burden for providers and making copayments more predictable for patients.

Dr. Schneider believes that the

United States should continue to build on the progress of the Affordable Care Act – particularly since more than 20 million Americans have gained insurance coverage since the passage of the law (91% of Americans are insured today). And the ACA has renewed focus in the United States on improving and strengthening primary care and changing the incentives around care delivery.

Some Democrats and Republicans in Congress have started working on bipartisan solutions to solve some of

the problems inherent in the ACA – or those engineered by those who oppose it.

"I think we have an opportunity to move forward," said Joshua Lenchus, DO, FACP, SFHM, chair of

the Society of Hospital Medicine Public Policy Committee. "I think complete repeal of the ACA is unlikely to see success. Until someone comes up with something that maintains close to the number of people insured now but changes the direction we're headed in, this is what we're stuck with."

That direction is, at least in part, a health care system with spending that continues to rank among the highest in the world. The United States spends more than 17% of its GDP on health care, compared with the 11.4% spent by Switzerland, which Dr. Jha ranked as having the best health care system among the high-income nations he evaluated. Craig Garthwaite, a conservative health economist at Northwestern University's Kellogg School of Management in Evanston, Ill., called the Swiss health care system a "better-functioning version of the Affordable Care Act" in the New York Times' head-to-head debate.

However, Dr. Lenchus noted that Switzerland's system may not be scalable to a country the size of the United States. At 8.5 million people, Switzerland's population is on par with that of New York City. The U.S. system must support more than 323 million people.

And international comparisons can be challenging for other reasons, as Dr. Jha wrote in a JAMA Viewpoint piece in August 2017 with

coauthor Irene Papanicolas, PhD, of the London School of Economics, because they must account for the limitations of data, consider different values in national systems, and define the boundaries of the health system. For instance, Dr. Schneider said, some other high-income countries also invest more in housing, nutrition, and transportation than does the United States, which reduces the detrimental impact of social determinants of health, like poverty, poor nutrition, and homelessness.

Dr. Lenchus believes better health care in the United States hinges on more community-level investments and partnerships and on more focus on the social determinants of health. "To some degree, this country should be able to leverage the resources we have at a community level to improve the health of that community's population," he said. "Hospitalists are in a prime position to do that."

Indeed, the Commonwealth Fund report concluded the United States excels on measures that involve the doctor-patient relationship – like end-of-life discussions and chronic disease management – and on preventive measures like screening mammography and adult influenza vaccination.

In a New England Journal of Medicine Perspective published in July 2017, Dr. Schneider and a coauthor outlined four strategies to improve health care in the United States, gleaned from comparisons abroad: ensure universal and adequate health insurance coverage, strengthen primary care, reduce administrative burden, and reduce income-related disparities.

Regardless of how the United States goes about achieving a better health care system, Dr. Jha said we should stop the partisan rhetoric.

"Where I find a lot of consensus is we should have more competition and less monopoly," he said. "Liberals and conservatives should be able to get together and say: We are really going to have competitive markets, and we should see the prices of health care services fall; we should see premiums come down, and it would make the coverage problem a lot easier to solve."

For a complete list of references, see the online version of this article at www.the-hospitalist.org/hospitalist.



Dr. Jha



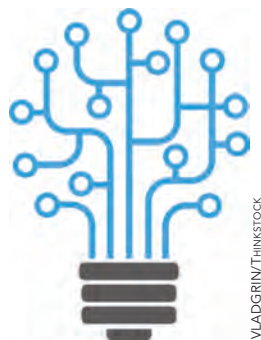
Dr. Lenchus

Measuring high-value care practices

Tool addresses important educational gap

Because health care in the United States is extremely expensive, it's driving an increased focus on high-value care (HVC), said Carolyn D. Sy, MD. And, she added, while hospitalists and other physicians are the ones responsible for translating HVC from formalized settings (lectures, modules, etc.) to the bedside, there are few instruments designed to measure the success of HVC practices.

So Dr. Sy, director of the University of Washington Medical Center Hospital Medicine Service in Seattle and her colleagues developed an HVC Rounding Tool, which allows users to empirically assess the discussion of HVC topics at the bedside. They divided 10 HVC topics into three domains (quality, cost, patient values) to create an



VLADGRIN/THINKSTOCK

observational tool and tested its validity.

"It addresses an important educational gap in translating HVC from theoretical knowledge to bedside practice," she said.

The tool is designed to capture multidisciplinary participation: involvement from faculty, fellows or trainees, nurses, pharmacists, families, and other members of the health care team.

It has multidisciplinary benefits too. "The HVC

Rounding Tool provides an opportunity for faculty development through peer observation and feedback on the integration and role modeling of HVC at the bedside," Dr. Sy said. "It also is an instrument to help assess the educational efficacy of formal HVC curriculum and translation into bedside practice. Lastly, it is a tool that could be used to measure the relationship between HVC behaviors and actual patient outcomes, such as length of stay, readmissions, and cost of hospitalization – a feature with increasing importance given our move towards value-based health care."

Reference

Sy CD et al. The development and validation of a high-value care rounding tool using the Delphi method. *J Hosp Med.* 2017;12(suppl 2). Accessed Oct 10, 2017.

New tool improves hand-off communications

Transitions carry a certain amount of risk

Transitions of care can be rife with communications issues – and subsequent adverse events. They are also a place where hospitalists can take the lead in making improvements.

"They are the team leaders, typically," said Ana Pujols McKee, MD, the executive vice president and chief medical officer for The Joint Commission. "The hospitalist really owns this process of the transfer of this accurate information."

To help, The Joint Commission has issued a new Sentinel Event Alert, which provides seven recommendations to improve the communication failures that can occur when patients are transitioned from one caregiver to another, as well as a Targeted

Solutions Tool to put the recommendations into action.

"Every organization is challenged in communicating accurate and timely information regarding patients," Dr. McKee said. "One of the riskiest transitions that patients go through is when they change levels of care from ICU to med-surg, or from the ER to ICU, OR to ICU, med-surg to home, and home to home care. All of those transitions inherently carry a certain amount of risk and are deeply reliant on the transfer of the right information at the right time to the right person."

These resources reflect what The Joint Commission has found: "The knowledge that we now have is that one of the defects that occurs in this transitioning is that – I'll

speak of sender and receiver – the information that is sent is always sent from the perspective of what the sender thinks is important, not the information the receiver needs to manage that patient safely."

The tool uses the principles of Lean Six Sigma and change management, and organizations can use it to identify their opportunities for improvement and develop strategies to address their specific root causes in their organization.

"It's a self-guided tool," Dr. McKee said. "Organizations have reduced errors significantly in using this tool. I think if the hospitalist community takes this on, that would really help transform how we do transitions of care."



MUTSMA/THINKSTOCK

Hospital boards can promote quality improvement

Hospital boards play an important role in quality improvement (QI), and now researchers in England have developed a framework they can use to help develop their QI capability by comparing 15 health care organizations.

"We already know that certain board practices are associated with higher quality care," said lead researcher Lorelei Jones, PhD. "For example, hospital boards that regularly review quality performance have better patient outcomes. But we don't know a lot about what boards actually do, or what 'good' looks like in relation to quality governance. There is a lot of guidance for boards on what they should be doing, but very little research evidence."

In their study, researchers developed an evidence-based measure of QI "maturity" – how developed boards were in how they led and oversaw quality improvement. They applied this measure to various organizations and then looked at the characteristics of organizations that showed a highly developed approach to QI.

"Organizations with higher levels of QI maturity prioritized QI; balanced attention to short-term (external) priorities with a long-term (internal) investment in QI; used data for quality improvement, not just quality assurance; engaged staff and patients in QI; and had a culture of continuous improvement," Dr. Jones said. These characteristics often seemed to be facilitated by clinical leaders; the study also highlighted the importance of board-level clinical leaders in hospitals, she said.

Researchers found that organizations with a highly developed approach to QI did the following:

- Brought in-depth knowledge and understanding of quality issues and provided the board with meaningful analyses of data.
 - Contributed knowledge of relevant developments in national policy and links to external networks.
 - Played an important role as "boundary spanners," providing a link between "the board and the ward," making connections between sources of data and aligning external demands with internal priorities.
- "Boards can use our framework to help develop their QI capability," Dr. Jones said. "For example, boards can use it to do a gap analysis to explore areas that might need strengthening and for ideas on how they could do this."

Reference

Jones L et al. How do hospital boards govern for quality improvement? A mixed methods study of 15 organisations in England. *BMJ Qual Saf.* 2017 Dec;26(12):978-86.

Making structural improvements in health care

Every day, hospitalists devote time and energy to the best practices that can limit the spread of infection and the development of antibiotic resistance. Infection prevention (IP) and antimicrobial stewardship programs (ASP) are two hospital programs that address that same goal.

But there may be a more effective approach possible, according to Jerome A. Leis, MD, MSc, FRCPC, of the Centre for Quality Improvement and Patient Safety at the University of Toronto.

"Despite the high-quality evidence supporting these IP/ASP interventions, our approach to adding these to our current practice sometimes feels like adding scaffolding to a rickety building," he said. "It supports the underlying structure, but remove the scaffolding without fixing the building, and it may just come tumbling down." Sometimes the work seems like

an uphill battle, he added, as the same problems continue to recur.

That's because there's a systemic element to the problems. "Hospitalists know first hand about how the system that we work in makes it difficult to ensure that all the best IP/ASP practices are adhered to all the time," Dr. Leis said. "Simply reminding staff to remove a urinary catheter in a timely fashion or clean their hands every single time they touch a patient or the environment can only get us so far." That's where improvement science comes in.

The relatively new field of improvement science provides a framework for research focused on health care improvement; its goal is to determine which improvement strategies are most effective. Dr. Leis argued that, "when our approach to IP and ASP incorporate principles of improvement science, we are more likely to be successful in

achieving sustainable changes in practice."

Rather than constantly adding extra steps and reminders for hospitalists about patient safety, he said, we need to recognize that there are systemic factors that lead to specific practices. "Our focus should be to use improvement-science methodology to understand these barriers and redesign the processes of care in a way that makes it easier for hospitalists to adhere to the best IP/ASP practices for our patients."

These structural changes should come from collaboration among content experts in IP/ASP and those with training in improvement science, he said – many IP and ASP programs are already putting this in practice, using improvement science to create safer systems of care.

Reference

Leis J. Advancing infection prevention and antimicrobial stewardship through improvement science. *BMJ Qual Saf*. 2017 Jun 14. doi: 10.1136/bmjqs-2017-006793.

Quick Byte

U.S. health care can still innovate

"The United States health care system has many problems, but it also promotes more innovation than its counterparts in other nations. ... It has more clinical trials than any other country. It has the most Nobel laureates in physiology or medicine. It has won more patents. At least one publication ranks it No. 1 in overall scientific innovation. ... The nation's innovation advantage arises from a first-class research university system, along with robust intellectual property laws and significant public and private investment in research and development. Perhaps most important, this country offers a large market in which patients, organizations, and government spend a lot on health and companies are able to profit greatly from health care innovation."

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Key Clinical Question

How should electrolyte abnormalities be managed in patients with chronic kidney disease?

Early intervention and management can have a significant effect

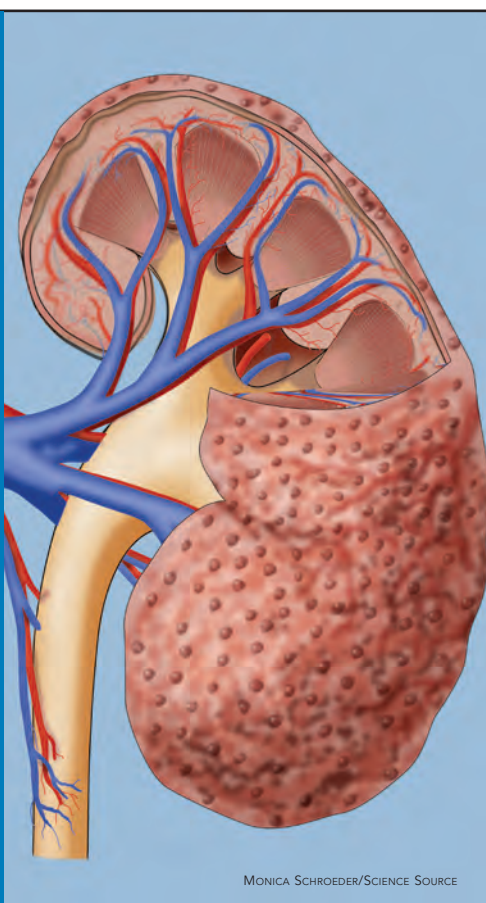
By Sneha Daya, MD; Sarah Apgar, MD; and Archana Eniasivam, MD

Division of Hospital Medicine at the University of California, San Francisco

Clinical Case

A 55-year-old woman with diabetes, hypertension, and chronic kidney disease (CKD) stage 4 is admitted to the hospital for treatment of left lower-extremity cellulitis. Laboratory studies on admission show a creatinine level of 2.5 mg/dL (glomerular filtration rate [GFR] is 20 mL/min per 1.73 m²; baseline creatinine is between 2.2 and 2.6 mg/dL), potassium level of 3.0 mEq/L, magnesium level of 1.5 mEq/L, bicarbonate level of 18 mEq/L, phosphate level of 6.5 mg/dL, and calcium level of 7.5 mg/dL.

She is put on renally dosed vancomycin to treat her cellulitis. As the hospitalist, how should you manage her multiple electrolyte abnormalities?



MONICA SCHROEDER/SCIENCE SOURCE

Overview of the issue

Chronic kidney disease is progressively becoming a common disease, already affecting an estimated 15% of the U.S. adult population. Although CKD is traditionally viewed as an outpatient issue, it is an increasingly documented problem in the hospital setting. This is reflected in the fact that, as CKD advances, rates of admissions increase.

CKD is also an important risk factor for acute kidney injury. Additionally, rates of readmission for CKD patients are higher than those without CKD. Given that CKD is a "silent disease" that many patients do not realize they have, it is very possible that the first documentation of CKD could happen during an acute hospitalization.

Among the various manifestations of CKD, electrolyte abnormalities are the most likely ones hospitalists will run into.

Overview of the data

Hypokalemia and hypomagnesemia

Hypokalemia (potassium levels less than 3.5 mEq/L) is not as common as hyperkalemia (potassium levels greater than 5.0 mEq/L) in CKD, which is the result of impaired renal excretion of potassium. Hypokalemia can occur as a result of GI losses, urinary losses, or decreased intake and can be worsened by the use of certain drugs, such as non-K-sparing diuretics.

In the setting of diuretic use involving thiazides and loop diuretics, hypokalemia is dose and sodium-intake dependent. Potassium deficiency worsens the effects of detrimental sodium excess, which plays a role in hypertension and its associated complications. Potassium also has a protective vascular effect, which is a major reason why potassium should be kept normal in patients with CKD.

Acutely, hypokalemia can cause

arrhythmias, ileus, and paralysis, which are all indications for immediate repletion. In these cases, hypokalemia must be repleted carefully in small increments (some suggest 20-mEq doses), and the patient must be monitored frequently to avoid hyperkalemia. If patients are persistently hypokalemic, several options can be considered based on the underlying cause. Dietary modifications with foods rich in potassium (containing 250 mg/100 g) can be suggested. Daily potassium chloride supplementation can be used in those on diuretic therapy who have hypokalemia and metabolic alkalosis (bicarbonate levels greater than 30 mEq/L). Alkalinizing salts, containing citrate or bicarbonate, can be used in hypokalemia without metabolic alkalosis. Initiation of angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs), beta-adrenergic blockers, and K-sparing diuretics can be used as well.

Potassium supplementation and K-sparing diuretics should be used with extreme caution in CKD stages 3 and 4 given the risk of overcorrection. If potassium supplements or drugs to raise serum potassium are initiated in house, potassium should be rechecked within a week. These treatments should be avoided in individuals with diabetes, who are at highest risk for hyperkalemia given hyporeninemic hypoaldosteronism (type IV renal tubular acidosis).

Hypomagnesemia (magnesium levels less than 1.8 mEq/L) is also a common occurrence with diuretic therapy. Urinary magnesium losses parallel those of potassium in loop-diuretic treated CKD patients, so deficiency in total body magnesium is likely in most diuretic-treated



Dr. Apgar



Key Points

- Identify and treat underlying causes of hypokalemia and hypomagnesemia.
- Do not hesitate to treat metabolic acidosis in CKD.
- Manage hyperphosphatemia and hypocalcemia by ordering appropriate lab studies and providing nutritional consultation with outpatient nephrology follow-up as indicated.

ed patients with hypokalemia. Additionally, hypomagnesemia increases tubular secretion of potassium, causing hypokalemia.

There is emerging evidence that hypomagnesemia can play a part in progression to end-stage renal disease. In the setting of cardiovascular disease, which often co-exists with CKD, the risk of hypomagnesemia precipitating arrhythmia necessitates repletion to a normal level. Any of the magnesium salts and antacids can be used for treatment. K-sparing diuretics are also magnesium sparing. An important side effect of magnesium repletion is diarrhea, which can potentiate electrolyte losses and reduce long-term adherence rates.

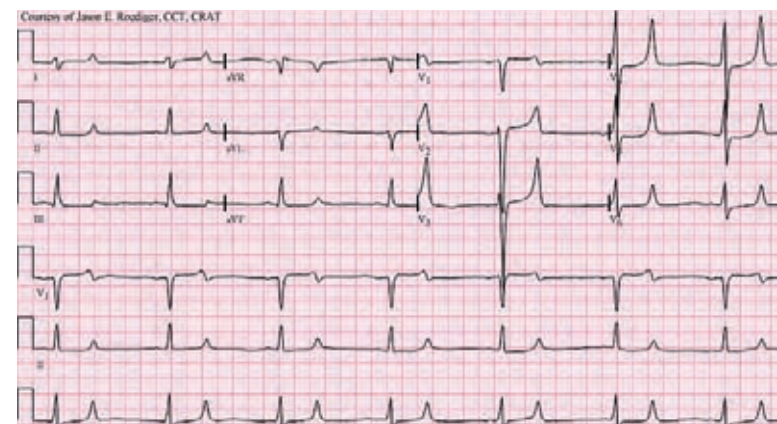
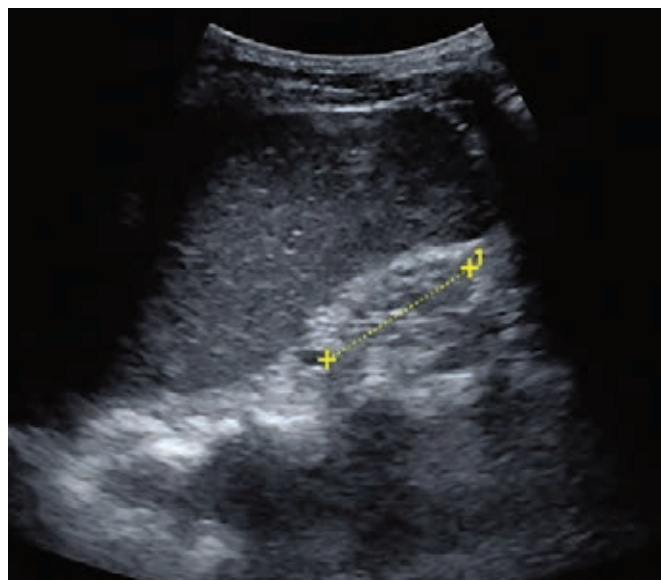
Metabolic acidosis

Acid-base balance is maintained by the kidney through urinary excretion of hydrogen ions both as titratable acids and ammonium. In CKD, renal excretion of the daily acid load is impaired, primarily from decreased ammonium excretion caused by there being too few functioning nephrons.

Metabolic acidosis in CKD is defined as a serum bicarbonate concentration of persistently less than 22 mEq/L. The overall prevalence of metabolic acidosis in cases of CKD that don't require dialysis is about 15% and increases linearly with a decline in GFR. In the Chronic Renal Insufficiency Cohort study, 7%, 13%, and 37% of participants with CKD

End-stage chronic kidney disease with increased echogenicity, homogenous architecture without visible differentiation between parenchyma and renal sinus, and reduced kidney size: Measurement of kidney length on the US image is illustrated by "+" and a dashed line.

KRISTOFFER LINDSKOV HANSEN, MICHAEL BACHMANN NIELSEN AND CAROLINE EWERTSEN, "ULTRASONOGRAPHY OF THE KIDNEY: A PICTORIAL REVIEW". *DIAGNOSTICS* 6 (1): 2. DOI: 10.3390/diagnostics6010002. ISSN 2075-4418. CC BY-SA 4.0



A 12-lead ECG of a person with CKD and a severe electrolyte imbalance: hyperkalemia (7.4 mmol/L) with hypocalcemia (1.6 mmol/L) is shown. The T waves are peaked, and the QT interval is prolonged.

Jer5150 / Wikimedia Commons / CC BY-SA 3.0

stages 2, 3, and 4, respectively, had metabolic acidosis.

Metabolic acidosis has a variety of adverse outcomes, including bone demineralization, increased protein catabolism and muscle wasting, impaired cardiac function, impaired glucose homeostasis, and systemic inflammation. Additionally, multiple studies have shown an association

between metabolic acidosis and progression of CKD and increased mortality.



Dr. Daya

The 2013 Kidney Disease Improving Global Outcomes (KDIGO) guidelines recommend

maintaining the serum bicarbonate level within the reference range (23-29 mEq/L) with alkali therapy. Options include sodium bicarbonate or sodium citrate (which is rapidly metabolized to bicarbonate) in doses of 0.5-1.0 mEq/kg once per day. Sodium bicarbonate is inexpensive; however, it can lead to gastrointestinal upset as the bicarbonate is converted into CO₂ in the stomach. This side effect is usually self-limited and improves with time. Typical starting doses are 650 mg twice a day if the serum bicarbonate level is 19-21 mEq/L or 1,300 mg twice a day if the serum bicarbonate level

is less than or equal to 18 mEq/L.

Sodium citrate can be used if gastrointestinal upset occurs, although caution should be used in those on aluminum binders or with liver disease. Alkali treatment should be started when bicarbonate levels are persistently low (for weeks or months) or if very low (less than or equal to 18 mEq/L) without an acute reversible cause. After patients have begun therapy, they should be monitored for the development of worsening hypertension or edema caused by sodium-mediated fluid retention, although this rarely occurs.

Hyperphosphatemia and hypocalcemia

Hyperphosphatemia (phosphate levels greater than 4.6 mg/dL) develops early in CKD because of a reduced filtered-phosphate load. Hypocalcemia and hyperphosphatemia can lead to secondary hyperparathyroidism. Given that hyperphosphatemia has been associated with an increased mortality among patients with CKD, treatment is warranted, but the optimal phosphorus range is unknown. According to the KDIGO guidelines, the goal phosphorus level is less than 4.5 mg/dL in patients with CKD who are not on dialysis.

Treatment includes dietary restriction to 900 mg/day and phosphate binders. There is a high phosphate load in processed foods and colas because of food additives. It is therefore recommended to reduce consumption of these foods while encouraging consumption of meat and eggs, which offer additional nutritional value. Those who have failed dietary restrictions should be put on a phosphate binder, either calcium containing (calcium carbonate, calcium acetate) or non-calcium containing (Sevelamer, lanthanum). Non-calcium-containing binders are recommended for patients with

hypercalcemia (levels greater than 9.5 mg/dL). There are some data that suggests that non-calcium-containing binders are superior to calcium-containing binders in terms of vascular disease outcomes, but non-calcium-containing binders are sometimes difficult to obtain because of cost and insurance coverage.

Hypocalcemia (calcium levels below 8.4 mg/dL) occurs in the setting of late-stage untreated CKD because of decreased GI uptake of calcium from diet in the context of vitamin D deficiency (less than 30 ng/mL)

in addition to hyperphosphatemia. Phosphate and vitamin D correction is preferred to calcium supplementation because hyperphosphatemia and vitamin D deficiency occur earlier in CKD. Phosphate reduction is described above.

As for vitamin D deficiency, it is recommended to start supplementation with either vitamin D₂ or D₃. Doses should be adjusted if GFR is less than 30 mL/min per 1.73 m². It is important to monitor for hypercalcemia, which can also occur in CKD

Continued on following page

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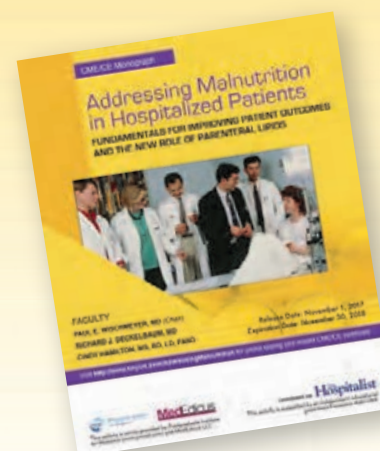
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Additional Reading

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- Raphael KL. Approach to the treatment of chronic metabolic acidosis in CKD. *Am J Kidney Dis.* 2016 Apr;67(4):696-702.

Continued from previous page

in this context, because it has also been associated with increased morbidity and mortality. If calcium levels are greater than 10.2 mg/dL, all vitamin D supplementation should be discontinued.

Back to the case

Our patient who was admitted for cellulitis has concomitant hypokalemia, hypomagnesemia, acidosis, and hyperphosphatemia with related hypocalcemia. She revealed that her diet was poor prior to her admission for her infection. She was given 20 mEq of potassium orally and placed on a potassium-rich diet until potassium levels normalized. She was also given magnesium oxide orally on the first and second day of admission, with repeat levels that were normal. Her acidosis was treated with sodium bicarbonate – 1,300 mg orally twice daily. For her hyperphosphatemia and hypocalcemia, she was placed on phosphate restriction with nutritional counseling with plans to follow up as an outpatient to determine need for phosphate binders. In addition, vitamin D levels were checked, and she was started on repletion for vitamin D deficiency (27 ng/mL). Daily BMP, magnesium, and phosphorus were checked while in house until they were normal for 2 days, and follow-up lab work was requested with her nephrology appointment, which was scheduled for within 1 week.

Bottom line

Electrolyte abnormalities in CKD are numerous and have multiple adverse clinical outcomes.

Early intervention and management, especially of metabolic acidosis and hyperphosphatemia, can have a significant effect, including prevention of progression of CKD and possibly reduced mortality.

Dr. Daya, Dr. Apgar, and Dr. Eniasivam are assistant clinical professors in the division of hospital medicine at the University of California, San Francisco.

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Quiz



A 75-year-old male with hypertension and CKD stage 4 is admitted to the hospital for a hip fracture following a fall. Laboratory studies on admission show a potassium level of 3.2 mEq/L, vitamin D level of 45 ng/mL, bicarbonate level of 17 mEq/L, phosphate level of 5.0 mg/dL, and calcium level of 10.3 mg/dL. What electrolyte replacements should be initiated?

- Dietary restriction of phosphate, sodium bicarbonate, potassium chloride, and vitamin D.
- Non-calcium-containing phosphate binder, vitamin D, and potassium chloride.
- Calcium-containing phosphate binder and sodium bicarbonate.
- Non-calcium-containing phosphate binder, sodium bicarbonate, and potassium chloride.

Answer: D. Given the patient's hypokalemia, potassium supplementation should be considered. Additionally, given his hyperphosphatemia and hypercalcemia, a non-calcium-containing phosphate binder like Sevelamer should be started. His metabolic acidosis should be corrected with sodium bicarbonate. There is no indication to supplement vitamin D based on his current lab values.



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Heart failure readmissions penalties linked with rise in deaths

CMS must “revamp the program” to mitigate damage

By **Mitchel L. Zoler**
Frontline Medical News

THE AHA SCIENTIFIC SESSIONS / ANAHEIM, CALIF. / Evidence continues to mount that Medicare's penalization of hospitals with excess heart failure readmissions has cut readmissions but at the apparent price of more deaths.

During the penalty phase of the Hospital Readmission Reduction Program (HRRP), which started in October 2012, 30-day all-cause mortality following a heart failure hospitalization was 18% higher compared with the adjusted rate during 2006-2010, based on Medicare data from 2006 to 2014 that underwent “extensive” risk adjustment using prospectively-collected clinical data, Gregg C. Fonarow, MD, and his associates reported in a poster at the American Heart Association scientific sessions. During the same 2012-2014 period with imposed penalties, 30-day all-cause readmissions following an index heart failure hospitalization fell by a risk-adjusted

9% compared to the era just before the HRRP. Both the drop in readmissions and rise in deaths were statistically significant.

A similar pattern existed for the risk-adjusted readmissions and mortality rates during the year following the index hospitalization: readmissions fell by 8% compared with the time before the program but deaths rose by a relative 10%, also statistically significant differences.

“This is urgent and alarming. The Centers for Medicare & Medicaid Services needs to revamp the program to exclude heart failure patients and take steps to mitigate the damage,” Dr. Fonarow said in an interview. He estimated that the uptick in mortality following heart failure hospitalizations is causing 5,000-10,000 excess annual deaths among U.S. heart failure patients that are directly attributable to the HRRP. Similar effects have not been seen for patients with an index hospitalization of pneumonia or acute MI, two other targets of the HRRP, he noted.

The HRRP “currently has penalties for readmissions that are 15-fold higher than for mortality. They need to penalize equally, and they need to get at the gaming that hospitals are doing” to shift outcomes away from readmissions even if it means more patients will die. Heart failure patients “who need hospitalization are being denied admission by hospitals out of fear of the readmissions penalty,” said Dr. Fonarow, professor and co-chief of cardiology at the University of California, Los Angeles. “Seeing increased mortality linked with implementation of the penalty is completely unacceptable.”

Although a prior report used similar Medicare data from 2008 to 2014 to initially find this inverse association, that analysis relied entirely on administrative data collected in Medicare records to perform risk adjustments (JAMA. 2017 Jul 17;318[3]:270-8). The new analysis reported by Dr. Fonarow and his associates combined the Medicare data with detailed clinical records for the same patients collected by the Get With the Guidelines-Heart Failure program. The extensive clinical data that the researchers



Dr. Gregg C. Fonarow said the uptick in mortality following heart failure hospitalizations is causing 5,000-10,000 excess annual deaths among U.S. heart failure patients that are directly attributable to the HRRP.

used for risk-adjustment allowed for a more reliable attribution to the HRRP of readmission and mortality differences between the two time periods. Despite the extensive risk adjustment “we see exactly the same result” as initially reported, Dr. Fonarow said.

The findings “remind us that it is very important to look at the unintended consequences” of interventions that might initially seem reasonable, commented Lynne Warner Stevenson, MD, professor and director of cardiomyopathy at Vanderbilt University in Nashville, Tenn.

Concurrent with the presentation at the meeting the results also appeared in an article published online (JAMA Cardiol. 2017 Nov 12. doi: 10.1001/jamacardio.2017.4265).

A separate analysis of data collected in the Get With the Guidelines-Heart Failure during 2005-2009 showed that within the past decade the 5-year survival of U.S. hospitalized heart failure patients has remained dismally low, and similar regardless of whether patients had heart failure with reduced ejection fraction (HFrEF, 46% of all heart failure patients in the analysis), heart failure with preserved ejection fraction (HFpEF, also 46% of patients), or the in-between patients who had heart failure with borderline ejection fraction (HFbEF, an ejection

fraction of 41%-49%, in 8% of patients).

The results, from 39,982 patients, showed a 75% mortality rate during 5 years of follow-up, with similar mortality rates regardless of the patient's ejection-fraction level, reported Dr. Fonarow and his associates in a separate poster. In every age group examined, patients with heart failure had dramatically reduced life expectancies compared with the general population. For example, among heart failure patients aged 65-69 years in the study, median survival was less than 4 years compared with a 19-year expected median survival for people in the general U.S. population in the same age range.

These very low survival rates of heart failure patients initially hospitalized for heart failure during the relatively recent era of 2005-2009 “is a call to action to prevent heart failure,” said Dr. Fonarow.

The poor prognosis most heart failure patients face should also spur aggressive treatment of HFrEF patients with all proven treatments, Dr. Fonarow said. It should also spur more effort to find effective treatments for HFpEF, which currently has no clearly proven effective treatment.

These results also appeared in a report simultaneously published online (J Amer Coll Cardiol. 2017 Nov 12. doi: 10.1016/j.jacc.2017.08.074).



Dr. Lynne Warner Stevenson said it is important to look at the unintended consequences of interventions that might initially seem reasonable.

Transgender care

Continued from page 1

layers of complexity, experts say. For instance, how should a physician address a patient? The initial encounter can have a huge impact on the clinician's ability to earn the patient's trust, and sets the tone for the entire hospital stay. Which bathroom should a transgender patient use? What unique family issues must clinicians be aware of? Transgender patients may be more likely to have simmering tensions with immediate and extended family, and may not want certain family members involved in medical decisions.

Physicians and nurses must be aware of these issues to create a welcoming and logistically sound environment, said Nicole Rosendale, MD, a neurohospitalist at the University of California San Francisco who has a special interest in LGBT care.

"As a hospitalist, it's your job to care for LGBT inpatients appropriately, to very quickly build rapport, and to build trust and understanding so that you can deliver the best care that you can for each person," Dr. Rosendale said.

Dr. Ng noted that even the information technology clinicians rely upon may not be optimized for transgender patients. For instance, he said electronic health records may pose problems if they haven't been adapted to include the necessary gender identity options or preferred names and pronouns.

"Most electronic health records are binary driven," Dr. Ng said. "Our transgender patients turn that model on its head. We have had to create many additional workarounds."

Need for more training

Hospitalists will increasingly find themselves caring for transgender patients, as more people openly claim a gender identity outside the traditional gender categories. A recent study in the United Kingdom found that 20%-25% of people under 25 did not identify as heterosexual, or considered themselves as having a personal gender identity that did not correspond with the sex assigned at birth, Dr. Ng said.

The resources available for training clinicians in caring for transgender patients is expanding, and both trainees and veteran clinicians can find educational programs tailored to their needs, although they might have to seek them out, Dr. Ng said.

Unfortunately, most medical schools do not as yet offer targeted training in transgender care, or even LGBT care more broadly, said Vin

Tangpricha, MD, PhD, president elect of the World Professional Association for Transgender Health (WPATH).

"The biggest gap is training in medical school and residency," Dr. Tangpricha said. "Only one out of three medical schools have any transgender curriculum taught to students. Physicians lack knowledge on the diagnosis of gender dysphoria and the hormone regimens that are commonly used. Also, physicians don't feel comfortable speaking to transgender patients because they lack experience working with this population."

Training in caring for transgender patients and other segments of the LGBT patient population is available through WPATH, the Fenway Institute in Boston, and GLMA, formerly known as the Gay & Lesbian Medical Association, as well some other organizations, Dr. Tangpricha said.

Dr. Rosendale took training into her own hands. She saw gaps in the curriculum, and started LGBT train-

"As a hospitalist, it's your job to care for LGBT inpatients appropriately, to very quickly build rapport, and to build trust and understanding so that you can deliver the best care that you can for each person."

—Dr. Rosendale

ing programs at New York University, where she went to medical school, and at UCSF, where she completed her neurology residency and neurohospitalist fellowship.

The curriculum, which was blended with diversity training at UCSF, involved basic concepts such as terminology, the difference between gender identity and sexual orientation, communication tips, and discussions of the health care experience from the LGBT patient perspective. Even a relatively small amount of training can go a long way, she said.

"When I work with trainees now who have heard some of the lectures and have gone through some of the training, their fluency and their comfort with the terminology, with the concepts that are used within the LGBT community, is much better than it was before," Dr. Rosendale said.

Demonstrating the importance of training to those in charge of curric-



Dr. Imborek

ulum decisions is the most important step for anyone interested in adding instruction for transgender care at their centers, she said.

Katie Imborek, MD, cofounder of the University of Iowa LGBTQ Clinic, has worked with hospitalists on improving their care for transgender patients. She and internist Nicole Nisly, MD, opened the clinic when a need became apparent.

Before the University of Iowa clinic opened, a transgender advocacy group hosted a forum on LGBT health care, at which patients shared stories of frustration. One patient related a story about calling a department at the university, only to be told, "We don't take care of people like you." In another frustrating case, a transgender man had been having vaginal bleeding and called the obstetrics department seeking help. He was repeatedly told he was calling the wrong place. During a white board exercise at the forum, one patient drew buildings representing the university health care system surrounded by barbed wire, symbolizing an off-putting atmosphere in the emergency department that was rife with misgendering of patients.

The Iowa clinic, which has been operating on Tuesday nights since 2012, has seen more than 600 patients, with 80% coming from outside the county in which the clinic is located.

"Many providers feel like they haven't had the appropriate training to provide medically competent care for transgender patients – including cross-sex hormones, referrals, and care coordination to ensure patients receive the mental health care, medications, and procedures needed to treat their gender dysphoria," Dr. Imborek said.

Despite the knowledge gaps, a shift is definitely underway, she said. Dr. Tangpricha concurred, noting that the interest in WPATH's training programs has increased dramatically.

"In the past, there was a CME program on transgender medicine every 2 years. Now we have courses every 3-4 months, and we still can't keep up with the demand. Employers and hospital systems are adopting transgender medicine as a covered benefit which has driven the need for physician education."

How to say hello

How a clinician greets a patient is a crucial part of LGBT patient interaction, experts say. Labeling a patient incorrectly can sour the experience from the start.

Henry Ng, MD, MPH, said he often opens with a version of this: "Hi, my name is Dr. Ng. It's nice to meet you today. I use the pronouns 'he, him' – how can I help you?"

"What I've done is stated what my pronouns are. If my patients have pronouns that they want to use, they can relay them at that moment. If they're contemplating gender issues and they weren't sure if they were going to raise them with me, now they know that I'm at least gender aware and I'm willing to talk about things to some degree, because I've stated what my pronoun is."

Another suggestion is that clinicians wear buttons or stickers indicating their preferred pronouns. Some providers include their pronouns at the end of e-mails as well.

Experts say the importance of addressing patients accurately cannot be overstated, but that the hospital administrative system, particularly the electronic medical record, can hobble physician efforts.

"How do we know not to call people by their birth name if we have nowhere to put their preferred name?" said Katie Imborek, MD, of the University of Iowa LGBTQ Clinic. "We live in an era where we are constrained by the electronic medical record. And in many aspects, these EMRs are not completely gender inclusive."

Records must be adapted to include patient preferred names, Dr. Imborek said. A matter as simple as the label for a tube used by the lab can have big effects, since the lab tech knows what to call people based on what prints out on the label, she said.

"That's how they call people from the waiting room," Dr. Imborek said. "We must have the preferred name on the sticker or else we're going to use the wrong name."

ARDS incidence is declining. Is it a preventable syndrome?

Improvements in hospital practices may be key

By **Debra L. Beck**
Frontline Medical News

AT CHEST 2017 / TORONTO / The incidence of acute respiratory distress syndrome (ARDS) is on the decline, according to a retrospective, population-based cohort study conducted at the Mayo Clinic in Rochester, Minn.

"These are very promising data in combating this syndrome," reported Augustin Joseph of the Mayo Clinic. "It suggests that ARDS may in part be a completely preventable disease."

This study was inspired by a previous effort by Guangxi Li et al. who conducted a population-based cohort study on trends in ARDS using data from the Olmsted County (Minn.) Epidemiology Project from 2001 to 2008 (Am J Respir Crit Care Med. 2011;183:59-66). At that time, a steady and significant decline in ARDS incidence was noted, attributable to a reduced incidence of hos-

pital-acquired ARDS. "We attributed this to improvements in hospital practices and management of ARDS and all the research that's been done over the past 2 decades," Mr. Joseph said at the CHEST annual meeting.

To see if ARDS incidence has continued to decline, Mr. Joseph's group studied all patients admitted during 2009-2014 to the Mayo Clinic's ICU, the only facility in the county that cares for ARDS patients. From 82,388 ICU admissions, they identified 505 patients with ARDS according to the Berlin definition of ARDS developed in 2012.

The number of annual cases dropped from 108 in 2009 to 59 in 2014, and the incidence steadily declined from 74.5 cases per 100,000 in 2009 to 39.3 per 100,000 in 2014.

Median age was 67 years in 2009 and 62 years in 2014. Hospital mortality ranged from 15% to 26% during the study period, while hospital length of stay ranged from 8 to 15

days, with no clear decline in either.

"For hospital and ICU mortality and hospital and ICU length of stay, we did not see much difference [from 2009 to 2014], so the overall picture between the Guangxi Li study and mine was that we did not see much of a difference in the patients who had ARDS, but [in terms of] preventing ARDS, the incidence has continued to decline," Mr. Joseph said.

While the earlier study used the American-European Consensus Conference (AECC) definition of ARDS, Mr. Joseph and his colleagues diagnosed ARDS according to the Berlin definition. One of the major changes seen in the new Berlin rules is that acute lung injury no longer exists and patients with a P/F ratio ($\text{PaO}_2/\text{FiO}_2$ ratio, or the ratio of arterial oxygen partial pressure to fractional inspired oxygen) between 200 and 300 are now considered to have "mild ARDS," Mr. Joseph explained. With the AECC definition, a P/F



Augustin Joseph of the Mayo Clinic said that ARDS may in part be a completely preventable disease.

ratio in this range was classified as acute lung injury and only one less than 200 was considered ARDS.

The researchers are now trying to parse out how changing ARDS diagnosis and management at their institution might be contributing to declining incidence.

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ITL: Physician reviews of HM-centric research

By Joanna M. Bonsall, MD, PHD, SFHM; Yelena Burklin, MD; Karen Clarke, MD, MS, MPH, FACP, FHM; James S. Kim, MD; Noble Maleque, MD, FHM, FACP; Christopher M. O'Donnell, MD, FHM; Willie H. Smith Jr., MD; Michele Sundar, MD

Division of Hospital Medicine, Emory University School of Medicine, Atlanta

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By Joanna M. Bonsall, MD, PHD, SFHM

1 New IDSA guidelines for managing infectious diarrhea

CLINICAL QUESTION: What is the best management of acute or persistent infectious diarrhea in adults and children?

BACKGROUND: The last set of guidelines from the Infectious Diseases Society of America (IDSA) regarding acute or persistent infectious diarrhea in adults and children was published in 2001. This provides a comprehensive evidence-based update.

STUDY DESIGN: Multistep, weighted systematic literature review.

SETTING: Expert panel assembled by IDSA.

SYNOPSIS: A panel of experts convened by IDSA reviewed studies through December 2013, focusing on acute or persistent infectious diarrhea in infants, children, adolescents, and adults in the United States. Using GRADE criteria, the panel generated 60 recommendations. Recommendations of interest

to hospitalists include those for testing and treating acute diarrhea. Testing stool for bacterial pathogens is recommended for patients with diarrhea and fever, bloody or mucoid stools, severe abdominal cramping or tenderness, or sepsis (additional testing is recommended in immunocompromised patients). Blood cultures are recommended for those who are less than 3 months of age, septic, or at risk for enteric fever. Antibiotics are not recommended for immunocompetent adults or children with either watery or bloody diarrhea, unless sepsis is present or the patient is less than 3 months of age with a presumed bacterial etiology in the latter. Recommendations regarding *Clostridium difficile* infections are not included in these guidelines.

BOTTOM LINE: These updated guidelines provide evidence-based recom-



Dr. Bonsall

mendations for the management of acute or persistent diarrhea in infants, children, adolescents, and adults.

CITATION: Shane AL et al. 2017 Infectious Diseases Society of America clinical practice guidelines for the diagnosis and management of infectious diarrhea. Clin Infect Dis. 2017 Nov 29; 65(12):1963-73. doi: 10.1093/cid/cix959.

Dr. Bonsall is associate professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By Yelena Burklin, MD

2 A SNF-based enhanced care program may help reduce 30-day readmissions

CLINICAL QUESTION: Does introduction of an Enhanced Care Program affect 30-day readmissions of patients discharged from an acute care hospital to a skilled nursing facility (SNF)?

BACKGROUND: The acuity of many patients recently discharged from an acute care facility is high. Some of these patients are being transferred to a SNF upon hospital discharge. Currently existing SNF care systems may not be prepared sufficiently for the challenges that arise with the admission of such patients to the SNFs after hospital discharge, resulting in readmissions.

STUDY DESIGN: Observational, retrospective cohort analysis.

SETTING: Collaborative effort among a large, urban, acute care center, interdisciplinary clinical team, 124 community physicians, and eight SNFs.

SYNOPSIS: In addition to standard care, the Enhanced Care Program (ECP) included a team of nurse practitioners participating in the care of SNF patients, a pharmacist-driven medication reconciliation at the time of transfer, and educational in-services for SNF nursing staff. Following introduction of the three ECP interventions, 30-day readmission rates were compared for both ECP and non-ECP patient groups. After adjustment for sociodemographic and clinical characteristics, ECP patients had 29% lower odds of

being readmitted within 30 days (P less than .001). Multivariate analyses confirmed similar results. Major caveats include that this was a single-hospital study and that selection of the enrolled patients was not random, but rather, was determined by their primary care providers, potentially leading to some confounding.

BOTTOM LINE:

For patients discharged to SNFs, an interdisciplinary care approach may reduce 30-day hospital readmissions.

CITATION: Rosen BT et al. The Enhanced Care Program: Impact of a care transition program on 30-day hospital readmissions for patients discharged from an acute care facility to skilled nursing facilities. J Hosp Med. 2017 Oct 4:E1-E7. doi: 10.12788/jhm.2852.



Dr. Burklin

3 Admitting medicine patients to off-service, nonmedicine units is associated with increased in-hospital mortality

CLINICAL QUESTION: Do medicine patients admitted to off-service inpatient units during times of hospital saturation have worse quality of care and outcomes?

BACKGROUND: Increased saturation of hospital capacity compromises patient outcomes. This creates additional challenges for the provision of appropriate specialized care. In some hospitals, patients are "bed-spaced," or admitted to non-internal medicine service locations, such as a surgical ward, in order to free up space in the emergency department. Whether bed-spacing reduces quality of care or patient outcomes has not been previously studied.

STUDY DESIGN: Retrospective cohort study.

SETTING: Large tertiary care academic hospital in Canada, during Jan. 1, 2015-Jan. 1, 2016.

SYNOPSIS: There were 3,243 patients included in the analysis, of which 1,125 (35%) were bed-spaced

to the off-service wards. The remaining 2,118 patients (65%) were admitted to the assigned internal medicine units. In the first week of hospitalization, in-hospital mortality among bed-spaced patients was approximately three times that of patients admitted to the assigned internal medicine wards. Upon admission, in-hospital mortality for the bed-spaced patients had a hazard ratio of 3.42 (95% confidence interval, 2.23-5.26; P less than .0001) with subsequent decrease by 0.97 (95% CI, 0.94-0.99; P = .0133) per day in the hospital. By the third week of hospitalization, the mortality risks had equalized. Sensitivity analyses revealed similar results.

BOTTOM LINE: This retrospective study is based on a single center; however, the observed increased mortality among the bed-spaced patients merits further investigation. Assessment of study generalizability and formulation of strategies for improving patient safety are needed.

CITATION: Bai AD et al. Mortality of hospitalised internal medicine patients bed-spaced to non-internal medicine inpatient units: Retrospective cohort study. *BMJ Qual Saf.* 2018 Jan;27(1):11-20. doi: 10.1136/bmjqs-2017-006925.

Dr. Burklin is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By Karen Clarke, MD, MS, MPH, FACP, FHM

4 Any detectable high-sensitivity cardiac troponin T (hs-cTn) level is associated with adverse outcomes

CLINICAL QUESTION: What is the association between high-sensitivity cardiac troponin T (hs-cTn) levels and outcomes in patients with chest pain? **BACKGROUND:** There are few data on the link between hs-cTn levels and outcomes in patients with chest pain but no myocardial infarction or any other condition that can cause acute increases in troponin levels.

STUDY DESIGN: Observational cohort study.

SETTING: Patients older than 25 years old with chest pain presenting to the emergency department at a university hospital in Sweden.

SYNOPSIS: 19,460 patients with chest pain who had at least one hs-cTn level obtained during their ED visit were included in this study. In comparison with patients who had hs-cTn less than 5 ng/L, the adjusted hazard ratios for all-cause mortality were 2.00, 2.92, 4.07, 6.77, and 9.68, in

patients with hs-cTn levels of 5-9, 10-14, 15-29, 30-49, and 50 or greater ng/L, respectively. The yearly rates of MI were 0.3% and 4.5% in patients with hs-cTn levels less than 5 ng/L and 50 or greater ng/L, respectively. The yearly rates of hospitalization for heart failure were 0.1%, 1%, 2.8%, and 20% in patients with hs-cTn levels less than 5, 5-9, 10-14, and 50 or greater ng/L, respectively. There was a clear and graded association between any detectable levels of hs-cTn and risk factors for cardiovascular and noncardiovascular mortality, MI, and heart failure.

BOTTOM LINE: For patients with chest pain and stable troponin levels, there is an elevated risk of death, hospitalization for heart failure, and MI, if there is any detectable level of hs-cTn.

CITATION: Roos A et al. Stable high-sensitivity cardiac troponin T levels and outcomes in patients with chest pain. *J Am Coll Cardiol.* 2017 Oct 31;70(18):2226-36. doi: 10.1016/j.jacc.2017.08.064.



Dr. Clarke

5 Percutaneous coronary intervention (PCI) does not improve exercise time in patients with stable angina

CLINICAL QUESTION: Does PCI provide symptom relief in patients with stable angina?

BACKGROUND: More than 500,000 PCIs are done yearly worldwide in patients with stable angina. Meta-analyses have demonstrated no impact of PCI on rates of death and myocardial infarction in patients with stable angina. Rather, relief of angina is the main reason for performance of PCI in patients with stable coronary artery disease, and this effect is frequently noted. However, there have been no data from double-blind, randomized, controlled trials to confirm the efficacy of PCI in relieving anginal pain.

STUDY DESIGN: Multicenter, double-blind, randomized, controlled trial.

SETTING: Five sites in the United Kingdom.

SYNOPSIS: The Objective Randomized Blinded Investigation With Optimal Medical Therapy of Angioplasty in Stable Angina (ORBITA) trial was designed to evaluate the effect of PCI, compared with pla-

Continued on following page

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Continued from previous page

cebo, on exercise time in patients with stable angina. The 230 patients who were enrolled in ORBITA had severe (70% or more), single-vessel stenosis. After enrolling, patients' medication regimens were optimized so that almost all were taking aspirin, a second antiplatelet drug, and a statin. Beta-blockers and calcium channel blockers also were widely used by trial participants. Two hundred patients were randomized to either PCI (105 patients) or placebo procedure (95 patients). The primary endpoint was exercise time, and no difference was observed between the two groups. ORBITA's results apply to patients with stable angina but not to those who undergo PCI for acute coronary syndrome (which includes ST-elevation MI); in the latter population, PCI has been demonstrated to reduce morbidity and mortality.

BOTTOM LINE: In patients with stable angina, PCI does not increase exercise time.

CITATION: Al-Lamee R et al. Percutaneous coronary intervention in stable angina (ORBITA): A double-blind, randomised controlled trial. *Lancet*. 2018 Jan;391(10115):31-40.

Dr. Clarke is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By James S. Kim, MD

6 Sound and light levels are similarly disruptive in ICU and non-ICU wards

CLINICAL QUESTION: While it is generally thought that ICU wards are not conducive for sleep because of light and noise disruptions, are general wards any better?

BACKGROUND: Hospitalized patients frequently report poor sleep, partly because of the inpatient environment. Sound level changes (SLCs), rather than the total volumes, are important in disrupting sleep. The World Health Organization recommends that nighttime baseline noise levels do not exceed 30 decibels (dB) and that nighttime noise peaks (i.e., loud noises) do not exceed 40 dB. The circadian rhythm system depends on ambient light to regulate the internal clock. Insufficient and inappropriately timed light exposure can desynchronize the biological clock, thereby negatively affecting sleep quality.

STUDY DESIGN: Observational study. **SETTING:** Tertiary care hospital in La Jolla, Calif.

SYNOPSIS: For approximately 24-72 hours, recordings of sound and light were performed. ICU rooms were

louder (hourly averages ranged from 56.1 dB to 60.3 dB) than were non-ICU wards (44.6-55.1 dB). However, SLCs of 17.5 dB or greater were not statistically different (ICU, 203.9 ± 28.8 times; non-ICU, 270.9 ± 39.5; $P = .11$). In both ICU and non-ICU wards, average daytime light levels were less than 250 lux and generally were brightest in the afternoon. This corresponds to low, office-level lighting,



Dr. Kim

which may not be conducive for maintaining circadian rhythm.

BOTTOM LINE: While ICU wards are generally louder than non-ICU wards, sound level changes are equivalent

and probably more important concerning sleep disruption. While no significant differences were seen in light levels, the amount and timing of lighting may not be optimal for keeping circadian rhythm.

CITATION: Jaiswal SJ et al. Sound and light levels are similarly disruptive in ICU and non-ICU wards. *J Hosp Med*. 2017 Oct;12(10):798-804.

Dr. Kim is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By Noble Maleque, MD, FHM, FACP

7 Use of a risk score may be able to identify high-risk patients presenting with acute heart failure

CLINICAL QUESTION: Can we use readily available data to risk stratify patients who present to the emergency department in acute heart failure (AHF)?

BACKGROUND: Although cardiac biomarkers such as troponin and B-natriuretic peptide have general prognostic value in patients with AHF presenting to the emergency department, these values do not reliably aid in determining patients' risk for unfavorable outcomes at the time of clinical decision making. Currently available published scores for risk-stratifying patients with AHF in the ED have limited applicability.

STUDY DESIGN: Prospective cohort study (with second validation cohort). **SETTING:** The registry included patients from 34 different hospitals in Spain.

SYNOPSIS: This study analyzed clinical variables from a cohort of 4,897 AHF patients to determine predictors of patient outcomes. Thirteen clinical variables were identified as indepen-

dent predictors of 30-day mortality and were incorporated into a risk score calculator (MEESSI-AHF). The risk score includes variables such as vital signs, age, labs values, and performance status. A second cohort of 3,229 patients were used to validate the risk score. The risk score effectively discriminates patients into low-, intermediate-, and high-risk patients. One important limitation is a high number of missing values in derivation cohort that required advanced statistics to overcome. The generalizability of the population studies (Spanish population) to other countries is still unclear. A risk score that can reasonably identify low-risk patients may be the most clinically useful in order to identify patients that either can be treated effectively in the emergency department and may not warrant inpatient admission.

BOTTOM LINE: The MEESSI-AHF risk score may be a helpful tool in identifying the risk of 30-day mortality in patients



Dr. Maleque

who present to the ED with AHF, but it is currently unclear if the score can be generalized to other populations.

CITATION: Miro O et al. Predicting 30-day mortality

for patients with acute heart failure in the emergency department: A cohort study. *Ann Intern Med*. 2017 Nov 21;167(10):698-705.

8 Delaying lumbar punctures for a head CT may result in increased mortality in acute bacterial meningitis

CLINICAL QUESTION: Can we safely perform lumbar punctures (LP) without neuroimaging in patients with acute bacterial meningitis (ABM)?

BACKGROUND: ABM is a diagnosis with high morbidity and mortality. Early antimicrobial and corticosteroid therapy is beneficial. Current practice tends to defer LP prior to imaging when there is potential risk of herniation. Sweden's guidelines for getting a CT scan prior to LP differ substantially from the Infectious Disease Society of America (IDSA), which recommends obtaining CT in patients with immunocompromised state, history of CNS disease, or impaired mental status.

STUDY DESIGN: Prospective cohort study.

SETTING: 815 adult patients (older than 16 years old) in Sweden with confirmed acute bacterial meningitis.

Short Takes

Immediate percutaneous coronary intervention (PCI) of the culprit lesion only in patients presenting with acute myocardial infarction and cardiogenic shock may lead to better outcomes, even in those with multivessel disease

A total of 706 patients with multivessel coronary artery disease who presented with acute MI and cardiogenic shock were randomized to either PCI of the culprit lesion only (followed by optional staged revascularization of nonculprit lesions) or to immediate multivessel PCI. Patients who received PCI of the culprit lesion only had a lower 30-day risk of death or severe renal failure leading to renal-replacement therapy than did those who underwent immediate multivessel PCI.

CITATION: Thiele H et al. PCI strategies in patients with acute myocardial infarction and cardiogenic shock. *N Engl J Med*. 2017 Oct. doi: 10.1056/NEJMoa1710261 (epub ahead of print).

SYNOPSIS: The authors looked at adherence to guidelines for when to obtain a CT prior to LP, as well as compared mortality and neurologic outcomes when an LP was performed promptly versus when delayed for prior neuroimaging. CT neuroimaging was required in much smaller populations under Swedish guidelines (7%), compared with IDSA (65%), with improved mortality and outcomes in patients managed with the Swedish guidelines. Mortality was lower in patients who had a prompt LP than for those who got CT prior to the LP (4% vs. 10%). This mortality benefit was seen even in patients with immunocompromised state or altered mental status, confirming that earlier administration of appropriate therapy is associated with lower mortality. A major limitation is that the study included patients with confirmed meningitis rather than more clinically relevant cases of suspected bacterial meningitis.

BOTTOM LINE: Patients with suspected bacterial meningitis should have appropriate antimicrobial and corticosteroid therapy started as soon as possible, regardless of the decision to obtain CT scan prior to performing lumbar puncture.

CITATION: Glimaker M et al. Lumbar puncture performed promptly

or after neuroimaging in acute bacterial meningitis in adults: a prospective national cohort study evaluating different guidelines. *Clin Infect Dis.* 2017 Sep 9. doi: 10.1093/cid/cix806 (epub ahead of print).

Dr. Maleque is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By Christopher M. O'Donnell, MD, FHM

9 Patients presenting with saddle pulmonary emboli (PE) versus nonsaddle PE have no mortality difference but have an increased risk for decompensation

CLINICAL QUESTION: Do saddle pulmonary embolisms have worse outcomes compared to nonsaddle pulmonary embolisms?

BACKGROUND: Patients with saddle PEs can differ in terms of their clinical presentation and may present as hemodynamically stable or unstable. There have been few studies to quantify the presentation, management, and outcome of patients who present with saddle PEs. **STUDY DESIGN:** Retrospective cohort study.

SETTING: Quaternary care hospital in Minnesota.

SYNOPSIS: From a localized database, 187 consecutive patients with saddle PEs were matched with 187 nonsaddle PEs using age and the simplified Pulmonary Embolism Severity Index (sPESI). Saddle PE



Dr. O'Donnell

patients had no significant in-hospital mortality differences versus nonsaddle PEs. However, they were more likely to present with massive and sub-massive hemody-

namics (80% vs. 52%; P less than .05), right ventricular dilatation (84% vs. 67%; P less than .001), and troponin elevation (71% vs. 40%; P less than .001). Patients with saddle PEs were more likely to receive thrombolytics, inferior vena cava filter placement, and mechanical ventilation. They also had increased risk of decompensation after 6 hours (12 patients vs. 6 patients). Limitations of this study include some selection bias and use of a single-center study. Regardless, hospitalists should consider close monitoring for patients with saddle PEs upon admission, independent of hemodynamics given risk of decompensation regardless of presenting vitals.

BOTTOM LINE: Saddle PEs have an increased risk of late decompensation, clot burden, and presentation with massive and submassive hemodynamics but not an increased risk of mortality when compared with nonsaddle PEs.

CITATION: Alkinj B et al. Saddle vs. nonsaddle pulmonary embolism: Clinical presentation, hemodynamics, management, and outcomes. *Mayo Clin Proc.* 2017 Oct;92(10):1511-8.

Dr. O'Donnell is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.

By Willie H. Smith Jr., MD

10 Risk of ED visit/hospitalization increases when brand-name angiotensin receptor blockers (ARB) are switched to generic versions

CLINICAL QUESTION: Does switching from a brand name ARB to its generic lead to more ED visits and hospitalizations?

BACKGROUND: Once a brand name drug's patent expires, its generic form is commercialized and patients may be switched to the generic version. The drug equivalence of the generic vs. the brand name product may be substantial enough to affect clinically what is happening to the patient. Very few studies exist on the impact of the differences between brand-name and generic ARBs; those that do exist show conflicting results on clinical outcomes for the patient.

STUDY DESIGN: Observational retrospective interrupted time-series analysis.

SETTING: Quebec Integrated Chronic Disease Surveillance System in Quebec.

SYNOPSIS: The study analyzed 136,177 patients older than 66 years old with multiple comorbidities during the transition from brand-name to generic versions of losartan, valsartan, and candesartan.

The authors compared ER visits or hospitalization of the brand-name users for 24 months before and 12 months after being transitioned from a brand-name ARB to a generic. All three groups were found to have higher rates of adverse events after switching to generics (8% for losartan, 11.7% for valsartan, and 16.6% for candesartan). The study was limited as the authors did not have access to the reason for the ER visits/admissions or the ability to determine which generic version was used (e.g., losartan has eight generic versions). The study highlights the need for further evaluation by risk and survival analysis to control

confounders when switching to a generic formulation.

BOTTOM LINE: Switching patients from a brand-name to a generic ARB may lead to more ED consultations and hospital admissions.

CITATION: Leclerc J et al. Impact of the commercialization of three generic angiotensin II receptor blockers on adverse events in Quebec Canada. *Circ Cardiovasc Qual Outcomes.* 2017 Oct 3. pii 10e003891. doi: 10.1161/circoutcomes.117.003891.



Dr. Smith

Dr. Smith is assistant professor of medicine in the Division of Hospital Medicine, Emory University, Atlanta.

By Michele Sundar, MD

11 Use procalcitonin-guided algorithms to guide antibiotic therapy for acute respiratory infections to improve patient outcomes

CLINICAL QUESTION: How does using procalcitonin levels for adults with acute respiratory infections (ARIs) affect patient outcomes?

BACKGROUND: While the ARI diagnosis encompasses bacterial, viral, and inflammatory etiologies, as many as 75% of ARIs are treated with antibiotics. Procalcitonin is a biomarker released by tissues in response to bacterial infections. Its production is also inhibited by interferon-gamma, a cytokine released in response to viral infections, therefore, making procalcitonin a biomarker of particular interest to support the use of antibiotic therapy in the treatment of ARIs.

STUDY DESIGN: Cochrane Review. **SETTING:** Medical wards, intensive care units, primary care clinics, and emergency departments across 12 countries.

SYNOPSIS: The review included 26 randomized control trials of 6,708 immunocompetent adults with ARIs who received antibiotics either based on procalcitonin-guided antibiotic therapy or routine care. Primary endpoints evaluated included all-cause mortality and treatment failure at 30 days. Secondary endpoints were antibiotic use, antibiotic-related side effects, and length of hospital stay. There were significantly fewer deaths in the procalcitonin-guided group than in the control group (286/8.6% vs. 336/10%; adjusted odds ratio, 0.83; 95% confidence interval, 0.70-0.99;

Short Takes

Giving iron supplements every other day may be superior to daily divided doses

Serum hepcidin levels and iron absorption were compared in women given daily dosing of ferrous sulfate, women given alternate-day dosing, and women given two divided doses daily. Women on the alternate-day regimen and the single-day regimens had higher iron absorption and lower hepcidin levels than did the women on the split-dosing regimen; these findings need to be confirmed in patients with iron-deficiency anemia.

CITATION: Stoffel NU et al. Iron absorption from oral iron supplements given on consecutive versus alternate days and as single morning doses versus twice-daily split dosing in iron-depleted women: Two open-label, randomised controlled trials. *Lancet Haematol.* 2017 Nov;4(11):e524-33.

$P = .037$). Treatment failure was not statistically different between the procalcitonin-guided participants and the controls. Of the secondary endpoints, antibiotic use and antibiotic-related side effects were lower in the procalcitonin-guided group (5.7 days vs. 8.1 days; P less than .001; and 16.3% vs. 22.1%; P less than .001). Each of the RCTs had varying algorithms for the use of procalcitonin-guided therapy, so no specific treatment guidelines can be gleaned from this review.

BOTTOM LINE: Procalcitonin-guided algorithms are associated with lower mortality, lower antibiotic exposure, and lower antibiotic-related side effects. However, more research is needed to determine best practice algorithms for using procalcitonin levels to guide treatment decisions.

CITATION: Schuetz P et al. Procalcitonin to initiate or discontinue antibiotics in acute respiratory tract infections. *Cochrane Database Syst Rev.* 2017 Oct 12. doi: 10.1002/14651858.cd007498.pub3.

Dr. Sundar is assistant professor of medicine in the division of hospital medicine, Emory University, Atlanta.



Dr. Sundar



DIVISION HEAD OF HOSPITAL MEDICINE

The Henry Ford Medical Group (HFMG), one of the largest multispecialty group practices in the country, is seeking a highly qualified Division Head in its Division of Hospital Medicine. With nearly 30 years of experience in Hospital Medicine, HFMG established a separate Division of Hospital Medicine in 2008, and is the largest Division in the Department of Medicine with over 50 hospitalist faculty serving at three different hospitals.

This is an excellent leadership opportunity with continued professional growth in a strong hospitalist group committed to the development of high quality hospitalists. The Division continues to be a leader in HFHS efforts to promote systemic integration/alignment, clinical excellence, innovation, and value in an accountable care environment.

The successful candidate will be ABIM certified (preference Internal Medicine with a Focused Practice in Hospital Medicine) and have at least 7 years of hospitalist practice experience with progressive proven leadership skills in a large hospitalist program preferably in an integrated healthcare organization. Strong clinical and communication skills are essential. Significant experience with quality and care management initiatives, operational management, as well as medical education are also desired.

Generous group practice benefits are provided including: vacation, CME time/allowance, insurance (life/disability/malpractice), and retirement package. A faculty appointment at Wayne State University School of Medicine is available commensurate with prior experience.

Review of applications will begin immediately and continue until the position is filled.
Please submit your letter of interest and CV to:

Dr. Kimberly Baker-Genaw, Vice Chair of Medicine,
in c/o Scott Johnson, Senior Physician Recruiter,
at sjohns10@hfhs.org.



HOSPITALIST

The Division of Internal Medicine at Penn State Hershey Medical Center, The Pennsylvania State University College of Medicine, is accepting applications for **HOSPITALIST** positions. Successful candidates will hold a faculty appointment to Penn State College of Medicine and will be responsible for the care in patients at Penn State Hershey Medical Center. Individuals should have experience in hospital medicine and be comfortable managing patients in a sub-acute care setting. Hospitalists will be part of the post-acute care program and will work in collaboration with advanced practice clinicians, residents, and staff. In addition, the candidate will supervise physicians-in-training, both graduate and undergraduate level, as well as participate in other educational initiatives. The candidate will be encouraged to develop quality improvement projects in transitions of care and other scholarly pursuits around caring for this population. This opportunity has potential for growth into a leadership role as a medical director and/or other leadership roles.

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Known for home of the Hershey chocolate bar, Hershey, PA is rich in history and offers a diverse culture. Our local neighborhoods boast a reasonable cost of living whether you prefer a more suburban setting or thriving city rich in theater, arts, and culture. Hershey, PA is home to the Hershey Bears hockey team and close to the Harrisburg Senators baseball team. The Susquehanna River, various ski slopes and the Appalachian Trail are in our backyard, offering many outdoor activities for all seasons.



The Penn State Milton S. Hershey Medical Center is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.

Successful candidates require the following:

- Medical degree - M.D., D.O. or foreign equivalent
- Completion of an accredited Internal Medicine Residency program
- Eligibility to acquire a license to practice in the Commonwealth of Pennsylvania
- Board eligible/certified in Internal Medicine
- No J1 visa waiver sponsorships available

For further consideration, please send your CV to:

Brian McGillen, MD – Director, Hospital Medicine
Penn State Milton S. Hershey Medical Center
c/o Heather Peffley, PHR FASPR – Physician Recruiter
hpeffley@hmc.psu.edu



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Chair, Division of Hospital Medicine

at Lahey Hospital & Medical Center

The Division of Hospital Medicine at Lahey Health, headquartered in Burlington Massachusetts, is actively seeking an experienced physician leader to manage and operate Hospital Medicine Services within our geographically distributed system of hospitals located North of Boston. The Hospital Medicine group is comprised of approximately 63 physician FTEs, and 24 FTE advanced care providers responsible for approximately 11,000 discharges annually, and all committed to providing high quality patient-centered care. Our hospitalists enjoy a high level of collegiality and a supportive environment in which individual contributions are recognized and true team spirit is fostered and expected. The Chair of Hospital Medicine at Lahey Health reports to the Chair of the Department of Medicine.

Lahey Health is a progressive and highly regarded integrated healthcare system offering a continuum of care that includes three Truven Health Analytics top 100 hospital organizations in the country: Lahey Hospital & Medical Center, a renowned 317-bed, Tufts-affiliated Teaching Hospital; Winchester Hospital, perennially voted the top hospital to work for in Massachusetts; and Beverly Hospital, recognized by Blue Cross and Blue Shield for two years running as the top quality hospital in all of Massachusetts. Lahey Health also includes outpatient centers, primary care providers and specialists, behavioral health services, post-acute programs such as home health services, skilled nursing and rehabilitation facilities, and senior care resources located throughout northeastern Massachusetts and southern New Hampshire.

Lahey is dedicated to the goal of building a culturally diverse and pluralistic organization committed to caring for patients and ourselves in a multicultural environment. We strongly encourage applications from minorities and women.



It is expected that the Chair of Hospital Medicine will:

- Work and collaborate with physician, nursing and administrative leadership as a triad in achieving high quality, patient centric, and cost effective care.
- Collaborate effectively with the other Divisions within the Department of Medicine, and with the Departments of Emergency Medicine and Surgery, as well as community practitioners.
- Develop and implement quality improvement goals and objectives that are aligned with Lahey's organizational strategy.
- Provide high quality clinical care.
- Serve as a supportive role model and mentor to other members of the Division.
- Develop and conduct annual performance evaluations for all clinicians.
- Lead the recruitment and retention of physicians and advanced practitioners.
- In collaboration with administrative and finance staff, develop and manage to the annual budget for the Division.
- Actively support the educational mission of the Division in the teaching of medical students and residents, and in Lahey's CME programs.
- Develop a program of research which is inclusive and aligned with the clinical and quality improvement mission of the Division.

Candidates for this position:

- Must be Board Certified in Internal Medicine and eligible for licensure in Massachusetts.
- Should have a minimum of 5 years' experience working as a hospitalist, and at least 2 years' experience in a leadership role.
- Should have attained fellowship in the Society of Hospital Medicine and/or fellowship of the American College of Physicians.
- Should possess strong clinical, managerial and leadership skills, and demonstrate a high level of emotional and social intelligence.

For consideration and/or additional details, please contact:

David T Martin, MD, FRCP, MACP

Chair, Department of Medicine Lahey Hospital & Medical Center

41 Mall Road, Burlington, MA 01805

Email: david.t.martin@lahey.org



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Please email a letter of interest and curriculum vitae to:

Gabriel J. Escobar, MD

Email: gabriel.escobar@kp.org

and please cc: fernando.barreda@kp.org

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For information contact Kalah Haug, Medical Staff Recruitment, at kjhaug@gundersenhealth.org or (608) 775-1005.



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HOSPITALIST

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The Medical Director, Hospitalist Service, is responsible for providing on-site clinical leadership and management for the Network. This individual will serve as the clinical lead and will work closely with physicians, Site Medical Directors, AP leadership and Staff to assure consistent high quality in keeping with the goals of the organization and the group. Must have three to five years' experience in Hospital Medicine and be board certified; leadership experience strongly preferred. Excellent compensation and benefit package.

SLUHN is a non-profit network comprised of more than 450 physicians, 200 advanced practitioners and 7 hospitals, providing care in eastern Pennsylvania and western New Jersey. St. Luke's currently has more than 180 physicians enrolled in internship, residency and fellowship programs and is a regional campus for the Temple/St. Luke's School of Medicine. Visit www.slhn.org.

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Please email your CV to Drea Rosko at
physicianrecruitment@sluhn.org

ACADEMIC NOCTURNIST HOSPITALIST

The Division of General Internal Medicine at **Penn State Health Milton S. Hershey Medical Center**, Penn State College of Medicine (Hershey, PA) is seeking a BC/BE Internal Medicine **NOCTURNIST HOSPITALIST** to join our highly regarded team. Successful candidates will hold a faculty appointment to Penn State College of Medicine and will be responsible for the care in patients at Hershey Medical Center. Individuals should have experience in hospital medicine and be comfortable managing patients in a sub-acute care setting.

Our Nocturnists are a part of the Hospital Medicine program and will work in collaboration with advanced practice clinicians and residents. Primary focus will be on overnight hospital admission for patients to the Internal Medicine service. Supervisory responsibilities also exist for bedside procedures, and proficiency in central line placement, paracentesis, arthrocentesis, and lumbar puncture is required. The position also supervises overnight Code Blue and Adult Rapid Response Team calls. This position directly supervises medical residents and provides for teaching opportunity as well.

Competitive salary and benefits among highly qualified, friendly colleagues foster networking opportunities. Excellent schools, affordable cost of living, great family-oriented lifestyle with a multitude of outdoor activities year-round. Relocation assistance, CME funds, Penn State University tuition discount for employees and dependents, LTD and Life insurance, and so much more!

Appropriate candidates must possess an MD, DO, or foreign equivalent; be Board Certified in Internal Medicine and have or be able to acquire a license to practice in the Commonwealth of Pennsylvania.

Qualified applicants should upload a letter of interest and CV at:

<http://tinyurl.com/j29p3fz> Ref Job ID#4524

For additional information, please contact:

Brian Mc Gillen, MD — Director, Hospitalist Medicine
Penn State Milton S. Hershey Medical Center
c/o Heather Peffley, PHR FASPR — Physician Recruiter
hpeffley@hmc.psu.edu



The Penn State Milton S. Hershey Medical Center is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.



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Not a J-1 of H1B opportunity



Case Western Reserve University MetroHealth Medical Center Pediatric Hospitalist

The MetroHealth System, in affiliation with Case Western Reserve University School of Medicine, is seeking a qualified BC/BE pediatrician, at the Assistant Professor level, to join our pediatric hospitalist program. Our Pediatric Inpatient unit is a 20-bed unit, separate from a 10-bed PICU and a 45-bed NICU. The Hospitalist also manages the newborn nursery with MetroHealth having over 3,000 deliveries per year.

Subspecialty consult is immediately available in almost all disciplines. Activity includes managing hospitalized children and newborns. The Hospitalist works directly with residents and medical students in these areas. The department of pediatrics serves a large base of ambulatory pediatric practices supported with an array of subspecialty services. This position is an academic position, with resident and medical student education in the service areas and didactic sessions. Interest in clinical research and/or quality improvement is desired and will be supported.

Interested applicants should send their CV, and executive summary highlighting qualifications to:

David Roberts, M.D.
Chief of Hospitalist Medicine, Department of Pediatrics
MetroHealth Medical Center,
2500 MetroHealth Drive, Suite 409
Cleveland, OH 44109
Phone: (216) 778-1259
Fax: (216) 778-1361
Email: droberts3@metrohealth.org

Case Western Reserve University and The MetroHealth System are Equal Opportunity/Affirmative Action Employers. Women and minorities are encouraged to apply.

Opioids and hospital medicine: What can we do?

The stigma of addiction spurs the shame and secrecy

By Danielle B. Scheurer, MD, MSCR, SFHM

I recently attended a local Charleston (S.C.) Medical Society meeting, the theme of which was the opioid crisis. Although at the time I did not see a perfect relevance of this crisis to hospital medicine, I attended anyway, hoping to gain some pearls of wisdom regarding what my role in this epidemic could be.

I was already certainly aware of the extent of the opioid epidemic, including some startling statistics. For example, the burden of the crisis totaled \$95 billion in the United States in 2016 from lost productivity and health care and criminal justice system expenses.¹ But I was still not certain what my specific role could be in doing something about it.

The main speaker at the meeting was Nanci Steadman Shipman, the mother of a 19-year-old college student who had accidentally overdosed on heroin the year prior. She told the story of his upbringing, which was in an upper-middle-class suburban neighborhood, full of family, friends, and loving support. When her son was 15 years old, he suffered a leg injury during his lacrosse season, which led to a hospital stay, a surgery, and a prolonged recovery. It was during this period of time that, unbeknownst to his family, he became addicted to opioids.

Over the years, Nanci's son found ever more creative mechanisms to procure various opioids, eventually resorting to heroin, which was remarkably cheap and easy to find. All the while in high school, he maintained good grades, remained active in sports, and had a normal social circle of friends. It was not until his first year of college that his mother started to worry that something might be wrong. In less than a year, her son quit sports, and his grades spiraled. Despite ongoing family support and extensive rehab, he suffered more than one setback and accidentally overdosed.

After her son's death, Nanci started a nonprofit organization, Wake Up Carolina.² Its mission is to fight drug abuse among adolescents and young adults. They use a combination of education, awareness, prevention, and recovery tactics to

achieve their task. In the meantime, they try to diminish the shame and secrecy among families suffering from opioid addiction.

During Nanci's presentation at the medical society meeting, the message she conveyed to us – an audience full of physicians – was simple: We can either be part of the problem or part of the solution; we all have a duty to help and a role to play in this crisis. Whether a patient is exposed first inside the hospital or outside of it, for a short period of time or for a long one, every opioid exposure comes with a risk.

Nanci's story was incredibly affecting and made me rethink my personal role in this epidemic; how might I have contributed to this, and what could I do differently?

Shortly after her son died, her younger son suffered a femur fracture during a football game. You can imagine the horror her family felt knowing that he would need some pain medication for his acute injury. Nanci and her family were able to work with the medical and surgical teams, and through multimodal pain regimens, her son received little to no opioids during the hospital stay and was able to recover from the fracture with reasonable pain levels. She expressed gratitude that the hospital teams were willing to listen to her and her family's concerns and offer both pharmacological and nonpharmacological therapies for her son's recovery, which allayed their fears about opioids.

From this incredibly powerful and moving story of one family's experience, I was able to gather some very meaningful, evidence-based, and tangible practices that I could implement in my own organization. These might even help other hospitalists take an active role in stemming this sadly growing epidemic.

As hospitalists, we should work on the following:

- Improve our personal knowledge of and skills in utilizing multimodal pain therapies regardless of the etiology of the pain. These should include both pharmacologic and nonpharmacologic interventions.
- Use consultants to assist us with difficult cases. Depending on our practice setting, we should utilize

consultants who can give us good advice on nonopioid pain management regimens, such as palliative care.

- Try to influence the practice of surgeons and other specialties that consult us, to help shape prescribing patterns that include nonopioid medical regimens, and to get doctors used to entertaining nonpharmacologic pain-reducing interventions.
- Limit the volume of prescription opioids written to our patients at the time of hospital discharge. There is mounting literature that suggests leftover prescriptions can be the start of an opioid addiction for a family member.
- Educate ourselves and our patients about any local "take back" programs that allow for safe, secure, and anonymous drops of prescription medications. This may reduce opioids getting into the hands of someone who might later become addicted.
- Find out whether our hospitals or health systems have a pain or opioid oversight group or team, and if not, see whether there is interest in starting one.
- Look into local community activist programs to partner with for education, awareness, prevention, or treatment options (such as Wake Up Carolina).
- Work with local resources (for example, case management, social workers, psychiatrists) to learn about and utilize local options for rehabilitation. We should actively and openly discuss these options with any patients known or suspected to be addicted.
- Make a valiant attempt to remove any unconscious bias against people who have become addicted to opioids. Continuing the social stigma of addiction only spurs the shame and secrecy.

Please share other ideas or suggestions you may have regarding the role hospitalists can have in curbing this growing epidemic.

References

1. "Burden of opioid crisis reached \$95 billion in 2016; private sector hit hardest." Altarum press release. Nov 16, 2017.

2. Wake Up Carolina website. <https://wake-up-carolina.org/>



"From this incredibly powerful and moving story of one family's experience, I was able to gather some very meaningful, evidence-based, and tangible practices that I could implement in my own organization."



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